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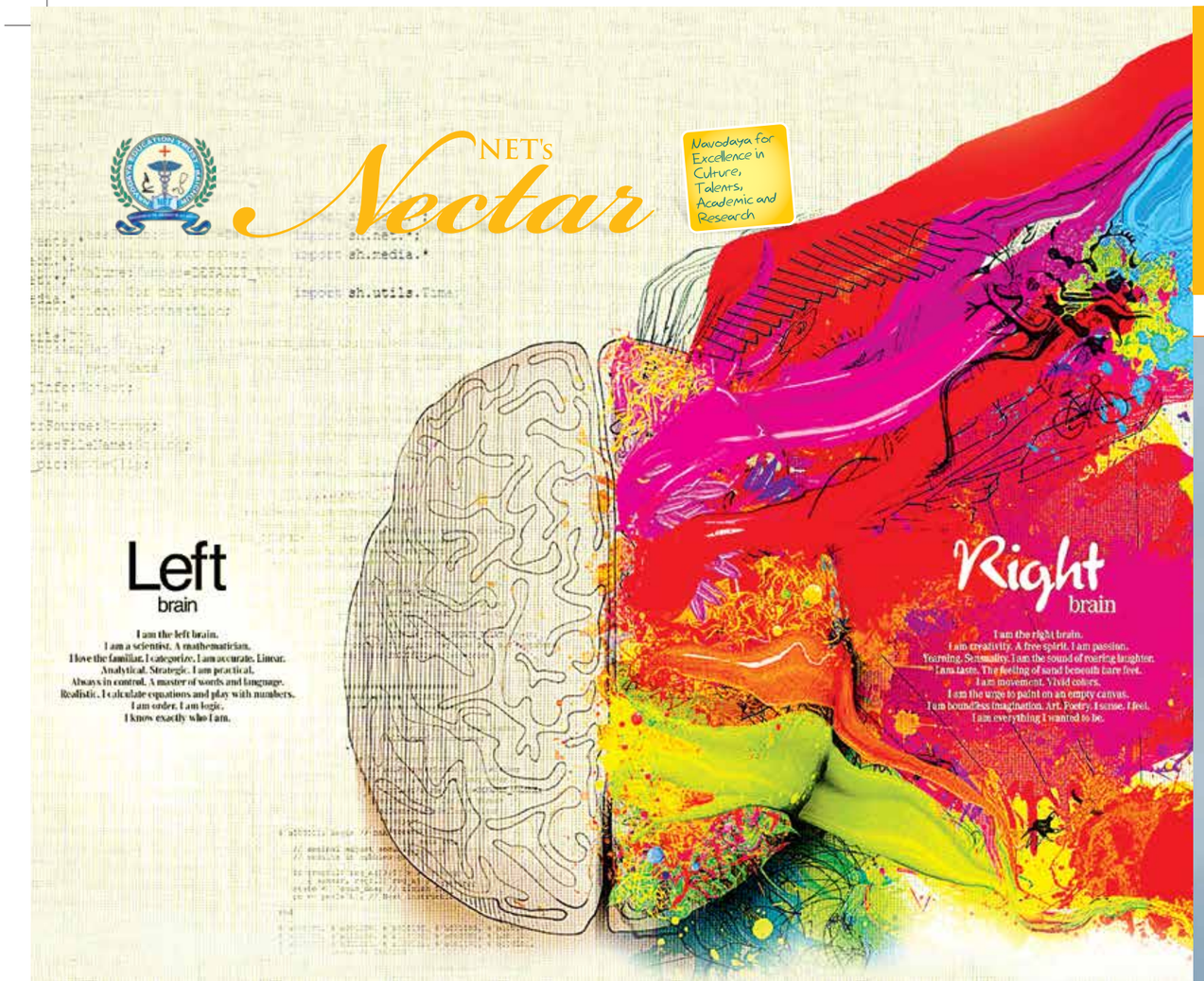

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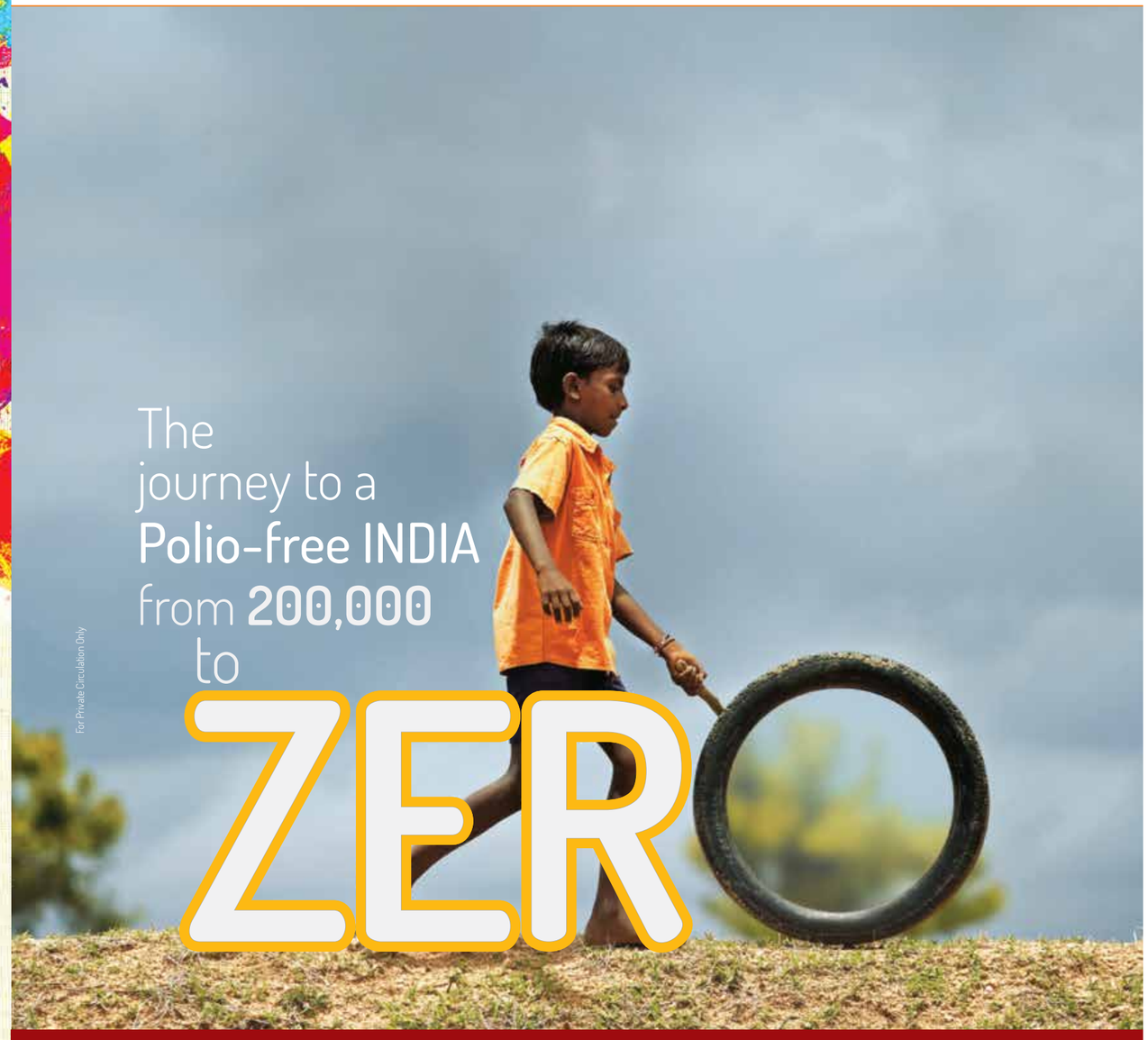

Quarterly Magazine from **Navodaya Group of Institutions**, Raichur

NET's Nectar

Navodaya for Excellence in Culture, Talents, Academic and Research

Vol - 04 | Issue - 12 & 13 | Jan - Jun 2014

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Message from

Editor-in-Chief

Dear Readers,

Nectar faced a sudden minor jolt in the middle due to some inevitable circumstances. But the editorial board took it as a challenge, confronted and come with refreshed and rejuvenated Nectar issue this time.

Everyone loves a success story, especially one of these magnitudes. India has now gone three consecutive years without a single case of polio. Many critics believed that this day would never come, that the polio virus was too firmly entrenched in India that India would never be polio free. In their view, India had limited means and unlimited challenges. But we all made it and proved the world with the great success story. This issue features with the cover story dedicated to the history of polio free India.

The scientific articles in this issue features with fine blend of reviews from Anesthetist perspective of intravenous lipid emulsion for drug induced toxicity, prevention of gagging by dental surgeon, feature of energy harvesting devices and 5G technology from engineers and spinal cord injury rehabilitation by Physiotherapist.

Indians are highly respected in the global markets for their high caliber. Indeed it was great proud moment to all Indian citizens, when Satya Nadella was made the CEO of Microsoft. A special article about Satya Nadella is carried in this issue.

To decide to go green isn't just about the present state of the planet, it's also about the ever-unfolding future. It's about the limited present resources of the planet and how we are preserving it for the future. Going online by adapting technology has a considerable impact in the environment. The Green Audit Committee in Navodaya Dental College contributed to the environment and made efforts like observing World Earth Hour in March and celebrated World Earth week in April.

Accolades and Navodaya have become synonymous. Our Engineering students topped in the prestigious GATE examinations and Medical post graduate students and Pharmacy student securing ranks in the RGUHS university exams.

Talents are around the corner in our Navodaya campus. Our students have unique talents and some of their authentic works are published in this issue of Nectar.

Many kaleidoscopic events shaped up over last few months making Navodaya campus most lively and all those events are featured in this issue.

Happy Reading

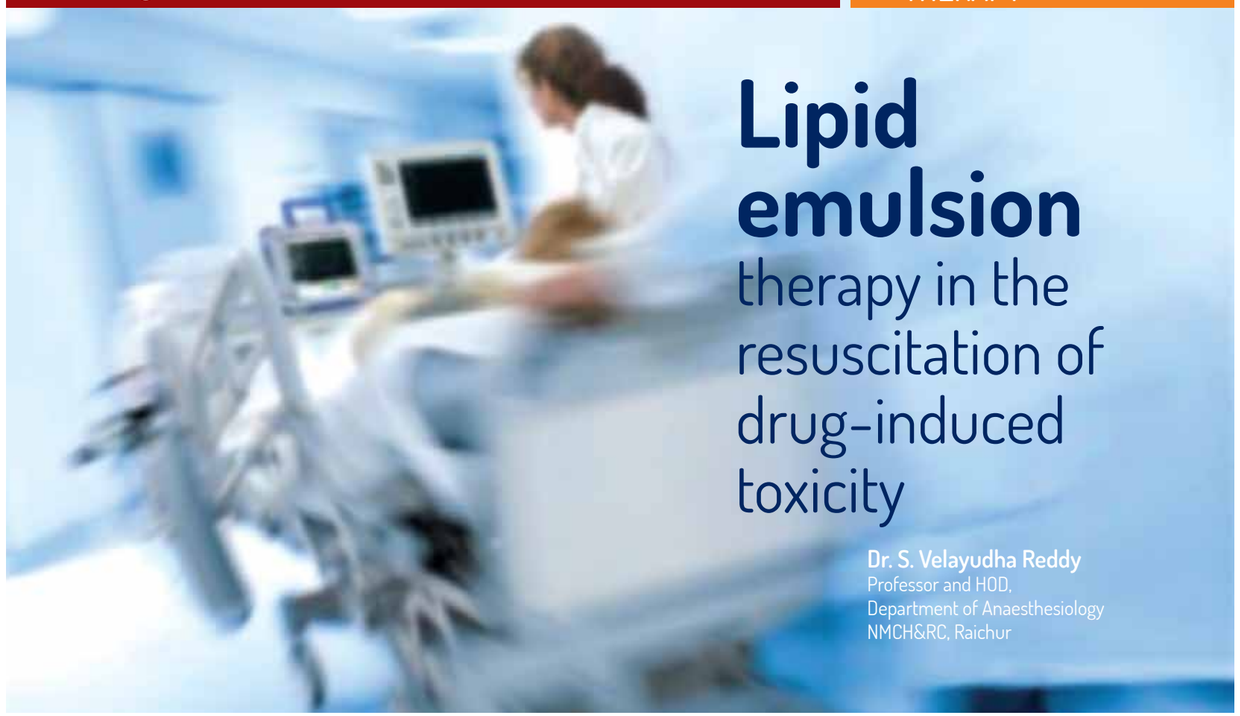
Dr. S. Ramabhimaiah
Editor-in-Chief
Nectar

CONTENT

Vol - 04 | Issue - 12 & 13 | Jan - Jun 2014

SCIENTIFIC ARTICLE

LIPID EMULSION THERAPY



Lipid emulsion therapy in the resuscitation of drug-induced toxicity

Dr. S. Velayudha Reddy
Professor and HOD,
Department of Anaesthesiology
NMCH&RC, Raichur

Abstract

Initial efficacy of intravenous lipid emulsion was shown in the setting of local anaesthetic systemic toxicity, but recent case reports suggest its consideration in a variety of other drug toxicities. Anaesthetic organizations, over the globe have developed guidelines on the use of lipid emulsion. Despite this, awareness amongst practitioners appears to be lacking. The objective of this review is to educate and encourage colleagues in all specialties to adopt the accepted guidelines. In this review, we will look at the clinical experience in using lipid emulsion in local anaesthetic systemic toxicity as well as toxicity due to nonlocal anesthetic lipid-soluble drugs. We will also review the current dosing recommendations as well as potential side effects of lipid emulsion as an antidote. To review the literature a randomized MEDLINE search has been made using search words lipid emulsion, fat emulsion, local anaesthetic toxicity and nonlocal anaesthetic toxicity from 1998 to 2012, utilizing the search engines PUBMED and relevant material published in this article.

Protocols exist for administration of lipid emulsion in the resuscitation of local anaesthetic toxicity. Additional research into the mechanisms of lipid emulsion in the effective resuscitation of nonlocal anaesthetic drug overdoses will aid the development of clinical guidelines.

Introduction

Cardiovascular Collapse is the most life-endangering complication of local anaesthetic systemic toxicity (LAST), which is considered to be resistant to conventional modes of resuscitation. However in 1998 Dr. Guy Weinberg reported the effective use of intravenous lipid emulsion (ILE) in the resuscitation of bupivacaine toxicity in rats. Subsequent case reports demonstrated rapid reversal of LAST and nonlocal anaesthetic toxicities with use of ILE often after standard resuscitative efforts had failed. Cave G et al. in his literature search reported use of ILE in treating fatal over dose of 19 cases of LAST and 23 cases of nonlocal anaesthetic toxicity. Recent research has focus on the efficacy of ILE in resuscitating patients from overdoses of lipophilic drugs other than LAs. This review will focus on the clinical application of ILE therapy in resuscitation of drug-related toxicity and will provide an introduction to the guidelines for its use, with insights into potential controversies and future application.

Intravenous lipid emulsion

The commercial preparation 'Intralipid' a 20% lipid emulsion manufactured by Fresenius Kabi, Uppsala, Sweden, consists of 20% soybean oil, 1.2% egg yolk phospholipids, 2.25% glycerol, 76% water and sodium hydroxide for pH adjustment. Although Intralipid is the most common commercial preparation used in

documented resuscitation, successful treatment of severe toxicity has also been reported with other formulations, including Liposyn III (Hospira, Lake Forest, Illinois, U.S.A) and Medialipid (B. Braun, Melsungen, Germany), a mixture of long- and medium-chain fatty acid triglycerides. It is nonetheless whatever may be the commercial preparation, it is the fat droplets that form the lipid compartment, into which liphopilic substances are theoretically drawn, when infused into aqueous medium such as blood.

Mechanism of action of intravenous lipid emulsion

Understanding the mechanism(s) that underlie the effects of ILE infusion could lead to improved treatment of drug toxicity and possibly extend the use of lipid resuscitation to other clinical scenarios. While the exact mechanism of action of ILE in the treatment of LAST remain unclear, the proposed mechanisms are:

1. Lipid sink phenomenon

All local anaesthetics are lipid soluble and their high biding capacities to lipid emulsion explain the clinical efficacy of ILE in the treatment of LAST. The lipid sink theory is the widely accepted mechanism of action for ILE, initially coined by Weinberg in1998.In the lipid sink phenomenon rapid infusion of lipid emulsion into an aqueous medium such as blood, creates an expanding lipid phase, and resulting equilibrium drives toxic, lipophilic substances like local anaesthetics into the lipid sink and a concentration gradient develops between tissue like heart, brain and blood, which causes further movement of local anaesthetic away from heart and brain into lipid sink. Weinberg et al. supporting the lipid sink demonstrated that radiolabeled bupivacaine added in vitro to lipid treated rat plasma preferentially moves to the lipid phase with a partition coefficient of 11. Weinberg et al. also showed in subsequent experiments that lipid infusion in bupivacaine toxicity accelerates the removal of radiolabeled bupivacaine from myocardial tissue compared to controls.

2. Cardiotonic effect of lipid emulsion

Fatty acids are the preferred substrate for cadiomyocyte oxidative phosphorylation and about 80-90% of adenosine tri-phosphate (ATP) is synthesized from fatty acids, under normal aerobic conditions. Local anaesthetic toxicity interrupts the fatty acid transport and decreases the ATP production, has got negative impact on cardiomyocyte survival, potentially leads to cardioctoxicity. Lipid emulsion could theoretically increase the intracellular fatty acid content. Thus resulting increase of fatty acid content contribute to improve synthesis of ATP in the cadiomyocyte. Evidence in support of this theory was first published by Stehr et al. demonstrated that lipid emulsion reverses bupivacaine induced contractile depression at concentrations that are too low to provide a lipid sink phenomenon, suggesting a metabolic explanation for the positive effect.

3. Others mechanisms

A). Mottram et al. showed in a heterologous tissue culture expression system that free fatty acids reduced bupivacaine inhibition of sodium channel currents. They suggest that modulation of cardiac sodium channels could contribute to reversal of bupivacaine toxicity by ILE.

B). Rahman et al. showed that lipid infusion attenuates cardiac ischemia reperfusion injury. They found that post ischemic infusion of lipid in rodents, as observed in the experiments with metabolic inhibitors, reduced the likelihood of mitochondrial permeability transition and apoptosis.

C). Lipid emulsion infusion might also directly increase intramyocyte calcium levels and lead to a direct positive ionotropic effect in cardiomyocytes. Future scientific investigation will hopefully identify all the underlying consequences of lipid emulsion infusion and determine their relative contributions to reversing drug toxicities.

Intravenous lipid emulsion in the treatment of local anaesthetic toxicity

Rosenblatt et al. reported the first clinical application of lipid emulsion therapy in treating LAST. Subsequently many case reports and animal studies describe the successful use of ILE to reverse LA toxicity, with neurological symptoms, with or without cardiovascular instability. Many case reports described the use of ILE prior to the onset of cardiovascular collapse. Cardiovascular system (CVS) toxicity is at times preceded by central nervous system (CNS) symptoms and some physicians have chosen to administer ILE earlier in the progression of the toxicity syndrome. Foxall et al. described the use of ILE to treat CNS toxicity and ventricular ectopics in an effect to prevent the progression to cardiac arrest. A 13 year old girl who developed ventricular tachycardia after lumber plexus block with ropivacain, Ludot et al. administered ILE at the onset of arrhythmia and normal vitals were quickly restored.

Intravenous lipid emulsion in nonlocal anaesthetic drug toxicity

Following the reports of success in resuscitation from bupivacaine toxicity, ILE was studied in animal models of a variety of other drug overdoses, typically those expected to be seen in the emergency department. However, the first use of ILE therapy in treating nonlocal anesthetic drug toxicity was described by Sirianni et al. This publication, along with animal studies, opened the door to more widespread use of lipid emulsion for emergency treatment of toxicities caused by a range of lipophilic drugs. Notably, published examples now include toxicities related to verapamil, diltiazem, amlodipine, quetiapine and sertraline, haldoperidol, lamotrigine, olanzapine, propranolol, atenolol, nevibolol, doxepin, dosulepin, imipramine, amitriptyline, glyosphate herbicide, flecainide, venlafaxine, moxidectin, and others. It is arguable whether lipid infusion was the proximate cause of toxic reversal in all these singlet case reports. However, on balance it appears lipid might be generally effective in cases where the agent(s) are lipophilic, despite possessing disparate pharmacologic profile. This could apply to treating cases of multi-drug overdose, such as that reported by Harvey et al. These medications share similar sodium channel blocking properties with local anaesthetics and are generally quite lipophilic. Presumably, ILE exerts the same "lipid sink" effect with these lipophilic drugs thereby decreasing the active drug in the target tissue and reducing the toxicity.

Controversies

These animal modals and human case reports reveal promising results, leaving many questions unanswered. Because few animal studies have compares standard resuscitative therapies to treatment with lipid emulsion in nonlocal anaesthetic toxicities, future studies need to emphasize the inclusion of ACLS–treated controls. When patient suffers cardiac arrest or neurological symptoms from LA systemic toxicity, the offending agent is known and ILE is a proven resuscitative antidote. However, when patients present in the emergency department with cardiac arrest or neurological compromise there is a possibility of an unidentified drug overdose. Should the physician administer ILE without the knowledge of what was ingested? More studies and better delineation of the mechanism and limitations of ILE use are needed to determine best practices and clinical guidelines for integrating use of ILE with standard resuscitation during nonlocal anaesthetic overdose and other potential intoxications.

Recommendations

ILE should be used in local anaesthetic toxicity at the onset of neurological or cardiovascular symptoms, because ILE is a proven resuscitative antidote for LA toxicities and there is no other known antidote for LA toxicities resistant to standard ACLS agents. In case of non-LA lipophilic drug toxicities causing haemodynamic compromise, when standard resuscitative protocols are unsuccessful, clinicians can consider administration of ILE, even though there are no exiting protocols for administration of ILE in non-LA toxicities.

Guidelines for the use of lipid emulsion in resuscitation are available through the American Society of Regional Anesthesia (ASRA), and the Association of Anesthetists of Great Britain and Ireland (AAGBI). The American Heart Association has also included lipid emulsion infusion in its

recommendations for resuscitation in special situations specifically for LA overdose. These national protocols are available online. Though minor differences exist among these versions, there is a generally accepted approach establishing airway management as the first priority in order to assure optimal oxygenation and ventilation; then seizure suppression, preferably with a benzodiazepine; then lipid emulsion infusion to reverse signs and symptoms of toxicity. Basic life support including chest compressions must be used when clinically indicated in order to assure tissue perfusion and circulation of resuscitation drugs, including lipid.

TABLE 1 AAGBI SAFETY GUIDELINES

Management of sever local anaesthetic toxicity.

1 Recognition	Signs of sever toxicity Sudden alteration in the mental status, sever agitation or loss of consciousness, with or without tonic-clonic convulsions. Cardiovascular collapse, sinus bradycardia, conduction block, asystole ventricular tachyarrhythmias may occur. Local anesthetic (LA) toxicity may occur sometime after an initial injection.	
2 Immediate Management	Stop injecting the LA Call for help Maintain airway and, if necessary, secure it with a tracheal tube Give 100% oxygen and ensure adequate lung ventilation (hyper ventilation may help by increasing plasma pH in the presence of metabolic acidosis) Confirm or establish intravenous access Control seizure: give a benzodiazepine, thiopental or propofol in small incremental doses Assess cardiovascular status throughout Consider drawing blood for analysis, but do not delay definitive treatment to do this	
3 Treatment	IN CIRCULATORY ARREST Start cardiopulmonary resuscitation (CPR) using standard protocol Manage arrhythmias using the same Protocol, recognizing that arrhythmias may be very refractory to treatment consider the use of cardiopulmonary bypass if available	WITHOUT CIRCULATORY ARREST Use conventional therapies to treat hypotension bradycardia tachyarrhythmia
	GIVE INTRAVENOUS LIPID EMULSION (Following the regimen overleaf) Continue CPR throughout treatment with lipid emulsion Recovery from LA-induced cardiac Arrest may take >1 hour Propofol is not a suitable substitute for lipid emulsion Lidocain should not be used as an anti-arrhythmic therapy	CONSIDER INTRAVENOUS LIPID EMULSION (Following the regimen overleaf) Propofol is not a suitable substitute for lipid emulsion Lidocain should not be used as an anti-arrhythmic therapy
4 Fellow up	Arrange safe transfer to a clinical area with appropriate equipment and suitable staff until sustained recovery is achieved exclude pancreatitis by regular clinical review, including daily lipase and amylase assays for two days Report cases as follows: If lipid has been given, please report its use to international registry at www.lipidregistry.org. Details may also be posted to a www.lipidrescue.org	

IMMEDIATELY		
Give an initial intravenous bolus injection of 20% lipid emulsion 1.5mg.kg^{-1} over 1 minute	AND	Start an intravenous infusion of 20% lipid emulsion at 15ml. kg^{-1}. h^{-1}
AFTER FIVE MINUTES		
Give maximum of two repeat boluses (same dose) If: Cardiovascular stability at has not been restored or An adequate circulation deteriorates Leave 5 minutes between boluses or A maximum of three boluses can be given including the initial bolus	AND	Continue infusion at the same rate, but double the rate to 30ml.kg^{-1}. h^{-1} any time after 5 min, if: Cardiovascular stability has not been restored An adequate circulation deteriorates continue infusion until stable and adequate circulation restored or maximum dose of lipid emulsion given
Don't exceed a maximum cumulative dose 12ml.kg^{-1}		

The AAGBI recommended ILE (Intralipid) regimen following cardiac arrest from LAST involves a large initial intravenous bolus injection of 20% lipid emulsion at 1.5 ml/kg over 1 minute; followed by an infusion of 15 ml/kg/h. Cardiopulmonary resuscitation (CPR) should be continued throughout. In the absence of return of spontaneous circulation (ROSC) or deterioration after 5 minutes, two further boluses (1.5 mL/kg) may be given at 5 minute intervals. The intravenous infusion rate should also be doubled to 30 mL/kg/hr. A maximum of three boluses can be given, and a cumulative dose of 12 ml/kg should not be exceeded (Table-1). The ASRA guidelines differ in that only one additional bolus is recommended, and the infusion should continue for 10 minutes after haemodynamic stability is reached, with a maximum dose of 10 ml/kg over 30 minutes.

Additional clinical evidence may be needed before ILE can be recommended as a first-line therapy for non-LA overdoses. Local anaesthetic induced CNS and CVS disturbances are usually witnessed events in the perioperative environment. These events are quickly diagnosed and treated expediously. In settings such as emergency rooms, the offending drug must first be determined before the practitioner can assess whether lipid emulsion would enhance standard resuscitation based on relative measures of lipophilicity.

Contraindications to lipid emulsion therapy

Contraindications to lipid emulsion therapy include lipid metabolism disorders and allergy to egg; caution is required for patients with anaemia, sever liver disorder, coagulopathy and pulmonary disease. Potential complications include allergic reaction, fluid over load, impaired liver function, hyper coagulability and pancreatitis.

Potential risks of intravenous lipid emulsion

The reported rate of adverse effects for IVLE is very low. Adverse effects from lipid were isolated to one case of hyperamylasaemia, and one instance of acute lung injury the aetiology of which was likely to be multifactorial. Considering these factors, although randomized controlled trials may not be possible in this field, case reports and animal studies should not suffice as the only source of information. Controlled clinical trial involving general toxicology patients with cardiovascular or central nervous system instability, while posing significant challenges, would be of great value for evaluating the efficacy and potential side effects from lipid emulsion therapy.

The Future

It is important that the uses and methods of lipid emulsion therapy be guided by laboratory evidence and clinical experience. One important advance in achieving this goal will be the implementation of a global registry to allow collation and analysis of a comprehensive database of lipid resuscitation cases. These data will hopefully inform practitioners regarding the factors in treatment that improve or impede patient survival. Improvements may also come from modifications in lipid formulation or refinements in the regimen of administration, (e.g., by tying it to specific clinical metrics). Finally, it is possible that novel, potential applications in other clinical scenarios will be identified, such as attenuating myocardial reperfusion injury or pulmonary hypertension. In the meantime, we must do our best to educate and encourage colleagues in all specialties to adopt the accepted guidelines for treating LAST. Together, we can improve patient safety and save lives.

Conclusion

On the whole, it seems reasonable to assume that a patient in refractory cardiac arrest would suffer little harm if ILE is used as a last attempt in resuscitation. Further scientific guidance, in the form of pre- and post-ILE administration serum drug concentrations in individual cases and clinical outcome trials in the general toxicology population will assist greatly in determining the role and effectiveness of ILE therapy in non-LA poisoning.

6 NOVEL WAYS to prevent Gagging

Dr. Satyanarayana Naik (Reader)
Dr. Sidhartha S. P. Behera (PG Student)
Department of Prosthodontics,
Navodaya Dental College, Raichur

Introduction:-Gagging is a normal healthy defense mechanism or reflex, which attempts to eject unwanted irritating or toxic materials from the upper gastrointestinal tract. Gagging is most frequently experienced during impression making but is also reported during the taking of radiographs, in the placement of restorations in posterior teeth and in some individuals, the insertion of a finger for examination purposes.

Most patients who gag can be successfully treated if the cause can be determined generally; gagging has either a psychogenic or somatogenic origin.

The management of patients who gag easily can be challenge as well as a frustrating experience for dentists. Occasionally, patients feel they are beyond help and discontinue their dental treatment.

CLINICAL FEATURES:

The history of the gagging patient is usually related to a maxillary denture which causes a tickling or gagging sensation, which is felt to be "too long." Shortening of the palatal margin reduces the sensation of length, but usually does not relieve the gagging. This cycle of gagging, followed by shortening and more gagging, continues until the patient despairs and abandons all efforts to wear the denture. Although the gagging appears most commonly at the time of the initial placing of the maxillary denture.

Also interesting is the fact that despite the patient's extreme apprehension and gagging at even the slightest contact of the soft palate during even simple oral examination, this sensitivity markedly decreases or even disappears, if at the time of such examination, the patient's attention is completely diverted. Both of these features, the specificity of the stimulus and the essential role played by the patient's attention to the stimulation, lead one to the thought that perhaps gagging in the so-called "gagger" involves more than simple contact of the soft palate by a foreign object.

ETIOLOGY:

The factors that are believed to be important in the etiology of gagging include local and systemic disorders, anatomic, psychological and iatrogenic factors.

LOCAL FACTORS:

- Nasal obstruction
- Post nasal drip
- Caterrah (throat infection)
- Sinusitis
- Nasal polyps
- Congestion of the oral, nasal and pharyngeal mucosa

SYSTEMIC FACTORS:

Systemic stimuli are those arising from the use of various drugs or from excessive consumption of alcohol which stimulates the gag reflex. The recognition of the type of gagging is most important before any attempt is made to treat the patient.

ANATOMIC FACTORS:

Physical factors such as anatomic abnormalities and oropharyngeal sensitivities have been suggested as predisposing factors to gagging. In a study of denture wearers that compared the radiologic anatomy of gaggers and nongaggers, no anatomic abnormalities were observed. There were, however, fewer adaptive changes in the posture of the tongue, hyoid bone, and soft palate in the gagging group. Wright suggested that the distribution of the afferent neural pathway, particularly the vagus nerve, may be more extensive in gagging patients compared with non gagging patients.

Enlarged areas of sensory innervation cannot, however, explain why patients gag with auditory, olfactory, or visual stimuli.

PSYCHOLOGICAL FACTORS:

Eating disorders, Fear, Stress, Neuroticism, Learned response

LATROGENIC FACTORS:

Water & suction tubes, Instruments, Local anaesthesia
Radiography, Inadequate posterior palatal seal
Restricted tongue space, Loss of normal palatal contour
Poor retention, Surface finish of dentures, Over extended and under extended denture, Disharmonious occlusion, Impression making procedure

GAGGING SEVERITY INDEX (Dickinson & Fiske. 2000)

GSI Grade

I Very mild: Controlled by patient

II Mild: Control regained by patient/dentist with simple control techniques & reassurance

III Moderate: Limits treatment options

IV Severe: Some treatments impossible

V Very severe: Effects patient's behaviour and dental attendance. All treatment impossible

PROSTHETIC MEASURES TO PREVENT GAGGING:

SINGERS MARBLE TECHNIQUE:

1st appointment-5 marbles, continuously for a week

2nd appointment- motivation and assurance

3rd appointment-modeling compound impression is made.

4th appointment- lower base plate was inserted along with 3 marbles in mouth and training bead was placed on lingual aspect of base plate to maintain proper tongue position

5th appointment- Upper base plate was inserted and the use of marbles is discontinued.

6th appointment- Jaw relation records are made.

7th appointment- The completed lower denture was inserted and used in conjunction with the upper base plate. A training bead was placed on the lower denture. Next the upper denture is inserted.

CONDITIONING PROSTHESIS

A conditioning denture can be used in problem patients who are used to train the patient to gradually control gagging and adapt to reduced taste sensations.

Desensitization technique, whereby a patient is progressively supplied with a series of small to full-sized denture bases. It is useful for patients who are to become denture wearers.

A thin acrylic denture base, without teeth is fabricated and the patient is asked to wear it at home, gradually increasing the length of time the training base is worn. A suitable regime may be 5 minutes once each day, then twice each day.

After 1 week the patient is asked to increase this to10 minutes 3 times each day, then 15 minutes, 30 minutes, and 1 hour. Eventually the patient is able to tolerate the training base for most of the day Relaxation/ Distraction techniques can be used as an adjunct.

DETERMINING CORRECT VERTICAL DIMENSION:

Construct acrylic resin occlusion rims which are adjusted to an arbitrary facial height and worn by the patient for a few days. Subsequent reduction of the height of the rims is made until the gagging ceases. This record is used as a guide in the construction of the definitive prosthesis

CONTROLLING LOCAL STIMULI

Schedule appointments when the patient is well-rested, has good muscle tone and is on an empty stomach.

Rinsing the mouth with cold water prior to manipulative procedures.

Build up patient's confidence by using instruments in less sensitive areas, avoiding trigger zones.

DURING IMPRESSION MAKING

Explain the nature of procedure with patience in order to win his confidence.

An upright position with the head tilted slightly forward.

Accurately fitting impression trays with as little material as possible

Build up the posterior border of the tray with wax.

- Primary impression made with impression compound.
- Low fusing was (Kerr Impression wax) is melted and then painted onto the custom tray.
- As much muscle trimming as the patient can tolerate is done. It can be reseated an unlimited number of times till the desired impression is achieved.
- Ice cold water is used to harden the wax in the mouth as well as to retard the paroxysms of gagging.

Modified Custom Tray

- Modified maxillary custom tray.
- A custom tray without a handle was fabricated.
- Place base plate wax on the superior surface of the tray at the posterior segment in the same outline as the posterior palatal seal.
- Attach a disposable saliva ejector to the base plate wax in the midline of the tray with the tip of the saliva ejector embedded in the wax.
- Place a second batch of autopolymerizing tray acrylic resin over the wax and tip of the saliva ejector.
  The material should extend past the wax and attach to the original tray
- Remove the wax spacer
  As the impression tray is being seated in the mouth, the assistant attaches the low volume evacuation hose to the end of the saliva ejector embedded in the tray
- Remove the tray from the mouth after the impression material extruding from the posterior border of the tray has been sucked into the vacuum chamber that was formed.
- The modified maxillary custom acrylic resin tray aids in removal of excess impression material as it extrudes from the posterior border of the maxillary custom tray before it can elicit a gag reflex in the patient.

Prosthodontic strategies for treatment of patients with gag reflex:

Unable to tolerate impressions: Distraction techniques, Relaxation, Systemic desensitization, Hypnosis, Sedation.

Unable to wear denture(s): Satisfactory dentures available –'errorless' learning No satisfactory dentures –systematic desensitization, for example, training base and 'errorless' learning. Acrylic discs may be helpful prior to provision of training base.

GAGGING PREVENTION INDEX (Dickinson & Fiske, 2000)

GPI Grade

I Fully Controlled– Treatment successful

II Partially controlled– Treatment possible

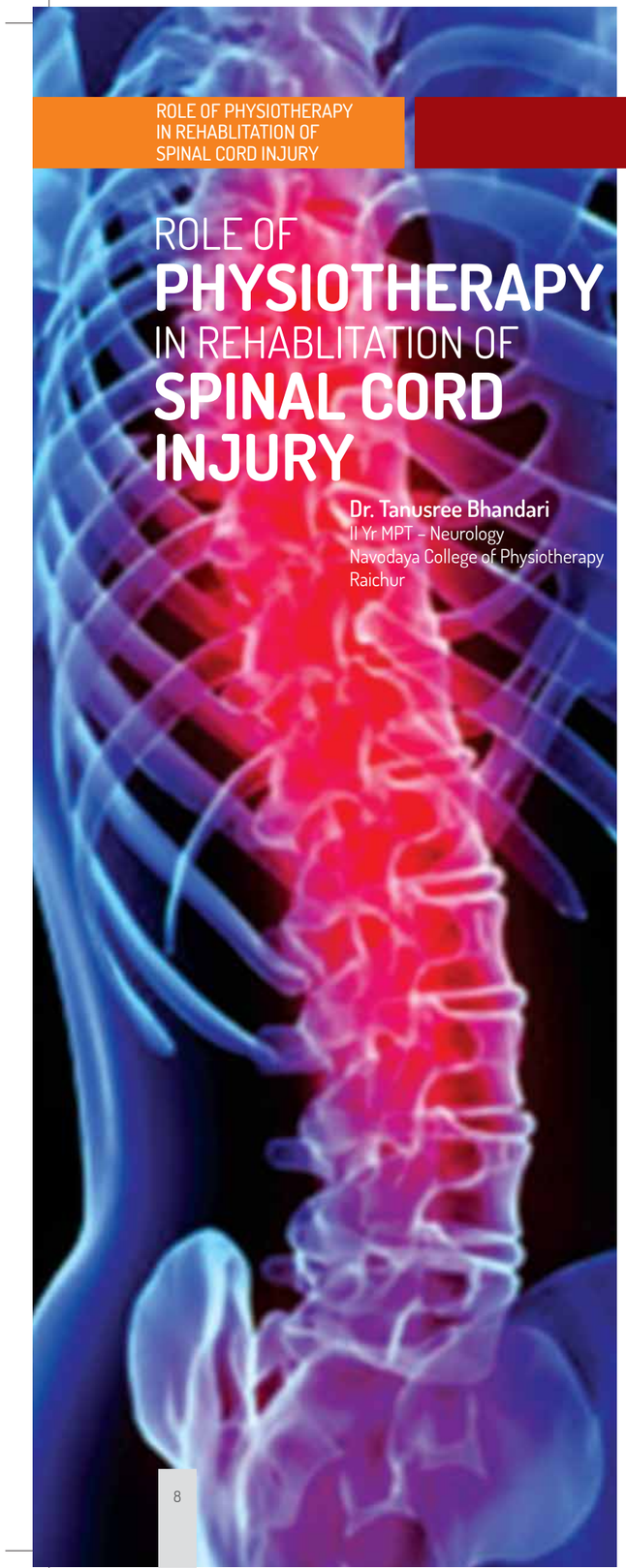
II Partially controlled– Some simple treatment possible with frequent gagging

IV Inadequately controlled– Even diagnostic procedures difficult

V No Control– No treatment possible.

CONCLUSION:

In managing patients with gag reflex it is important to take a clear history of the problem. This information will enable the clinician to gauge the severity of the problem and therefore make appropriate decisions on the ideal technique to use. Each case will need to be assessed individually as the strategy needs to be adapted to that particular patient's requirements.



A spinal cord injury (SCI) is a devastating condition that affects motor, sensory and autonomous functions, with the deficits depending on the severity of the injury, the segmental level of the lesion and the sort of nerve fibres that are damaged.

Furthermore, the neurological deficit or dysfunction can be temporary or permanent, complete or incomplete. The annual incidence of traumatic spinal cord injury (SCI) is alarmingly rising throughout the world. The estimated prevalence is between 183,000 and 230,000 cases (1–3), of which more than 80% are male.

Moreover, 55% of SCIs occur between ages 16 and 30 years, the average age at injury being 32.1 years.. The most frequent neurologic category of traumatic SCI is incomplete tetraplegia (30.2%), followed by complete paraplegia (26.1%), complete tetraplegia (23.3%), and incomplete paraplegia (19.7%).Since 1994, motor vehicle crashes have accounted for 40.7% of injuries in this country, followed by acts of violence(primarily gunshot wounds) (21.8%), falls (21.3%), and recreational activities (7.9%) .More than 88% of people who leave the hospital after treatment for SCI go to private, non institutional residences.

REHABILITATION:

The term rehabilitation refers to a process aimed at enabling persons with disabilities to achieve and maintain their optimal physical, sensory, intellectual, psychiatric and/or social functional levels, thus providing them with the tools to adopt their lives toward a higher level of independence. Rehabilitation does not focus on prolongation of survival but rather on an improvement of the patients Quality of Life(QoL).

The Rehabilitation Team

The spinal rehabilitation unit functions as a multidisciplinary team and all rehabilitation efforts are combination of input between the team members and the patient, family members of the patient and any other person significant to the patient.

The rehabilitation team consists of doctors, nurses, medical orderlies, physiotherapists, occupational therapists, physical educators, social workers, dietitians, peer counsellors and a psychologist. For some patients a speech pathologist may also become part of the rehabilitation team.

The rehabilitation team is dedicated to assisting the patient to maximize the level of independence and achieve individual goals. The rehab team commits the time and effort required to help the patient to achieve these goals.

Role of Physiotherapy in Spinal Cord Injury Rehabilitation:

Physiotherapists are health professionals who assess the neurological and musculoskeletal systems in order to design a therapy program aimed to maximize an individual's level of physical functioning.

Most of the physiotherapy team at hospital consists of both physiotherapists and physiotherapy assistant staff. Most of these staff are employed on a rotational basis, and therefore patients may encounter staff changes during the rehabilitation stay.

In the acute stage of spinal cord injury, physiotherapists assess and manage the chest care (respiratory status) and limb range of movement. This may involve teaching breathing and coughing techniques, stretches for the limbs, positioning, and active exercises for muscles under voluntary control. Once the patient is medically stable, he / she will be transferred to Rehabilitation Centre (RC).

The goals of the physiotherapy session include:

- Maintenance of a clear chest - for the prevention of chest infections and promotion of well being.
- Elevation of limb to prevent Deep Vein Thrombosis.
- Proper care to prevent pressure sore.
- Slowly progress from supine lying to sitting to control postural hypotension.
- Maintenance of limb range of movement, involving passive movements of paralysed limbs, and active exercise of non-paralysed limbs.
- Strengthening of active muscle groups.
- Achievement of functional mobility depending on the level and degree of injury. 'Functional mobility' refers to a range of skills, including;
  - control of balance and maintenance of good posture
  - getting in and out of bed
  - moving around in the bed
  - getting in and out of the shower and toilet
  - getting in and out of a car
  - getting on and off the floor if applicable
  - walking if applicable
- Training of family members and carers to assist with patient care, both throughout your rehabilitation and after discharge as appropriate.
- Referral to community services if necessary and provision of appropriate equipment.
- Hydrotherapy (exercise in the pool) may be a technique used to help to achieve the above goals.

GAIT TRAINING: Gait training is started with KAFO (Knee Ankle And Foot Orthosis) in parallel bar with therapist assistance then it progreses to walker and then to independent walking, first with aid and then with out aid.

CONCLUSION:

Physiotherapy plays a very important role in spinal cord injury rehabilitation, proper assessment/examination and determination of proper plan of care can make a disabled person independent.

CASE STUDY:

A 12 years old boy was referred to our Physiotherapy department of NMCH&RC with fracture of L1 – L2 vertebrae with paraplegic limbs. The boy was assessed and a standard rehabilitation program was formulated keeping his age factor. The physical therapy rehabilitation was vigorous with standardized protocols and the patient actively took part in the sessions. Three months of rehabilitation made the patient independent and at the end of third month the patient was able to walk independently without any support.

MARCH POWER

Mr. Mohammed Atif Niyaz
IV sem, Dept. of EEE
Navodaya Institute of Technology, Raichur

Engineers at Leeds are developing a way to capture the kinetic energy produced when soldiers march and use it to power their equipment. The new system designed to convert foot-power into battery power could help troops reduce the weight of their packs by up to 10kg. The devices will use high tech ceramics and crystals as piezoelectric transducers in order to convert mechanical stress into an electric charge.

The project will consider the optimum placement of the 'energy harvesting' devices, including the back-pack straps and around the knee to provide active support, capturing energy but also cushioning the impact when legs are bent, joints compressed or their boots strike the ground. Professor Andrew Bell, Director of the Institute for Materials Research at the University of Leeds, who is leading the one million pound research project says: "Along with the obvious issue of "green revolution" using so many batteries, it could also reduce a soldier's pack weight by around 15 per cent. And this technology could potentially have lots of applications in civil streets too."

The project has been designed to address the needs of soldiers serving in Iraq and Afghanistan. Heavy packs can severely limit a soldier's mobility and also lead to long term health problems. Ground troops typically carry electrical equipment including torches, personal radios, the Bowman communications system plus kit for electronic counter measures. The typical pack weight of an infantry soldier on a 6 hour patrol is around 75kg, with batteries making up 10kg of the load. Essential kit such as ammunition and water make up much of the rest. A similar energy harvesting idea has been used in cars for some time where braking force is stored and later used to drive the vehicle forward. However harvesting energy from people walking has always proved an advantage, but the patterns are different.

Professor Bell says his team will succeed where others have failed because they are taking a holistic approach. "By using the latest materials and electronics combined with taking into account personal differences in walking style we are confident we can make this work without adding to the burden or fatigue of the soldier wearing the device.". Another key part of the project will be adapting radio equipment to run on a reduced power budget. The new style low power radios will run on 'standby', only boosting up to full power when an important message is received or a transmission is required. The Leeds-led kinetic energy project is part of a larger program of research called the 'battery free soldier', commissioned by DSTL and EPSRC, which includes research into converting and storing and other sources of energy such as solar power and body heat.

Mr. Jeeva B
Assistant Professor
Department Of ECE
NIT, Raichur

An Introduction to 5G Technology

Even as 4G mobile telecommunication standards slowly gain in popularity, there is already talk of the fifth-generation or 5G standards that will further enhance communications on the move

5G mobile telecommunication standards stand for fifth-generation advancements made in the mobile communications field. These comprise packet switched wireless systems using orthogonal frequency division multiplexing (OFDM) with wide area coverage, high throughput at millimeter waves (10 mm to 1 mm) covering a frequency range of 30GHz, and enabling a 20 Mbps data rate to distances up to 2 km. The millimeter-wave band is the most effective solution to the recent surge in wireless internet usage. These specifications are capable of providing 'wireless world wide web' (WWWW) applications.

The WWWW allows a highly flexible network (flexible channel bandwidth between 5 and 20 MHz, optimally up to 40MHz), and dynamic ad-hoc wireless network (DAWN). This technique employs intelligent antennae (switched beam antenna and adaptive array antenna) and the flexible modulation method, which helps in obtaining bidirectional high bandwidth, i.e., transfer of a large volume of broadcasting data in gigabytes, sustaining more than 60,000 connections and providing 25 Mbps connectivity.

Users of 5G technology can download an entire film to their tablets or laptops, including 3D movies; they can download games and avail of remote medical services. With advent of 5G, piconet and bluetooth technologies will become outdated. The 5G mobile phones would be akin to tablet PCs, where you could watch TV channels at HD clarity without any interruption.

Key concepts in 5G technology

Future mobile devices equipped with 5G technology will have:

1. Wearable devices with artificial intelligence (AI)
2. Internet protocol version 6 where the IP address is assigned according to location and the connected network.
3. The ability to connect the user to different wireless access technologies, like 2.5G, 3G, 4G or 5G mobile networks, as well as Wi-Fi and WPAN(Wireless personal area network) – or even any other technology to be developed in the future. This is basically a concurrent data transfer path technique.
4. Smart radio. In order to share the same spectrum efficiently during a wireless transmission scheme, the system will adaptively find (search) unused spectrum. This dynamic radio resource management will be achieved in a distributed fashion and rely on software defined transmission.
5. High altitude stratospheric platform station (HAPS) system. This is based on beam division multiple access (BDMA) and group rely techniques.

5G hardware

Ultra wideband networks (UWB). It is already known that Wi-Fi, Wi-Max and cellular wide area communication s are long-range radio technologies. But systems like WPAN need short-range radio technology, which helps in achieving higher

AN INTRODUCTION TO 5G TECHNOLOGY

SCIENTIFIC ARTICLE

5G

bandwidths (around 4000 Mbps) but at low energy levels(UWB network) for relaying data from host devices to devices in the immediate vicinity , i.e., distances around 10 meters or so. This higher bandwidth level is almost 400 times faster than today's wireless networks. Each network will be responsible for handling user-mobility while the user terminal will make the final choice among different wireless / mobile access network providers for a given services. However, there should be different radio interfaces for each radio access technology (RAT) in the mobile terminal.

Smart antenna. These include the following:

1. Switched beam antenna. This type of antenna supports radio positioning via angle of arrival (AOA). Information is collected from nearby devices.
2. Adaptive array antenna. Such antenna promise to improve the capacity of wireless systems by providing improved safety through position-location capabilities. This technique rejects interference through spatial-altering-position location through direction-ending measurements and developing improved channel models through angle-of-arrival channel sounding measurement.
3. CDMA (code division multiple access) technique. This technique converts audio analogue input signals into digital signals (ADC) in combination with spread spectrum technology. The signal is transmitted using modulation according to some predefined code (pattern), and is demodulated using the same pattern since there can be billions of code patterns which can provide privacy and sufficient security.

5G software

1. 5G will be a single unified IP standard of different wireless networks and a seamless combination of broadband, including wireless technologies such as IEEE802.11, LAN, WAN, PAN and WWWW.
2. 5G will enable software-defined radio, packet layers, implementation of packets, encryption flexibility, etc.

Chronological evolution of mobile technologies

Although the IG system (NMT) was introduced in 1981, 2G (GSM) started to come out in 1982, and 3G (W-CDMA) / FOMA first appeared in 2001, the complete development of these standards (e.g., IMT-2000 and UMTS) took almost 10 years. It is still unclear how much time it will take to launch the standard for 5G.

5G technologies will ensure the convergence of networks, technologies, applications and services, and can serve as a flexible platform. Wireless carriers will have an opportunity to shorten their return-on-investment periods, improve operating efficiency and increase revenues. In short, this will change people's lives in numerous ways.

GENERAL ARTICLE

CEO EDITORIAL PICK

"HONORED, HUMBLED & EXCITED"

Nadella on his appointment as CEO of Microsoft, said in a Video Interview

Microsoft's new CEO is Satya Nadella. He replaced Steve Ballmer immediately, becoming only the third ever CEO of Microsoft. He joined Microsoft 22 years ago and today he has risen to lead the giant Microsoft.

Nadella, 46, was born in Hyderabad-India, where he played a lot of cricket. Raised with Indian Values, he brings a relentless drive for innovation and a spirit of collaboration to his new role.

He obtained a bachelor's degree in electrical engineering in India, and then a master's degrees in computer science from the University of Wisconsin and business administration from the University of Chicago. He started off at Sun Microsystems in the 1990s, and then moved to Microsoft in 1992 to help develop Windows NT. Since then, he's worked within a number of Microsoft departments, mostly on the server and enterprise side of things.

Speaking personally, though, Nadella's heart seems to be in the right place. In his first mail to Microsoft employees, was a touching and inspiring to all the young geeks.

The excerpt from his mail

Today is a very humbling day for me. It reminds me of my very first day at Microsoft, 22 years ago. Like you, I had a choice about where to come to work. I came here because I believed Microsoft was the best company in the world. I saw then how clearly we empower people to do magical things with our creations and ultimately make the world a better place.

It is an incredible honor for me to lead and serve this great company of ours. Steve Balmer and Bill Gates have taken it from an idea to one of the greatest and most universally admired companies in the world. I've been fortunate to work closely with both Bill and Steve in my different roles at Microsoft,

While we have seen great success, we are hungry to do more. Our industry does not respect tradition — it only respects innovation. This is a critical time for the industry and for Microsoft. Make no mistake, we are headed for greater places — as technology evolves and we evolve with and ahead of it. Our job is to ensure that Microsoft thrives in a mobile and cloud-first world.

As we start a new phase of our journey together, I wanted to share some background on myself and what inspires and motivates me.

Who am I?

I am 46. I've been married for 22 years and we have 3 kids. And like anyone else, a lot of what I do and how I think has been shaped by my family and my overall life experiences. Many who know me say I am also defined by my curiosity and thirst for learning. I buy more books than I can finish. I sign up for more online courses than I can complete. I fundamentally believe that if you are not learning new things, you stop doing great and useful things. So family, curiosity and hunger for knowledge all define me.

Why am I here?

I am here for the same reason I think most people join Microsoft — to change the world through technology that empowers people to do amazing things. I know it can sound hyperbolic — and yet it's true. We have done it, we're doing it today, and we are the team that will do it again.

I believe over the next decade computing will become even more ubiquitous and intelligence will become ambient. The co evolution of software and new hardware form factors will intermediate and digitize — many of the things we do and experience in business, life and our world.

This is a software-powered world.

It will better connect us to our friends and families and help us see, express, and share our world in ways never before possible. It will enable businesses to engage customers in more meaningful ways. I am here because we have unparalleled capability to make an impact.

Why are we here?

In our early history, our mission was about the PC on every desk and home, a goal we have mostly achieved in the developed world. Today we're focused on a broader range of devices.

As we look forward, we must zero in on what Microsoft can uniquely contribute to the world. The opportunity ahead will require us to reimagine a lot of what we have done in the past for a mobile and cloud-first world, and do new things.

We are the only ones who can harness the power of software and deliver it through devices and services that truly empower every individual and every organization. We are the only company with history and continued focus in building platforms and ecosystems that create broad opportunity.

Qi Lu captured it well in a recent meeting when he said that Microsoft uniquely empowers people to "do more." This doesn't mean that we need to do more things, but that the work we do empowers the world to do more of what they care about — get stuff done, have fun, communicate and accomplish great things.

What do we do next?

To paraphrase a quote from Oscar Wilde — we need to believe in the impossible and remove the improbable.

We need to prioritize innovation that is centered on our core value of empowering users and organizations to "do more." We have picked a set of high-value activities as part of our One Microsoft strategy. And with every service and device launch going forward we need to bring more innovation to bear around these scenarios.

Next, every one of us needs to do our best work, lead and help drive cultural change. We sometimes underestimate what we each can do to make things happen and overestimate what others need to do to move us forward. We must change this.

Finally, I truly believe that each of us must find meaning in our work. The best work happens when you know that it's not just work, but something that will improve other people's lives. This is the opportunity that drives each of us at this company.

Many companies aspire to change the world. But very few have all the elements required: talent, resources, and perseverance. Microsoft has proven that it has all three in abundance. And as the new CEO, I can't ask for a better foundation.

Let's build on this foundation together.

Satya

"During this time of transformation, there is no better person to lead Microsoft than Satya Nadella," said Bill Gates in a statement. "Satya is a proven leader with hard-core engineering skills, business vision and the ability to bring people together. His vision for how technology will be used and experienced around the world is exactly what Microsoft needs as the company enters its next chapter of expanded product innovation and growth."

Indeed it was great proud moment to all Indian citizens showing, we Indian brains run the technology world across the globe.

Mr. Santosh Kumar
IV sem, Dept. of EEE
NIT-Raichur.

GO ONLINE TO GO GREEN

Over the past few years, the internet platform has been conquering almost every sphere of day-to-day activities. This most amazing fact about this transition from the traditional methodology to internet-based era has been its quick adoption which is rated amongst the fastest adopted revolutions in the history of transformation. Apart from the benefits of cost, time and effort savings, one of the major reasons for the promotion of online era is its contribution to the environment. The internet trend extends its contribution to the environment in a number of ways.

Digital Documents:

Paper is consumed for a number of purposes including study material for students, paperwork in offices for maintenance of records, pamphlets of business enterprises, various registration forms and many more. With the online revolution, the papered approach has changed to one that is governed by digital documents. Practically, the 'online' era has made a massive contribution to saving paper and hence, saving the trees and plants all around us- saving the green around us.

Fuel Efficiency and Pollution Control:

Online banking, deposit of utility application and bill payments have brought about great comfort in the lives of people as they can perform all these tasks at their free will. Earlier, people had to drive to various places to establish these tasks. This resulted in traffic and lot of fuel consumption along with waste of time and effort. Having all these facilities on one's fingertips saves the exploitation of the limited resources of the Earth. Besides, this process also saves harmful emissions from being released into the atmosphere and thereby helps in keeping the environment clean and green.

Hosted infrastructure:

Most of the corporate enterprises in today's world are based on IT. With loads of data to store and large number of applications for seamlessly managing a number of operations, the need for setting up massive IT infrastructure seems obvious. However, cloud computing and the use of internet have helped organizations achieve all the lavish benefits of premise-based system without having to set up any hardware. Third-party hosting providers host client data and applications over the cloud generated on their servers located within massive data

centers. Since there is no hardware, there is no wear and tear related and hence, no waste is being generated, even if generated, its is to a very minimum level.

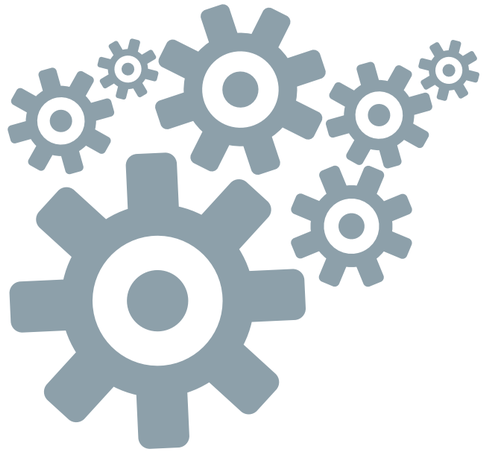
Online communication:

The POTS lines prevalent in the olden times have now almost disappeared from corporate sector usage. The introduction of hosted communication has brought about a major difference in the world of telephony. With hosted private branch exchange systems, calls can be made online with the use of any mobile media supporting internet connection. This introduces mobility thereby providing a competitive edge to the mobile networks and the cost of making calls is drastically less. This communication is considered as a boon since there is no hardware setup or connection of wires that is required. Users can simply login to their accounts and start making the calls online.

Energy Savings:

With major part of IT infrastructure being hosted, organizations save considerable amount of electric power that would otherwise be required for running the same. Most of the sensitive equipment requires comfortable environment to work in. This environment is generally maintained with HVAC systems that consume considerable electric power. Utilizing the online cloud for corporate purposes contributes a lot to the environment through effective energy savings.

'Online' is the new green revolution. Internet and the exceeding technological advancements have together brought about an unimaginable era of enhanced operational efficiency. With this massive pace of development and adoption, days are not far when internet will become indispensable for a major part of the corporate and domestic activities. Environment safety will then inevitably come along.



RECENT TRENDS IN MECHANICAL ENGINEERING

Mr. Manjunath B
Asst. Prof
Department of Mechanical Engineering
Navodaya Institute of Technology, Raichur

Looking towards the new area in technology MECHANICAL ENGINEERING offers addition of new subjects and new versions of old subjects. At present, Design, Analysis and Piping fall under the part of new subjects. Also Nanotechnology, Clean Technology and many other fields are being introduced in scientific and industrial area. Design has made an entry a decade back into the core part of mechanical engineering and got itself manipulated in different forms, for ex., Computer Aided Design (CAD) is one of the most familiar Technology these days. Solid modeling using CAD tool interface made concepts easier to visualize, as well as analyzing functioning of mechanisms in a better way. The designing helps in improving:

- Accelerate new product development
- Switch to alternate or cheaper material
- Reduce Prototyping costs
- Improve product quality and performance
- Enhance reliability

Not only design, but analysis also plays an important role in finding and solving problems of different working conditions & materials being used for different industrial application. Mechanical Design services offer conceptual engineering/ Product design services to serve various parameters. With the help of advance 3D AutoCAD tools such as solid Works, 3D Max, CATIA, ProE, ANSYS, Hypermesh you can realize benefits of better product design. Beginning with preliminary design based upon the factors to prepare an integrated 3D model of the entire product.

3D Cad modeling apparently simplifies the whole quality check process and reduces the occurrence of design errors that remained unnoticed until they reach the shop or production floor. The field of Mechanical engineering covers the design and analysis of all kinds of systems and technologies with mechanical components, and has applications in energy production, environmental systems, materials, composites, transportation, robotics, manufacturing, machine design, and many more areas. Several key emerging technologies fall fundamentally within the domain of mechanical engineering expertise. Among these technologies are Micro and Nano scale fabrication processes, energy, and the environment. Modern mechanical engineers can navigate virtual design environments and are adept in computing so they play a significant role in the future development of information technology.

The nanotechnology is a huge development obtained in the field of science and technology. The field of nano-fabrics is incredibly large with many different flavors and forms. One type of nano-fabric is formed by applying commercially available nano-engineered finishing treatments to ordinary textiles and the variety is wide, from carpet and clothing to medical fabrics and mosquito netting. Looking forward Mechanical Engineering developments don't limited to these areas only, rather it has gone far away with renewable sources of energy, like solar energy. Concurrent design provides Solar Energy Engineering, Design and Build Services. Solar Energy Product Development expertise spans Semiconductor Process Tools through Solar Product Manufacturing and solar Systems Integration. Solar Energy Process Tools may include experience with front end tools, deposition tools and back end packaging equipment. In forthcoming years, solar technology will see a dramatic increase in demand and usage. The transportation of sensitive photovoltaic components, solar cells, and solar panels can only be successfully conducted with specialized technologies.Development in Mechanical engineering don't stop here, researches are going on various fields including new and old. Old techniques are improved to new and modifying technology.

Acoustics and Noise Control

Bioengineering: Combustion

Combustion research concerns the physics of fuel sprays and droplets and their combustion, computational combustion modeling, and the formation and evaluation of super-critical sprays.

Design

Fluid Mechanics and Propulsion: Heat Transfer

Heat transfer research focuses on understanding, measuring and simulating thermal phenomena, exploiting these phenomena to design and manufacture efficient devices and systems and limiting the deleterious effects of high or low temperatures on system performance.

Heating, Ventilation, Air Conditioning and Refrigeration

Manufacturing and Materials Processing

Current MMP research involves laser-based manufacturing, high speed machining and grinding processes, and micromechanics of materials, intelligent manufacturing, and thermal management of microelectronic components.

Career options for aspiring mechanical engineers:

Practically every company that designs and produces a product employs a mechanical engineer. But mechanical engineers can also be found in research labs, the military, government, and in other professions such as medicine, law or teaching. Most mechanical engineering jobs require design experience. When a need comes about for a new or improved product, companies call upon mechanical engineers to do the job. Engineers have to push beyond the limits of their previous work and use innovative technology to meet project requirements successfully.

A second major area of employment for mechanical engineers is manufacturing. Manufacturing jobs cover nearly everything involved in developing a product, from selecting the appropriate materials to choosing the correct machinery to manufacture the product. Most mechanical engineers in this industry work for equipment manufacturers, aerospace companies, utilities, material processing plants, transportation companies, and petroleum companies. They also work with small firms, consulting practices, universities, and government research labs.

Specific assignments might involve research and development, design of equipment or systems, supervision of production, plant engineering, administration, sales engineering, the testing and evaluation of machines and entire plants. Some mechanical engineering titles and their functions include:

• **Automotive engineer:** Mechanical engineers design many car parts for the automobile industry. As an automotive engineer, you could solve transportation and safety problems by creating better and more efficient engines or by developing improved safety features

• **Biomedical engineer:** Mechanical engineers work with a variety of medical professionals to design mobility aids, prosthetics, and artificial organs.

• **Consulting:** Once mechanical engineers have gained significant on-the-job experience and developed a high level of expertise, they might choose to work for themselves as consultants or independent contractors. Here they can work on projects of their choosing for clients they respect. The consulting field offers opportunities in large and small engineering service firms and in private practice.

• **Heating, ventilation, and air conditioning (HVAC) engineer:** In this field, engineers design refrigeration systems for making frozen foods, or air-conditioning and heating systems for businesses and industrial buildings, residential homes, autos, hospitals, and schools.

• **Nuclear engineer:** The design of nuclear power plants requires the services of a mechanical engineer. The engineer must understand the fundamentals of nuclear design, know how to operate the plant efficiently, and evaluate the environmental factors associated with nuclear plants.

• **Robotics engineer:** A mechanical engineer may design machines that build other machines. For instance, a robotics engineer may be involved with creating the devices that are used in assembling automobiles. Engineers are concerned with the robot's structure, its joint mechanisms, bearings, and heat transfer characteristics.

• **Teaching:** A desire to help mold the next generation of engineers motivates some mechanical engineers to move into academic careers. Engineers in colleges oversee research activities, manage laboratories, and mentor students. They also write and publish books and technical papers about mechanical engineering.

Mechanical engineers can find employment at virtually any institute where innovation takes place. They commonly work in the government, research, industry, military, teaching, management or consulting sectors.The government agencies that typically hire mechanical engineers include the Navy, Patent and Trademark Office, International Trade Commission, Army Corps of Engineers, Department of Energy and even in the Postal Service.

From developing toys to prosthetic legs, the types of projects you can be a part of are as vast as your imagination. With a degree in mechanical engineering, diversity is the key. You can wind up working in a laboratory or an outdoor construction site. Remember, nearly every mechanical device was created by a mechanical engineer so the possibilities for employment are virtually endless.

VAN-WYK GRUMBACH SYNDROME: An unusual clinical case presentation

Dept. of Pediatrics
Navodaya Medical College Hospital & Research Centre, Raichur

Van Wyk-Grumbach syndrome (VWGS) is rare disease characterized by juvenile prolonged hypothyroidism, delayed bone age, isosexual precocious puberty and multicystic enlarged ovaries with reversal to a prepubertal state following thyroid hormone replacement therapy.

A girl aged 7 years presented with dull aching pain in breast since three days and vaginal bleeding reported to Department of Pediatrics, Navodaya Medical College. She was short in stature, puffiness of face since 6 months. The girl has pain in the abdominal region with vomiting since 3 months.

She was born of no consanguineous marriage at full-term, normal vaginal delivery, and was first in the birth order. Her birth weight was 2.25 kg and she had normal milestones of development.Her appetite was normal and she did not have excessive somnolence, cold intolerance, or constipation. Her scholastic performance continued to be average.

Her height was 114 cm (<3 rd centile, target height of 165.2 cm) and weight was 25 kg. Her pulse rate was 68/min and blood pressure 120/90 mmHg. She had pallor, dry scaly skin, and depressed nasal bridge. There was no goiter. Her IQ was 76 (low average) with a verbal IQ of 73 and performance IQ of 78. Visual acuity and fields were normal.

She had normocytic normochromic anemia with a hemoglobin level of 9.8 g/dl (normal 12-14 g/dl). Hormonal investigations revealed TSH > 100 µIU/ml (0.7- 4.8), FSH 5.9 mIU/ml (0.3-2.0), LH < 0.01 mIU/ml (0.1-6.0), Estradiol 24.2 pg/ml (>20 is puberty) and Anti TPO - 38.7 IU/ml (normal <34IU/ml).

Her radiological investigations revealed a bone age of 4 years. Ultrasonography of the pelvis showed enlarged multicystic

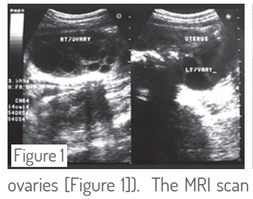


Figure 1

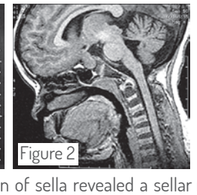


Figure 2

ovaries [Figure 1]). The MRI scan of sella revealed a sellar mass with suprasellar extensions of 1.7 X 1.6 X 1.2 cm size [Figure 2].

Discussion

The presence of precocious puberty and enlarged ovaries suggested an estrogen-secreting ovarian tumor in the present case. But the finding of a delayed bone age in the patient with precocious puberty narrowed the differential diagnosis to long-standing hypothyroidism. High circulating levels of TSH along with prepubertal LH levels suggested Van Wyk-Grumbach syndrome.

In girls, the condition usually presents with vaginal bleeding, and uncommonly with breast development or galactorrhea. Despite an early stage of puberty, there is lack of pubic hair. Boys have macroorchidism without significant signs of virilization. The salient diagnostic features include long-standing hypothyroidism, high levels of TSH,isosexual precocity with lack of public and axillary hair growth, and delayed bone age. The precocious puberty is always isosexual and incomplete in patients of VWGS.

The most common cause of hypothyroidism in these patients is autoimmune thyroditis. Sella turcica enlargement may be seen at times and it has been attributed to thyrotroph hyperplasia. Thus, VWGS can be diagnosed nonoperatively, by the recognition of the salient clinical features and appropriate confirmatory endocrine laboratory tests.

The exact mechanism of the development of precocious puberty in VWGS remains speculative. Van Wyk and Grumbach postulated a lack of specificity in the feedback mechanism leading to an overproduction of multiple hormones. The serum gonadotropin levels in these patients are relatively low for their degree of gonadal stimulation. Immunological activity is present but these gonadotropins are biologically inactive in an in vitro assay. Thus, elevated gonadotropins alone cannot completely explain the gonadal stimulation seen in severe juvenile hypothyroidism.

TSH levels are consistently elevated in such patients and the tendency to manifest sexual precocity may be directly related to the severity of TSH elevation. High circulating levels of TSH acting directly on FSH receptors may be the actual mediator of precocity. In females, the multicystic ovaries may result from elevated levels of circulating gonadotropins acting on it. It is also possible that increased sensitivity of the ovaries to the circulating gonadotropins could result from the hypothyroid state directly or via increased prolactin. However, ovarian enlargement may be secondary to a myxedematous infiltration. Our patient also had multicystic ovaries with normal to low gonadotropins, suggesting that the increased sensitivity of ovaries to gonadotropins may be responsible for it.

In patients with isosexual pseudo precocity, the presence of palpable adnexal mass would suggest ovarian tumors but in all such cases, the bone age is advanced. Hence, the presence of a delayed bone age in patients with precocious puberty is an important clue for the diagnosis of VWGS. Although there is little consensus regarding the precise etiopathogenesis of the disorder, the treatment approach is clear. All symptoms subside with thyroxine replacement, the endocrine abnormalities resolve, and even the ovarian cysts decrease in size or altogether disappear, as also in the present case during follow-up.

Clinically this syndrome is a diagnostic challenge because hypothyroidism usually leads to pubertal and growth delay, whereas in case of VWGS hypothyroidism it leads to growth delay and precocious puberty.

Figure 1: USG showing enlarged and multicystic ovaries

Figure 2: MRI of the sella showing diffusely enlarged pituitary gland

AN UNUSUAL FOREIGN BODY IN ADULT LARYNX

Dr. SHRIKRISHNA B H
Associate Professor,
Department of ENT and
Head-Neck Surgery,
Navodaya Medical College
Hospital and Research Centre, Raichur,

Dr. SANJAY G
Senior Resident,
Department of ENT and
Head-Neck Surgery,
Navodaya Medical College
Hospital and Research Centre, Raichur,

Dr. DEEKSHITH RAJMOHAN
Post graduate Resident
Department of ENT and
Head-Neck Surgery,
Navodaya Medical College
Hospital and Research Centre, Raichur,

INTRODUCTION:

The space between the vocal cords is 'rima glottidis' and mucosa covering them is glottis1. Glottis is the area of opening to lower respiratory passages. It is the narrowest part of cavity of larynx2. Impaction of foreign bodies in larynx is more likely to occur in children than in adults. Even though it is not unusual to find a foreign-body impacted in the larynx in an adult patient, it is almost impossible to see a patient who presents 2 days after aspiration of a foreign body with difficulty in breathing and change in quality of voice.

CASE REPORT:

A 60 year old female came to our Out Patient Department with a history of stridor and pain in the throat and weak voice. She is a shepherd by occupation. She was grazing her goats in the field and slept under a tree to take rest in the afternoon. The seeds of the tree were falling on her saree due to the wind. She had an accidental inhalation of a seed while she tried to cover her face with her saree while sleeping. This was followed by violent coughing, sudden change in her voice and pain in the throat. She started feeling difficulty in breathing. She consulted a local doctor at her village who referred her to an ENT surgeon. She tolerated the symptoms for 2 days as she was all alone at home and came to our OPD with her daughter who had come to meet her. On examination, she was alert, conscious and co-operative. There was no cyanosis. Mild stridor was present and voice was hoarse. Examination of the larynx using a 70^0 Hopkins telescope in the OPD revealed the presence of a black thorny seed in the glottis lodged in an antero posterior direction with oedema of the vocal folds. She was admitted immediately and patient was explained about the need for an emergency tracheostomy prior to any attempt of removal of foreign body.

After taking written and informed consent, direct laryngoscopy was done to confirm the presence of foreign body in the larynx. Emergency tracheostomy was done under local anesthesia and the airway was secured. Tracheal intubation was done through the tracheostome and general anesthesia administered (Fig 1). Microlaryngoscopy was done with 400 mm objective lens and chest fixation. A thorny black seed was seen impacted between the true vocal cords (Fig 2). The foreign body was removed using a foreign body grasping forceps. The foreign body was having thorny projections (Fig 3), measuring around 1cm in diameter (Fig 4). On careful inspection, one of the thorns of the seed was found to be still impregnated in the right true vocal cord and was removed carefully. The bilateral true vocal cords were lacerated by the thorns (Fig 5). Endotracheal tube was extubated and a cuffed portex tracheostomy tube was placed. Patient was administered intravenous antibiotics and steroids and intra muscular analgesics for 3 days post operatively.

Tracheostomy tube was removed on post-operative day 4 and neck strapping done (Fig 6). There was no respiratory distress or stridor after removal of tracheostomy tube. Patient was observed for one day and discharged on post-operative day 5 with oral antibiotics and analgesics. Patient had come for weekly follow ups. Post-operative period was uneventful and the tracheostome closed spontaneously by the end of 4th week (Fig 7). The vocal cord injuries had healed by end of 4th week.

DISCUSSION:

Laryngeal foreign bodies present a rare, dramatic circumstance with prevalence rates ranging from 2% to 11% in cases where the airways are involved. Children are affected more frequently, especially between 6 months and 3 years of age[3]. A foreign body is defined as an object or a substance foreign to the location where it is found. A variety of foreign-bodies have been reported in literature ranging from nuts, seeds, teeth, erasers, pencils, safety-pins, tack pins, whistles, tracheotomy tubes 4. It is prudent to diagnose aero-digestive foreign bodies as early as possible to minimize potential life-threatening complications in particular glottic foreign body [4]. Subglottic foreign-bodies are however associated with high mortality due to total airway obstruction and hypoxia etc[5,6].

However, in many cases it is not easy to make the diagnosis as classical symptoms of choking, wheezing, and decreased breath sounds are absent[4,7]. The delay in diagnosis is attributable to patients' behaviour or circumstances where aspiration was unwitnessed [8]. Once the anaesthesia along with muscle relaxants is given, foreign body might fall down to subglottis or trachea which is a more difficult area to deal with [4]. Regardless of history, physical examination and X-ray studies, direct laryngoscopy is the single means of management to rule out or confirm the diagnosis of a laryngeal foreign body, if suspected[9].

A neglected foreign body in the larynx causes laryngeal oedema. Glottic oedema causes sub mucosal infiltration of serous fluid and produces a soft and firm swelling. It can be translucent if the oedema is due to transudate as in hypersensitivity reaction or opaque if due to inflammatory exudate. Fully developed oedema converts the area to a thick cushion which partly blocks the entrance of larynx[10]. Vocal cords and subglottic area may also participate in oedema.[1,10]. Acute glottic oedema can occur from allergy to the foreign body or local inflammation[12]. In local inflammation mucosa may swell due to effusion of fluid.11 Local inflammation can be caused by streptococcus or staphylococcus[10,12]. Though more frequent in children, epiglottitis may also cause sudden deaths in adults [13].

Majority of inhaled foreign bodies in adults lodge in right bronchial tree because of its width which is more than the left bronchus and the interbronchial septum which projects to the left [14]. But in the young children, there is equal distribution of foreign bodies between right and left bronchi because the above mentioned anatomical differences are less pronounced[15]. A minority of foreign bodies (< 4%) impact in the larynx [16], that too if they are too large to pass through or if they are of an irregular shape or have sharp edges which can catch on the laryngeal mucosa. the offenders being egg shells, glass fragments or plastics[14] . In our case we had a thorny seed which was impacted in the larynx due to its sharp edges. This prevented it from slipping into lower airway in spite of delay in seeking medical attention.

Majority of patients of inhaled foreign bodies give a definite history of choking, followed by paroxysmal coughing [17]. After the initial paroxysm of cough, the tracheobronchial mucosa becomes tolerant of foreign body and the cough ceases, delaying the diagnosis [17,18]. Other common features are wheeze, predominantly unilateral, unexplained persistent fever, persistent or recurrent lobar pneumonia [14]. Acute respiratory distress is uncommon but most alarming presentation seen mainly in laryngeal foreign body [17], which may also manifest as pain in root of neck or over the larynx [14]. But the most common difficulty encountered in laryngeal foreign body is the delay in diagnosis [19]. In our case, there was no delay in diagnosis from our side. However, patient sought medical attention only after two days of the incident as she was all alone at home. In spite of the delay to seek medical attention, she did not end up in catastrophe as the spaces between the thorns of the seed contributed to the airway and prevented from complete choking.

In the removal of foreign bodies, there is no substitute for open rigid endoscopes. Other techniques like pounding the throat and Heimlich's procedures are dangerous, because they may cause further impaction and possible total obstruction not present prior to these attempts [15]. We did not try Heimlich's manoeuvre in our patient as we felt it may risk her life.

Laryngeal or large tracheal foreign bodies are dealt as direct emergencies with facilities for emergency tracheostomy; these may have to be delivered through the tracheostoma [20]. In our case, we did not attempt removal of the foreign body through the tracheostoma as it had multiple sharp thorns. We planned for a complete removal of the foreign body with all its thorns intact under direct vision. Laryngeal foreign bodies are usually removed by direct laryngoscopy [15], without any problem, in majority of cases but in few cases during the induction of anaesthesia, foreign body may cause total respiratory obstruction and may warrant emergency tracheostomy [21]. In our case patient had to undergo emergency tracheostomy as she was in stridor. Emergency tracheostomy and general anaesthesia through the tracheostome gave us space and time for microlaryngoscopy and complete removal of the foreign body from the larynx.

The foreign body in this case was unusual in that it had thorny projections all around which facilitated its impaction in the glottis and prevented it from descending into lower airway. Secondly, the spaces between the thorny projections contributed to some airway thus preventing her from getting completely choked even though the foreign body was totally impacted in the larynx. That explains how the patient tolerated the symptoms for 2 days. Thirdly, any hurried removal would have resulted in incomplete removal of the thorns which prompted us to do tracheostomy first before proceeding for microlaryngoscopic removal.

Fig 1

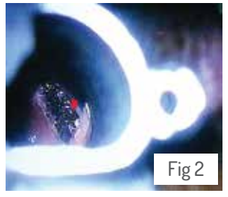


Fig 2

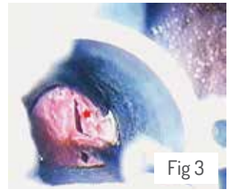


Fig 3

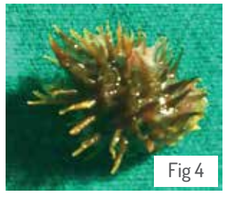


Fig 4

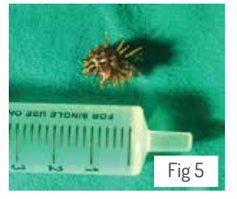


Fig 5

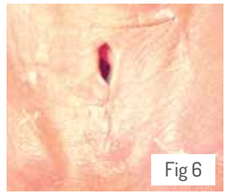


Fig 6


Fig 7

Fig 1. Tracheostome with endotracheal tube in SITU
Fig 2: Microlaryngoscopic view of glottis showing foreign body in the glottis (arrow)
Fig 3: Microlaryngoscopic view of glottis after removal of foreign body showing lacerated vocal cord mucosa (arrow).
Fig 4: Foreign body (seed with thorny projections)
Fig 5: Dimensions of the foreign body measuring about 1cm in diameter
Fig 6: Tracheostomy site on post operative day 6
Fig 7: Tracheostomy site on post operative day 27

CONCLUSION:

Any sudden onset of pulmonary or airway tract sign or symptom should raise the suspicion of inhaled foreign body and warrants an endoscopy. Foreign body aspiration can result in a spectrum of presentations, from minimal symptoms, often unobserved, to respiratory compromise, failure, and even death. Prompt diagnosis and removal of the foreign body is often life saving.

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AGGRESSIVE PYOGENIC GRANULOMA

Dr. ANILA KONERU
Associate Professor,
Department of Oral Pathology,
Navodaya Dental College
and Hospital, Raichur,

Co-Author
Dr. Surekha R
Reader,
Department of Oral Pathology,
Navodaya Dental College
and Hospital, Raichur,

INTRODUCTION

The pyogenic granuloma (PG) is an exuberant tissue response to local irritation or trauma; it is not a neoplasm. The young lesions are highly vascular, red or reddish purple, often elevated and ulcerated, and bleed easily. Older lesions tend to be more collagenized and pink in appearance. Some believe that the older PG will develop into a peripheral ossifying fibroma or peripheral fibroma over time through fibrous maturation and ossification.

The PG and pregnancy tumor have an identical histologic appearance and the pregnancy tumor is considered a PG occurring in pregnant females. The PG can often exhibit rapid growth, appearing on the gingiva in 75% of reported cases with a female predilection. The histological appearance is characterized by vast numbers of endothelium lined vascular spaces infiltrated with lymphocytes, plasma cells and neutrophils. There is extensive fibroblastic proliferation with a diffuse, often dense chronic inflammatory infiltrate. The lesion is covered by a thin, often ulcerated layer of stratified squamous epithelium. Despite the name, no pyogenic material or pus is found in the lesion.

Treatment involves complete excision of the lesion down to the periosteum or periodontal ligament and removal of local irritants. This can be difficult due to the hemorrhagic nature of the lesion and may be better accomplished through laser eradication than the scalpel.

In this paper, we present a case of pyogenic granuloma with large size and bone loss occurring on the posterior mandibular gingiva in a 44 yr old female patient.

CASE REPORT

This 44 year old female patient presented with a rapidly growing lesion on the buccal gingiva of the lower posterior teeth causing an inability to achieve plaque control and eat properly. The growth started 2 months ago, as a small sessile painless growth progressively increased to attain the size of 1.5×3 cm at the time of presentation. The growth was associated with profuse bleeding on provocation and there was hindrance in mastication. There was no contributory past medical history. Examination of the head and neck revealed no cervical and submandibular lymph node enlargement.

Intraoral examination revealed full complement of teeth. However there was a pedunculated growth arising from the buccal gingiva in relation to 47 and 48 on the buccal aspect extending distal to 48 and to the occlusal surface also (Figure 1). Palpatory findings revealed swelling measuring 1.5×3 cm which was soft to firm in consistency. There was also mobility seen in relation to 47 and 48. Intra oral periapical radiograph in relation to 47 and 48 revealed loss of alveolar crestal bone interproximally. With the above said findings, provisional diagnosis of pyogenic granuloma on the buccal gingival in relation to 46 was established. Peripheral giant cell granuloma and peripheral fibroma were considered in the differential diagnosis.

Since the growth was causing hindrance in mastication, an excisional biopsy (Figure 2) was carried out under antibiotic coverage of amoxicillin 500 mg 3 times daily for 5 days.

Histopathology:

Gross: showed soft tissue measuring 1.5x1.5cm, yellowish in color and soft in consistency

(Figure 2)

Microscopy: Showed a band of connective tissue made up of fibrovascular reactive tissue consisting of abundant young proliferating blood capillaries, filled with red blood cells, numerous plump active fibroblasts densely infiltrated with both acute and chronic inflammatory cells (Figure 3 and 4). A histopathological diagnosis of pyogenic granuloma was given. With regular follow up at one monthly interval showed no evidence of recurrence.

Discussion

Originally, pyogenic granulomas were believed to be botryomycotic infection which was transmitted from horse to man. Subsequently it was proposed that these lesions are caused due to some pyogenic bacteria like streptococci and staphylococci. However there is no evidence of any infectious organisms isolated from the lesions confirming the unlikely relation to any infection and hence the name is a misnomer.

It is now largely agreed that pyogenic granuloma arises as a result of various stimuli such as low grade chronic irritation, trauma, hormonal imbalances or certain kinds of drugs. The tissues react in a characteristic manner resulting in overzealous proliferation of a vascular type of connective tissue. The growth rate of tumor depends upon the proliferative capability and the rate of cell death. Nakamura (2000) described cells in pyogenic granulomas have low apoptosis influenced by the anti apoptotic proteins like bcl-2 family proteins (Nakamura, 2000). Thus even pyogenic granulomas can behave aggressively by causing bone loss and leading to tooth mobility.

Approximately one-third of the lesions develop after trauma particularly those occurring on the extragingival sites. Trauma from adjacent sharp teeth, ill fitting dentures, accidental biting and tongue piercings are most common. Poor oral hygiene may be another precipitating factor. Additionally some drugs, like cyclosporine may be involved in the genesis of the pyogenic granulomas. In a study done by Skinner et al. (1973) described that pyogenic granulomas are more common in females in the third decade of life with a predilection of 3:2 over males possibly because of vascular effect of female hormones.

Our case appears to be one of the few cases of large sized pyogenic granuloma behaving aggressively by causing bone loss and tooth mobility in a 44 year old female patient.

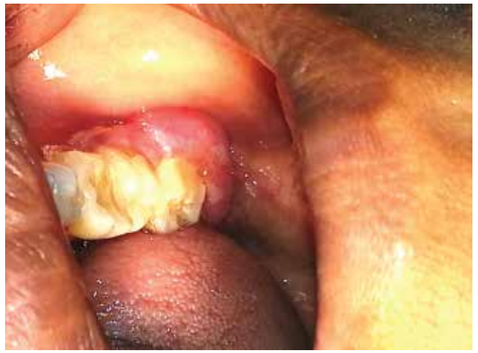
Figure legends:

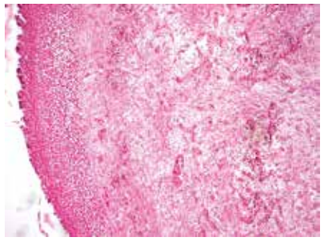
Figure 1: Intraoral examination revealed a pedunculated growth arising from the buccal gingiva in relation to 47 and 48 on the buccal aspect extending distal to 48 and to the occlusal surface also

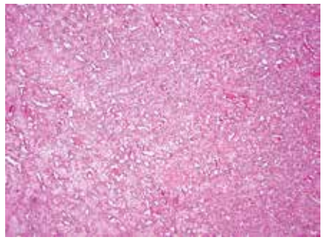
Figure 2: Gross picture showing soft tissue measuring 1.5x1.5cm, yellowish in color and soft in consistency

Figure 3: Photomicrograph showing a band of connective tissue made up of fibrovascular reactive tissue consisting of abundant young proliferating blood capillaries covered by fibrino-purulent membrane (H and E, 10x)

Figure 4: Photomicrograph showing connective tissue made up of abundant proliferating blood capillaries, filled with red blood cells and small lymphatic vessels, numerous plump active fibroblasts infiltrated with few chronic inflammatory cells (H and E, 20x)







PHYSIOTHERAPY College NEW BLOCK Inauguration

Navodaya College of Physiotherapy is a premier institution run by Navodaya Education Trust®, Raichur that offers undergraduate and postgraduate Physiotherapy courses.

The new block for Navodaya College of Physiotherapy was inaugurated on 12th May 2014 by offering auspicious pooja. This exclusive Physiotherapy block situated in the third floor of Navodaya Medical College is built up with ample space and provided with necessary infrastructure. This physiotherapy block has sophisticated movement science lab, electrotherapy lab, spacious office room, departmental library, seminar hall and UG and PG class rooms.

Analysis of PHYSICAL THERAPY REHABILITATION

(Task oriented training) in geriatric rehabilitation and its FIM impact in maintaining optimal health and overcome the effects of BEDREST.

DR. DANISH SALIM
Intern Physiotherapist,
NMCH&RC,
Raichur

Co-Author
DR. VANI P. (M.P.T.)
Lecturer,
Navodaya College
of Physiotherapy

INTRODUCTION

Aging is a natural process. In the words of Seneca, "old age is an incurable disease", but more recently, Sir James Sterling Ross commented," you do not heal old age, you protect it, you promote it, you extend it.

A variety of degenerative process are called "normal aging" until they proceed far enough to cause clinically significant disability.

Problems with geriatric individuals:

- Neurological: brain changes with age, clinical depression, altered mental status, stroke
- Cardiovascular system: hypertension common, changes in heart rate and rhythm.
- Gastrointestinal system: constipation, deterioration of structure in mouth, decline in efficiency of liver, impaired swallowing, malnutrition.
- Musculoskeletal: osteoporosis, osteoarthritis.
- Respiratory: reduced cough, increased tendency of infections, reduced gas exchange
- Renal: drug toxicity problem, general decline in efficiency.
- Skin: less perspiration, tears more, heals slowly.
- Immune system: fever absent, lessened ability to fight disease.

Geriatric rehabilitation:

A complex set of processes involving several professional disciplines aimed at improving QoL(quality of life) and daily living difficulties caused by chronic diseases

- Approaches: multidisciplinary approach (physician, gerontologist, physical therapist)

Task oriented approach.

THE FIM:

Functional independence measure (FIM) scale measures the degree of disability the patient is experiencing in activities of daily. The FIM was used to measure the effectiveness of the intervention; therefore it was administered at admittance of the client into the outpatient rehabilitation unit and on discharge. The task is scored based on the level of assistance the client required to perform the task. The tasks that were observed and scored included bed activities, bathing, dressing, toileting, grooming.

- The scoring is on 1-7 scale (7 = complete independence, 6 = modified independence/requiring the use of a device but no physical help, 5 = supervision/requiring only standby assistance on verbal prompting or help with set-up, 4 = minimal assistance/requiring incidental hands- on help only (subject performs>75% of the task), 3 = moderate assistance/subject still performs 50-75% of the task, 2 = maximal assistance/subject provides less than of the effort (25-49%), and 1 = total assistance/subject contributes <25% of the effort or is unable to do the task.
- Population that are commonly tested with the FIM include Stroke, Spinal cord injury, brain injury, multiple sclerosis, orthopedic conditions including low back pain and Geriatrics (functional independence Measure: rehabilitation institute of Chicago,2010). Additionally, the FIM illustrates excellent reliability and validity.

Mr. SQ, 78 yrs old male, civil engineer by profession, diagnosed with L1 compression fracture with spondylolisthesis and spondylosis at various levels with prostatomegaly who was referred to our hospital and treated on OPD basis on January 1st 2014.

Patient was having back pain, difficulty in mobility, difficulty in sit-to-stand and needs the support of walking aid and dependable in most activities like bathing, toileting, bed activities, dressing.

The patient is a known case of prostatomegaly (BEP II) with loss of bladder control. He also has vision and hearing defects and uses assistive aids for the same. He was brought on wheelchair to our department.

On Examination: FIM (functional independent measure) scale is used.

- Bed activities: 5 – moderate assistance needed.
- Bathing: 6 - dependence with some independence
- Toileting: 5 – moderate assistance needed.
- Dressing: 4 – mild assistance, activity under supervision.
- Grooming: 3 – mild assistance with no super vision.

Investigation: X-ray: L1 compression with spondylolisthesis and spondylosis at multiple levels.

Intervention:

Task oriented training was used as an adjunct to rehabilitation. It rehabilitates patients on functional way. It treats the patient as a whole. A recent study suggests and support task oriented training in improving patient's ability.

The interventions used are:

1. Bed mobility activities: The patient was started with warm-up exercises like active range of motion (AROM) exercises both upper and lower extremities followed by stretching of hams, adductors & plantar flexors, flexion exercise of the trunk and pelvic bridging.
   Dosage: 10 repetitions for each motion.
2. Pre Ambulatory Training: Sit-to-stand activities training by breaking the component into simpler tasks with proper control.
   Dosage : Maximum number of repetition was given till the limit of fatigue.
3. Ambulation and stair climbing training: Postural correction was given followed by gait training in parallel bar. Kinematic gait analysis with gait parameters is assessed and necessary gait corrections were given. The patient cooperated with the rehabilitation session and showed significant improvements.
4. Respiratory rehabilitation: Breathing exercise – pursed lip breathing was encouraged throughout the rehabilitation program.

Results:

The patient achieved significant improvements in his bed activities, sit-to-stand and walking abilities both indoor and outdoor after 20 days of rehabilitation.

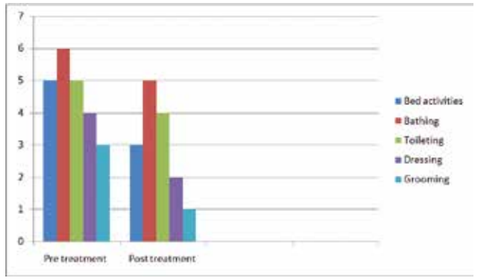


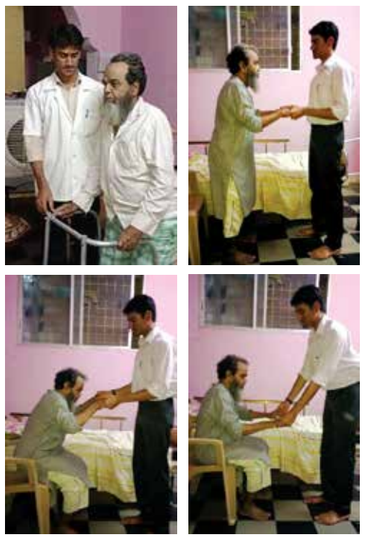
Fig: FIM (Functional Independence Measure) scale scoring pre and post treatment values.

Discussion:

A task-oriented approach may improve ADL outcomes in individuals with neurological as well as orthopedic conditions; however, rigorous experimental design studies are required to determine the effectiveness of the intervention in this population.

Conclusion:

The results of the analytical study shows the patient has improved in bed activities and ambulatory activities so we conclude that task oriented training with multidisciplinary approach may be beneficial in improving ADL(activities of daily living) in the geriatric population.



THE JOURNEY TO A POLIO-FREE INDIA

India's accomplishment in eradicating polio is the most impressive public health success. Many health experts predicted Polio free India will be a mere dream in India, as Indian rural communities are dispersed across a vast and often inaccessible terrains. Its 1.2 billion citizens are highly mobile and 27 million new Indians are born every year. But India surprised them all. Three years on and no polio cases are recorded. Before the launch of the Global Polio Eradication Initiative, polio crippled an estimated 200,000 children in India each year. India achieved a major milestone in 2014. By passing two full year without recording any cases, India is no longer considered a polio-endemic country.

The journey from 200,000 to zero has been long, hard and arduous. Vaccinating all the children and designing the massive campaign was arduous. It has included billions of dollars of investment and the delivery of billions of doses of vaccine.

The successful polio drive campaign has three elements.

- Clear goal
- Comprehensive plan
- Precise measurements

But the heart of plan was simple and inspiring mission: FIND THE CHILDREN. Indians responded to this with an army of more than two million vaccinators canvassed every village, hamlet, slum.

The progress is a credit to the tireless work of millions of frontline workers – vaccinators, public health experts, medical and allied health students, NSS volunteers, social mobilizers, community workers, health workers, religious leaders, influencers and parents – in often difficult circumstances and environments.

The progress is also a credit to the raft of innovations that have been introduced in India to tackle polio– many of which are now followed in other countries, and which are covered in this article.

However, there is no room for complacency; India must remain vigilant to protect children against polio until global eradication is achieved. Sensitive surveillance for poliovirus and high-quality immunization activities must be maintained. Every state in India must be prepared to promptly detect and respond to any wild poliovirus.

HISTORY OF POLIO

What is Polio?

Transmitted via the faecal-oral route, poliovirus invades the central nervous system and as it multiplies, destroys the nerve cells that activate muscles, causing irreversible paralysis in hours. Of those paralysed, 5-10% die when their breathing muscles become immobilized. There is no cure for polio, but there are safe, effective vaccines which, given multiple times, protect a child for life. If sufficient numbers are immunized against polio, the virus is unable to find susceptible children to infect, and dies out.

It is likely that polio has caused paralysis and death for most of human history. The oldest clearly identifiable reference to polio is an Egyptian stele (pictured), depicting a man with a withered leg, leaning on a staff, which is more than 3,000 years old.

By the time of the Great Depression, polio was perhaps the most feared disease on the planet. Epidemics were reported annually and in 1952, polio reached a peak in the United States, with more than 21,000 cases reported.

In 1955, the March of Dimes campaign by US President Franklin Roosevelt bore fruit when Dr Jonas Salk developed the first vaccine against polio – an injectable, inactivated polio vaccine. In 1961, Dr Albert Sabin developed a "live" oral polio vaccine (OPV) which rapidly became the vaccine of choice for most national immunization programmes globally.

Following the success of smallpox eradication in 1977, Rotary International launched its ambitious dream to eradicate polio in 1985. PolioPlus was born – the first and largest internationally coordinated private-sector support of a public health initiative.

In 1988, the World Health Assembly voted to launch the Global Polio Eradication Initiative (GPEI). At that time, wild poliovirus was endemic in 125 countries, paralyzing more than 1000 children every day. Today, indigenous polio has been eliminated from all but three countries – Afghanistan, Nigeria and Pakistan. The GPEI, spearheaded by national governments, WHO, Rotary International, CDC and UNICEF, is the largest public health initiative the world has known. Since 1988, some two billion children have been immunized against polio thanks to the cooperation of more than 200 countries and 20 million volunteers, backed by an investment of US$ 3 billion.

1988

When the World Health Assembly passes its resolution to eradicate polio, the disease is endemic in 125 countries. Over the next 25 years, more than 2.5 billion children will be immunized against polio by more than 20 million volunteers, backed by an international investment of more than US$8 billion.

1994

The Americas are certified polio-free by the International Commission for the Certification of Polio Eradication. Most of Europe is now polio-free.

2000

The 37 countries and territories of the WHO Western Pacific Region (WPR) are certified polio-free, the second WHO Region to be certified polio-free. With Turkey having stopped transmission, all of Europe is no longer polio-endemic.

2012

India records one year without any cases, paving the way for regional certification of the South East Asian Region in 2014 if India, and its south-east Asian neighbours can remain polio-free. Only Pakistan, Afghanistan and Nigeria remain endemic.

HISTORY OF POLIO IN INDIA

2001

UNICEF establishes the Social Mobilization Network (SMNet) in Uttar Pradesh to mobilize community for polio immunization.

Amitabh Bachchan becomes UNICEF Brand Ambassador for Polio.

2002

Taking over from private donors, the Government of India takes the lead role in financing polio eradication activities in the country using its own resources.

Rotary International hosts first Polio Summit in India.

2003

The under-served strategy is introduced as part of communication efforts in Uttar Pradesh to reach out to and get support of marginalized sections of the society for polio eradication.

2004

Poliovirus surveillance increases in sensitivity. Transit vaccination strategy launched, with teams stationed at bus stands, railway stations, highways, markets and at congregation sites.

Rotary International hosts second Polio Summit in India to accelerate Polio eradication.

2005

More effective monovalent oral polio vaccines (mOPV), tackling either type 1 or type 3 wild poliovirus, introduced.

2006

The vaccinators are given a special booklet to register all newborns and immunize them for at least eight polio rounds.

Operational strengthening takes place to improve microplanning for revisits to households with unvaccinated children following the first contact with vaccinators.

2007

Rotary International forms Ulemas' Committee in UP to enhance Muslim community support.

Accelerated immunization rounds take place almost monthly in polio-endemic states of UP and Bihar, using efficacious mOPVs.

2008

Kosi River Plan drawn up to intensify and focus efforts in Bihar. High-risk blocks are mapped, and additional stay points built for enhanced supervision and efforts in the hardest-to-reach areas where children are being missed. WHO-NPSP further expands – 333 surveillance medical officers on the ground cover all parts of India.

India removed from the list of polio endemic countries after completing a year without reporting any case of polio in January 2012, a major milestone in the history of polio eradication.

2009

107 Block Plan is introduced in UP and Bihar. Focus on migrant populations in brick kilns, construction sites, slums and nomadic settlements.

Rotary pledges US$200 million against Bill & Melinda Gates Foundation's pledge of US$355 million.

2010

Bivalent oral polio vaccine (bOPV), which tackles both type 1 and 3 wild poliovirus serotypes concurrently, introduced in India.

The Government of India, through the India Expert Advisory Group on polio eradication, recommends responding to each case of polio as a public health emergency.

2011

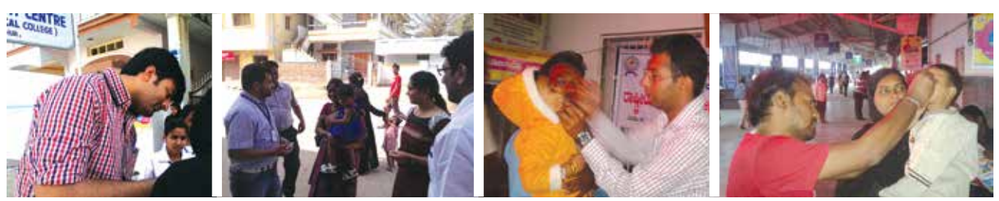
Aggressive response to the lone case of polio in Howrah, West Bengal.
A large-scale mop-up immunization activity is launched within 7 days of notification of the case, with 3 additional mop-up rounds conducted in 7 weeks from confirmation of the case.
All States & UT's prepare Emergency Preparedness & Response Plans (EPRPs) to respond to any case of polio as a public health emergency.

2012

India removed from the list of polio endemic countries after completing a year without reporting any case of polio in January, a major milestone in the history of polio eradication.

Shri. Ghulam Nabi Azad, then Hon'ble Union Health Minister receiving the polio free certification from WHO officials in March 2014.

Big-B-Wants-Polio-Free-India



A drop of services and tireless efforts by Navodaya in contributing to the phenomenal success of eradicating polio from India.
This is because of unwavering dedication of front-line students working round the clock motivated by the faculty members. .

Two-year-old Rukhsar, from Panchla Block, Howrah, West Bengal, was paralyzed by polio on 13 January 2011.

WILL SHE BE THE LAST CASE IN INDIA?

Article complied by
Dept of Pediatrics,
Navodaya Medical College.
Dr. S. Manivannan, Principal,
Navodaya College of Physiotherapy.
Dept. of Community Based Rehabilitation,
Navodaya College of Physiotherapy.
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G.A.T.E - RESULTS
GREAT - VICTORY
GRAND - CELEBRATIONS

Pankaj (6th from the left)

The Graduate Aptitude Test in Engineering (GATE) is an all-India examination that primarily tests the comprehensive understanding of various undergraduate subjects in engineering and science. GATE is conducted jointly by the Indian Institute of Science and seven Indian Institutes of Technology. The GATE score of a candidate reflects the relative performance level of a candidate. The score is used for admissions to various post-graduate programs (e.g. Master of Engineering, Master of Technology, and Doctor of Philosophy) in Indian higher education institutes, with financial assistance provided by MHRD and other governmental agencies. It is one of the most competitive examinations in India.

Mr. Pankaj Kumar Gupta from Navodaya Institute of Technology cracked this prestigious GATE exams by securing in the top 100 positions and got admitted in one of the elite engineering institution – Indian Institute of Technology, Kharagpur – West Bengal.

Nectar magazine interviewed this techie to give some insights to their fellow juniors in our engineering college.

How would you like to describe Mr. Pankaj Kumar Gupta?

I am positive, hardworking, social and helpful. I love to have fun with my friends. I am devoted and dedicated in the tasks assigned to me.

Your name is in top 100 out of 8,89,156 candidates who appeared for GATE 2014 exams. How do you feel?

I am immensely delighted as I got my dream accomplished. It boosted up my confidence and made me feel great as I made my parents, relatives and friends feel proud of my achievement.

A challenge that you overcame in preparing GATE exams

It was much difficult to instigate the preparation. Time management was a big problem. I had lack of resources and proper guidance to trace the path I should walk on.

What suggestions do you have for an individual wishing to appear for competitive exams?

I would suggest them to build up concept thoroughly which makes one confident and analytical. I also suggest them to join institutes that conduct online classes like GATE forum in their 6th semester. It assists in achieving your destination.

Who in your life has most influenced you?

I am very much influenced by scientist Dr. A.P.J. Abdul Kalam. Though he belongs to a poor family and was brought up in a less developed society, he managed to reach the apex of

Pankaj Kumar Gupta seeking divine blessings

success. His hard work, as expressed in 'wings of fire', changed my way of thinking. I am very much influenced by his hard work and the way he succeeded.

Where do you see yourself in 10 years from now?

I would like to see myself in a reputed research centre being enrolled in projects that serve my nation and humanity. I wish my dream come true with the grace of god.

Describe your most rewarding college experience?

The most rewarding college experience was to be congratulated with applaud by my family, friends and entire N.E.T. when GATE results were announced.

Who has served as your role model throughout your graduate experience?

My dear friend Pankaj Bhandari served as a role model for me. His wonderful sense of humor, ability to surmount any sort of situations, dynamic personality always encourages and inspires me to strive for the best.

Who was your best teacher, and why?

I would like to remember Kapileshwor Jha as my best teacher from Nepal. He built up all the fundamentals in physics and made my concept very sound when he took entrance preparation classes immediately after PUC. He has inspired many students like me.

What are your career goals?

My goals are directed to serve my society in terms of technology especially in those areas where people are deprived of them. Further, I want to bring some remarkable changes in the field of technology.

What are the top three things that are most important to you when looking for a job?

1) Service motive job

2) Job that could technically vigor me.

3) Sound working environment

What three main attributes or skills do you think are most important for a student?

1) Hard work.

2) Dedication.

3) Ability to judge his/her potential.

What kind of hobbies and activities do you enjoy in your spare time?

I enjoy playing some indoor and outdoor games, visit peaceful places to ramble and unwind my selves.

What suggestions do you have for improving the overall student experience at our institution?

Rome was not built in a day. I anticipate NIT-R will exceed my expectations when it becomes fully fledged. As I walk out of this campus, I sincerely put forth this suggestion to make the student experiences beautiful. Frequent student activities, conferences, workshops should be organized; library and laboratory resources should be updated periodically.

When you leave this college, what are the most important things you want us to remember about you?

I would be grateful, if I get blessings from the entire college.

How would you describe this institution to someone who is visiting for the first time?

The institution is in progressing stage. It is likely to be one of the most reputed colleges in the state in near future. I can see the vigor in the Management, Principal and Faculty and definitely in the coming days NIT-R will be flocked by intellectuals and the students from this institute will rule the world in future.

Pankaj in the middle

Mr. Pratap C Poudel secured 4000 rank in the 2014 GATE examination. His interview is as follows.

Mr. Pratap C Poudel, how would you like to describe yourself?

Well, I am an ordinary man. Like everyone, I also try doing something different, I also dream of becoming one of the successful and venerated figures in the society. I am a hardworking and dedicated person. I would like to call myself as a disciplined and punctual person. The best part of me, what I feel, is that, I strictly follow the adage-"anything timely executed gives the best result."

Your name is in top 4000 out of 8,89,156 candidates who appeared for GATE 2014 exams. How do you feel?

I feel triumphant, indeed. I got the fruit of the efforts I had put during the preparation. I had the confident that I can qualify GATE with the knowledge and guidance of the lecturers that I received for long 4 years. Though the result corroborates my dedication during my preparation, I could have done better, had I put more efforts. Nevertheless, I felt good.

A challenge that you overcame in preparing GATE exams.

The main challenge I felt was time management. I took many mock-tests before actually appearing in GATE exam. But, many times, I couldn't complete all the questions in the time specified. I overcame this in the latter days. I determined myself that I wouldn't give more than 2 minutes to one question.

In addition to this, my health condition turned out to be a challenge to my preparation. I couldn't give much time as I had a severe back-pain.

What suggestions do you have for an individual wishing to appear for competitive exams?

Preparing for competitive examination is different than preparing for regular semester exams. An individual needs to prepare technically in case of competitive exams. Merely going through the text doesn't help much. Thorough study and proper manipulation of the concepts are must. Before starting preparation, go through the syllabus and circumscribe the extent of study. Set the target and act accordingly. Work hard and dedicate yourself to your target. Always remember- "No pain, No gain".

Where do you see yourself in 10 years from now?

To be honest, I haven't given much thought to that. However, I would like to see myself as a leading personality in IT sector.

Describe your most rewarding college experience?

I was not a brilliant student till PUC. In the first semester itself, I topped the entire branch though there were other deserving students as well. That was the most rewarding college experience.

Who was your best teacher, and why?

During my initial days at college, I was much inspired by the teaching methodology of our Maths teacher, Mr. Suresh Patil. I consider him as my best teacher. He is amiable, hardworking and optimistic in nature. He always motivated me to work hard. In the latter semesters, Prof.Ram Murthy, Prof.Jeeva , Prof.

INTERVIEW

G.A.T.E - RESULTS
GREAT - VICTORY
GRAND - CELEBRATIONS

Pratap - Extreme Left

Smita and Prof. Nida were my favorites though all the teachers are equally respectable for me.

What are your career goals?

To gain expertise in engineering sector working in some reputed companies.

To contribute to the task of nation building by serving the field of technology.

What are the top three things that are most important to you when looking for a job?

- The company should help me use my caliber to the fullest.
- The company should be contributing in new innovations.
- The environment within organization should be encouraging.

What three main attributes or skills do you think are most important for a student?

- Hard-work & dedication
- Diligence
- Punctuality

What kind of hobbies and activities do you enjoy in your spare time?

I love to travel with the friends. In spare time, I enjoy reading novels and listening to old hindi songs.

What suggestions do you have for improving the overall student experience in our institution?

There is no doubt that we have got a good college. The infrastructures and quality of education are sound. However, the institution must focus more in the practical based teaching. The motive should be not only to make student pass the examination, but also to make them capable of sustaining in the present competitive world. And, the decisions taken by management should be in the favor of students and their welfare.

How would you describe this institution to someone who is visiting for the first time?

To all the students who visit this institution, I would just like to say that the infrastructures available are affluent. The teachers are affable and always motivating. The institution never compromises in the quality of education. If you wish to do the best, the institution will provide full-fledged support and sound environment for your dream to come true.

Inauguration of Post Graduate Courses in Medical & Dental College

The 07th batch of medical post graduate and Post graduate diploma courses on Navodaya Medical College and 04th batch of dental post graduate courses was inaugurated on 02nd July 2014 in Dr. C. M. Gurumuthy Hall, Navodaya Medical College Hospital & Research Centre, Raichur. Dr. S. R. Hegde, Medical Director, Navodaya Medical College welcomed the gathering. The courses were inaugurated by Dr. H. Veerabhadrappa, President – Karnataka Medical Council. Shri. S. R. Reddy, Hon'ble Chairman, Navodaya Education Trust® presided over the occasion. The post graduate medical courses orientation was given by Dr. B.Vijayachandra – Principal, Navodaya Medical College and post graduate dental courses orientation was given by Dr. R. Padmanabhan, Principal, Navodaya Dental College.

CME on current updates in OBG - Workshop on surgical management of PPH

The department of Obstetrics & Gynecology, Navodaya Medical College organized one day CME on current updates in OBG and workshop on surgical management of Postpartum Hemorrhage (PPH) on 15th June 2014. The CME and workshop was inaugurated by Dr. T. Srinivas – Registrar, Navodaya Education Trust®, Raichur, Dr. S. R. Hegde – Medical Director, Navodaya Medical College, Dr. B. Vijayachandra – Principal, Navodaya Medical College and Dr. Sheela M Kodliwadmath – Prof. & Head, Dept of Obstetrics & Gynecology, Navodaya Medical College. More than 110 deligates attended this program and MCI has awarded 2 credit points for this CME. Dr. Sheela M Kodliwadmath – Prof. & Head, Dept. of Obstetrics & Gynecology, was the Chair person of this CME organizing committee.

"World No Tobacco Day-31st May 2014"

Department of Community Medicine has organized and successfully celebrated World No Tobacco Day on 31st May 2014.
Theme for this year is "Raise Taxes On Tobacco: Lower Death and Disease".

Health talks and awareness programme was conducted at Navodaya Medical College for Medical, Dental, Nursing & B. Ed students and Interns. The event was organized under the supervision and guidance of Dr. Anant A. Takalkar, Professor and organizer of Community Medicine.
The objective is to create and raise awareness among the target groups (students of different specialties) about Tobacco & Tobacco related illnesses and its prevention.
Health talks were given by Dr. A.T. Kulkarni (Prof), Dr. Anant A Takalkar (Prof) & Dr. Revathi (Asst. Prof.).
Around 120 participants including Medical students, Dental house surgeons, B. Ed & Nursing students were present. Pamphlets in regional language were prepared and distributed by Dr. Sreejith, Dr. Chethana & Dr. Ganesha (PGs) to audience. Also the pamphlets were distributed to RHTC and UHC field practice area of Community Medicine. The programme was later followed by refreshment to all participants.
The support of Dr. S. G. Hiremath (Prof & HOD) and Dr. A. T. Kulkarni (Prof), in planning and execution was commendable.

World Earth Day 2014 - Green Audit Committee, Navodaya Dental College, Raichur

Every year on April 22, over a billion people in 190 countries take action for Earth Day. From San Francisco to San Juan, Beijing to Brussels, Moscow to Marrakesh, people plant trees, clean up their communities, appreciate the green campaigners, and more—all on behalf of the environment.

Green Audit Committee of Navodaya Dental College celebrated the World Earth Day on 22nd April 2014. This is the first-of-its-kind unique celebration in the campus to save our earth. The undergraduate students, interns and post graduate students enthusiastically participated in this program. The faculty members, Heads of the all the dental departments and Principal also took part in this program. The message was clear to all – Active and educated people forward-thinking public policy creates a sustainable feature. Nothing is more powerful than the collective action of a billion people.

During this occasion Shri.Ramanna , gardener of Navodaya Dental College was felicitated by the Principal, HoD's, faculty members and students. Dr.R.Padmanabhan, Principal, Navodaya Dental College spoke the importance of celebration this mother earth day and appreciated the efforts of Green Audit Committee. The green audit committee also planted trees in the garden to commemorate this year world earth day celebrations.

The green audit committee members Dr.Surekha, Dept of Oral Pathology,Dr.Vinod, Dept of Pedodontics and Dr.Suresh Babu A M, Dept of Public Health Dentistry organized the program.

World Health Day 2014

Department of Community Medicine has organized and successfully celebrated "World Health Day" on 07th April 2014. Theme for this year is "Small Bite: Big Threat". Health talks and awareness programme was conducted at RHTC, Singnodi and a symposium for medical, dental, nursing and physiotherapy faculties and PGs was organized under the guidance of Dr. Anant A. Takalkar, Professor in Community Medicine.

The objective is to create and raise awareness among the rural people of Singnodi about the mosquito and other vector borne diseases, its early warning signals, prevention and control. Health talks were given by Dr. S. G. Hiremath, Professor and Head, Dr. Ramesh. Asst. Professor and Dr. Ganesha, PG.

Around 50 participants including the people from RHTC field practice area, staff of department, house surgeons and students of 7th semester were present. Pamphlets in regional language and English were prepared and distributed by Dr. Ramesh and Dr. Revati (Asst. Professors). It was later followed by refreshment to all the participants. The support of Dr. S. G. Hiremath, Prof. and Head & Dr. A. T. Kulkarni, Professor in planning, execution and technical help was commendable.

A symposium on WHO theme "Small Bite: Big Threat" was organized in Digital library in order to update our knowledge and recent threats of important vector borne diseases. Dr. A. T. Kulkarni, Professor acted as a moderator. Dr. Chethana and Dr. Sreejith Nair (PGs) discussed in detail about epidemiology and prevention of the vector borne diseases. Pamphlets were distributed to all faculties from medical, dental, nursing and physiotherapy colleges.

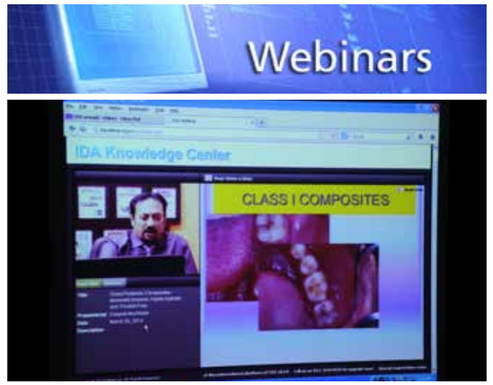
World Earth Hour - Green Audit Committee

On March 29, 2014, hundreds of millions of people around the world in over 7,000 cities in 162 countries turned off their lights for Earth Hour, in the annual display of commitment to protect the planet.

Green Audit Committee of Navodaya Dental College & Hospital made an initiative to care for the planet and informed the students about the importance of Earth Hour.

Earth Hour is a worldwide movement for the planet organized by the World Wide Fund for Nature (WWF). The event is held worldwide annually encouraging individuals, communities, households and businesses to turn off their non-essential lights for one hour, from 8:30 to 9:30 p.m. on the last Saturday in March, as a symbol for their commitment to the planet. The dental college students in the hostels voluntarily switched off their room lights for one hour. These students had joined millions of people across the world to raise awareness for the planet.

Webinars in Navodaya Dental College



The Research Committee, Navodaya Dental College & Hospital organized series of WEBINARS to instill the recent advancements to the students and faculty members of Navodaya Dental College.

The webinars are organized in association South Asian Cochrane Network – Christian Medical College Vellore and Indian Dental Association, New Delhi.

27th March 2014, PRACTICAL APPLICATION OF THE COCHRANE LIBRARY WITH CASE STUDY,
Speakers: Dr. Prathap Tharyan, Director, South Asian Cochrane Network – CMC Vellore, Mr. Gavin Stewart, Associate Editor, The Cochrane Library

29th March 2014, AESTHETIC DENTISTRY : DIRECT POSTERIOR COMPOSITES – MINIMALLY INVASIVE, HIGHLY ESTHETIC AND TROUBLE FREE,
Speakers: Dr. Deepak Muchhala, Experienced Dental Surgeon, Mumbai

25th April 2014, SAIL TO SELL...REDEFINING YOUR DENTAL PRACTICE,
Speakers: Dr. Sujit Pardeshi, Experienced Dental Surgeon, Mumbai

Jaw Dropping CDE by Dept. of Oral Surgery

The department of Oral and Maxillofacial surgery, Navodaya Dental College and Hospital, Raichur conducted one day Continuing Dental Education programme on "Jaw Dropping" Transformation – All you want to know on 18th of March 2014 at Navodaya Central Library.

The eminent speakers were Dr. S Ramkumar Prof, Department of Oral and Maxillofacial surgery, Sri. Ramchandra Dental College, Chennai; Dr. Abhilash AB, Consultant Gobal Hospitals, Chennai and Prof. Peter A Brennan, University of Portsmouth, Queen Alexandra Hospital, UK.

The first lecture was delivered by Prof. S Ram Kumar on Mandibular Osteotomies. The second lecture by Prof. Abhilash AB on Mandibular Trauma and the third lecture on Mandibular reconstruction by Prof. Peter A Brennan. It was an eclectic mix of knowledge and was a boon for post graduates.

The programme was started with felicitation of the guest speakers by a token of appreciation and followed by vote of thanks given by Dr. Shivaraj Wagdargi.

World TB Day

Department of Community Medicine has organized and successfully celebrated "World Tuberculosis Day" on 24.03.2014.

Theme for this year is "Reach the 3 million- Find, Cure, Treat TB". The centre attraction of the day was a street play performed by the students of 6th semester under the guidance of Dr. Anant A. Takalkar, Professor in Community Medicine.

The objective of the street play is to create and raise awareness among the patients suffering from tuberculosis and their relatives as well as general population about early diagnosis, treatment, care and prevention of tuberculosis.

Pamphlets and placards were prepared in regional language on tuberculosis awareness by Dr. A. T. Kulkarni, Professor and Dr. Anant Takalkar, Professor. The support of Dr. S. G. Hiremath, Prof. and Head in planning, execution and technical help was commendable.

The event took place in the hospital premises of NMCH and Dr. Srinivas, registrar, NET and Dr. B. Vijayachandra, Principal, NMC appreciated the students about their role play.

About 150 medical students actively participated in the event by raising slogans, banners and display placards. Pamphlets distribution was done by our PGs in the hospital, RHTC and UHC on the same day. It was followed by refreshment to all participants.

Dr. Anju (Assoc. professor), Dr. Ramesh, Dr. Pradeep and Dr. Revathi, Dr. Patel (Asst. professor), Dr. Chethana and Dr. Sreejith (PGs) and Mr. Jagali (MSW) were actively involved and made it a grand success

The event was a grand success.

CDE by Dept. of Periodontics

Department of Periodontology, Navodaya Dental College and Hospital conducted continuing dental education program on 15th march 2014 at audio-visual hall of central library. Two eminent speakers Dr Jayakumar from Hyderabad and Dr Girish Nagarale from Dharwad delivered guest lectures. Dr T Srinivas, Registrar, N.E.T was the chief guest for the program and around 200 delegates participated in the program. The lectures were on Periodontal medicine and infection control, both of which are burning topics in the subject of Periodontology.

International Women's Day Celebrations in Navodaya Dental College & Hospital

Smt.Naghubhai, Librarian, Navodaya Dental College & Hospital was felicitated in International Women's day celebrations.

Navodaya Dental College & Hospital, Raichur celebrated International Women's Day on 08th March 2014. The women's day celebrations was inaugurated by Smt. Swathi Reddy, Managing Trustee, Navodaya Education Trust and key note address was delivered by Smt. Veena Pramod, Social and women activist, Raichur. In her key note address, she stressed the role of present generation women and various factors affecting her career advancements. Prof. Prema Balusamy, Principal, Navodaya College of Nursing spoke about the theme "Inspiring Change" and how women shall be the change in the society. Navodaya Dental College & Hospital women cell was inaugurated in the function with the objective to empower women and address their needs in the society. Dr. Vani Shree, Prof &HOD, Dept of Oral Pathology is the convener of the women's cell. Smt. Nagubhai, Librarian of Navodaya Campus Central library was felicitated in this occasion for her association with the college since 1999. Inspiring videos related to women rights and empowerment was screened in the occasion.

Cone Beam CT imaging & an interactive Workshop

The department of Oral Medicine and Radiology recently conducted a CDE programme on "Cone Beam CT imaging and an interactive workshop" on 7th march 2014 in Dr. C.M Gurumurthy Hall. The guest speakers for the occasion were Dr. Sharad Sahai – Maxillofacial Radiologist, New Delhi and Dr. Prashant Jahu – Maxillofacial Radiologist, Bhopal. The CDE Programme was conducted in the morning session and the hands on workshop in the afternoon session. The programme began with the lightening ceremony by the chief guest Dr. T. Srinivas. Introduction of the guest speakers was given by Dr. Shilpa.R.T. Words of encouragement were spoken by the Honorary Prinicipal Dr. Padhmanabhan followed by the respected registrar Dr. T. Srinivas. Dr. Saritha Maloth delivered the vote of thanks. The CDE lecture began on "Basic applications of CBCT" by Dr. Sharad sahai, followed by the lecture of Dr. Prashant Jaju on "Advanced applications of CBCT".

The afternoon session was completed by Dr. Prashant Jaju and Dr. Pradeep Sahai with an interactive hands on workshop where skills to utilize the CBCT software and its various applications in dentistry were highlighted. It was an enlightening programme and a perfect mixture of new and interesting experience especially for the post graduate students and staff of departments of OMR, CONS, PROSTHO and OS. The CDE programme was attended by 189 delegates and the hands on workshop included 31 delegates.

BHOOMI

Navodaya Central School, Raichur celebrated its first Annual day celebrations on 22nd Feb 2014 with the theme Bhoomi. The annual day celebration was presided over by Shri. S. R. Reddy, Chairman, Navodaya Education Trust, Raichur and Chief Guest was Ms. Neerajakshi, academic consultant from Academy for Creative Teaching, Bangalore. Prof. C. Suresh Babu, Director of Navodaya Central School welcomed the gathering and the program was compered by Ms. Swathi.

Shri. S. R. Reddy in his presidential address, stressed upon the need of quality school education in Raichur and in this regard, he assured that a school of world class infrastructure will be ready within 18 months spread over 20 acres of land. He also assured that quality education will be imparted by hiring the best teachers and further collaboration with academic consultants like ACT, Bangalore will definitely boost the quality of education. He congratulated the team Navodaya Central School for bringing the change within one year of its inception.

Ms. Neerajakshi in her address stressed upon the importance of role played by management, students and parents by and large. Only when three of these contribute equally, then real development can be seen in all spheres and students will definitely rise to the expectations of the parents and management.

Prizes were distributed by the President, Chief Guest, Director and Principal.

The cultural program was based on the theme –Bhoomi and students enacted a wonderful performance showcasing the different stages of life on earth. Ultimately, they passed to the message the society about the harmful effects of pollution and showed that the glory of earth can be retained back through three R's – Reduce, Reuse and Recycle. The program concluded with vote of thanks by Mr. Ranjith Toppo.

WORLD ANTI LEPROSY DAY JANUARY 30, 2014

• Department of Community Medicine has organized and successfully celebrated "World Anti leprosy Day" on 30.01.2014 under the guidance of Dr. Anant A. Takalkar and Dr. A. T. Kulkarni.
• Theme for this year is "Joining Forces, Accelerating Progress". Health talks and awareness programme was organized in leprosy colony, RTO circle Raichur.
• Welcome speech given by Dr. S.G. Hiremath & Dr. Vijaychandra Principal, inaugurated the function by lighting lamp for Sri Mahatama Gandhi photo and he addressed the leprosy patients about the facilities available in Navodaya hospital for leprosy patients.
• Dr. Hanmanthappa Asst. Professor, Dept. of Dermatology addressed the leprosy patients about the disease in detail and its treatment. Dr. A.T. Kulkarni, Professor, addressed the gathering and enlightened them about the preventive and rehabilitative aspects of leprosy. Dr. Surendra Babu, RCH Officer addressed the gathering about the services under National leprosy eradication programme.
• All the other staffs Dr. Anju Ade Assoc. Prof, Dr. Ramesh Asst. Prof, Dr. Revathi Asst. Prof, Dr. M.B. Patil, Dr. Baseer (PG) Dr. Chethana K.V. (PG) Dr. Ganesha (PG) Dr. Swetha (PG Dermatology) Dr. Kusuma (PG Dermatology), House surgeons and MSW Jagali participated in the celebration and made it successful.
• Staff from District Leprosy Office including Dr. Surendra Babu participated actively. Programme later followed by distribution of Chikki, oranges, biscuits & breads to all beneficiaries.
The programme was a grand success.

B.Ed Courses Inauguration

The new batch of B.Ed course (Bachelor of Education courses) was inaugurated on 27th Jan 2014.

The course was inaugurated by Dr. T. Srinivas, Registrar, Navodaya Education Trust®, Raichur. In his inaugural speech, Dr.T.Srinivas emphasized "Teacher has a greater responsibility and accountability to the society because the destiny of the nation is shaped only in the classrooms. An inspiring teacher never passes on information but works sincerely towards transformation of the learners, because more than the facts, it is the personality of the teacher which gets transferred to the learner during the process of interaction." Prof. Prema Balusamy, Principal, Navodaya School and College of Nursing graced the occasion as special guest. Prof.Prema in her special address quoted "teacher is a leader who knows the way, shows the way, and goes the way and advised the student teachers to emerge as an element of change to bring about a good society."

Mr. Pranesh Kulkarni, Principal, Navodaya College of Education congratulated the students for having chosen noble profession of teaching which teaches all other profession.

Neonatal Resuscitation Program: First Golden Minute

The Department of Pediatrics, Navodaya Medical College organized one day Neonatal Resuscitation Program (International Accredited certification course) on 26th Jan 2014 in the Central Library. The Neonatal Resuscitation Program (NRP) was developed by the American Academy of Pediatrics and focuses on imparting practical training to the Pediatricians / Neonatologists on basic resuscitation skills to newly born infants.

The NRP program was delivered by learned neonatologists and intensivists, who happens to be national NRP providers.

1. Dr. B. S. Chandrakala – Lead Instructor, St. John's Medical College, Bangalore.
2. Dr. Suresh Kumar – Instructor, NICE Hospital, Hyderabad.
3. Dr. Pooja Suresh Kumar – Instructor, NICE Hospital, Hyderabad.
4. Dr. Pavan Kumar, Hyderabad.
5. Dr. Prashant K, Father Muller Medical College, Mangalore.
6. Dr. Vikram, Consultant Paediatrician, Shimoga.
7. Dr. Kathiresh, State Co-ordinator for NRP, Shimoga.

The Neonatal Resuscitation Program aims towards dealing with the "Birth Asphyxia" which is rightly considered as one of the leading cause of Neonatal Mortality in our country. The department of pediatrics organized this NRP in discussion with American Heart Association, National Neonatology Forum of India and IAP-NRP division.

CARDIOLOGY WORKSHOP

The department of General Medicine, Navodaya Medical College organized two days Cardiology workshop on 25th and 26th Jan 2014. The two days workshop was inaugurated by Dr. T. Srinivas – Registrar, Navodaya Education Trust®, Raichur and presided by Dr. S. R. Hegde – Medical Director, Navodaya Medical College. Dr. B. Vijayachandra – Principal, Navodaya Medical College was the Guest of Honor for the occasion.

Dr. Basavaprabhu A, DM (Cardio), Govt. ESI Hospital – Gulbarga delivered a lecture on recent advances in the treatment of Myocardial infarction. Dr. Basavaprabhu also performed a live demo of 2D ECHO.

Dr. Sachin Yalagudri, DM (Cardio), Narayana Hrudayalaya, Bangalore delivered a lecture on Approach to arrhythmias. Dr.Sachin also demonstrated ECG & Arrhythmias management using mannequins in skill lab

Dr. Ajith V Kulkarni, DM (Cardio), Global Hospital - Bangalore delivered a lecture on Approach to congenital heart diseases. Recent advances in the treatment of myocardial infarction.

Dr. Ramakrishna, Assoc. Prof. – Navodaya Medical College delivered a lecture on Lipid Modifying Therapy : A New Paradigm.

The workshops were held in the Dr. N. K .Bhat Centre for Clinical Simulation & Research, NMCH&RC, Raichur.

N.E.T. PHARMACY COLLEGE, RAICHUR - TWO DAYS NATIONAL CONFERENCE

N.E.T. Pharmacy College, Raichur and Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore jointly organized two days National conference on "Advance s in Pharmacy Practice" on 29th and 30th November 2013.

The first day's programme was started with inauguration of two days conference followed by talks of the eminent speakers from Pharmacy and Medical faculty. By lighting the lamp the formal programme gained the momentum. Principal Dr.H.Doddayya presided over the function, Dr. T. Srinivas, Registrar, Navodaya Education Trust, Raichur was the Chief Guest, Dr. S. R. Hegde, Medical Director, Navodaya Medical College, Raichur occupied the chair as guest of honor and Dr. Ashok Malpani, convener of the conference was also on the dais. The guests highlighted the responsibility and necessity of the PharmD graduates in the health care system with reference to the present scenario. They insisted that PharmD graduates should develop the feeling that they are the important member of health care team and should be ready to serve the community round the clock. Dr.H.Doddayya, Principal briefed the gathering his presidential remarks. It was Dr. Ashok Malpani who welcomed the gathering, Dr.Bheemachari, Professor & Head, Dept. of Pharmacology, N.E.T.Pharmacy College, Raichur introduced the resource persons, Mr.Binu K.M Lecturer presented the vote of thanks and Mrs.Srividya and Mr. Rahul.S of PharmD (PB) interns jointly anchored for the day one's schedules. The most attractive part of the first day programme was the poster presentation arranged in the Central Library. It was appreciated by the delegates and staff

of different colleges within and outside the state. Around 232 delegates registered for the conference out of which 120 were from outside. Dr.M.S.Ganachari, Professor and Head, Department of Pharmacy Practice, K.L.E.Us College of Pharmacy, Belgaum, Dr.G.A.Manjunath, Professor and Head, Dept of Pediatrics, Navodaya Medical College Hospital & Research Center, Raichur and Dr. Shobha Rani R H, Professor and Head, Department of Pharmacy Practice, Al-ameen College of Pharmacy, Bangalore delivered the lecturers on Evidenced Based Medicine - A pharmacist perspective, Evidenced Based Medicine - A Physician perspective and Population pharmacokinetics-Principles and Applications- respectively. After each talk the session was open for question and answers.

The second days programme was started with introduction of resource persons by Mr.Prakash.G Asst. Professor, Dept. of Pharmaceutics, N.E.T.Pharmacy College, Raichur. Dr.Ramakrishna M.R, Professor, Dept of Medicine, Navodaya Medical College Hospital & Research Center, Raichur, Dr. Sanjeev Chetty, Prof . Dept of Pediatrics, Navodaya Medical College Hospital & Research Center, Raichur and Dr.S.Sriram Professor and Head, Department of Pharmacy Practice, Sri. Ramakrishna Institute of Paramedical Sciences, Coimbatore delivered their lecturers on the topics Evidence based Medicine-for geriatric diabetic population, Evidenced based Medicine-A Pediatrician Perspective and Core competencies in Clinical pharmacy practice respectively. After each talk there was question and answer session. This was followed by valedictory function, Dr. Rajashekar, Medical Superintendent, Navodaya Medical College Hospital & Research Center, Raichur and Dr. Vijayachandra, Principal, Navodaya Medical College, Raichur were the guests for the occasion. The Certificate of appreciation was distributed by the guests to the winners of posters presentation. On the occasion of the two days conference all the resource persons were facilitated by the organizing committee. The conference concluded with the vote of thanks proposed by Dr. Shivkumar, Asst. Professor, Dept of Pharmacology, N.E.T. Pharmacy College, Raichur. Mrs. Pratyusha of PharmD (PB) intern anchored the events of the second day.

Wide print media coverage was made by leading national and local daily about conference.

UNIVERSITY RANKS

The institutions run by Navodaya education Trust®, Raichur has created an outstanding record of securing distinctive medals in the examinations conducted by Rajiv Gandhi University of Health Sciences, (RGUHS) Bangalore. Five Post Graduate students from Navodaya Medical College, Raichur has secured university ranks conducted by RGUHS.

Dr. Praveen Kumar Reddy P
III Rank
M.S. – Orthopedics

Dr. Sameer Uz Zaman
II Rank
M.D. Pharmacology

Dr. Shirshetty Nandini
II Rank
PG Diploma in ENT

Dr. Aditya Krishna Das
VIII Rank
M.D. Anatomy

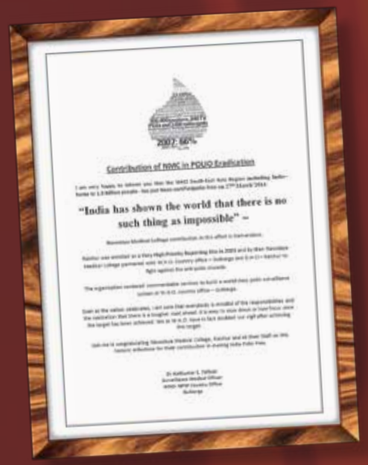
Dr. Mrutyunjay Mirje
IX Rank
M.D. Pharmacology

Mr.Anup Bista
VI Rank, B. Pharma

NET Pharmacy College student Mr. Anup Bista has secured 06th Rank in B.Pharma examinations conducted by RGUHS, Bangalore. The final year B.Pharma students have bagged 21 subject wise ranks in the same examinations conducted by RGUHS, Bangalore.

The honors are richly deserved for the student's hard work and it also shows the strong commitment of the college authorities in imparting the quality education to the students.

The Management, Principals, Staff and Students of Navodaya Education Trust®, Raichur congratulate the students for their laurels and appreciate their sincere efforts in creating a benchmark achievement.



Contribution of NMCH in POLIO Eradication

Dr. Anandkumar P Harwalkar Asst. Prof. of Microbiology, Navodaya Medical College, Raichur was awarded PhD in Microbiology under medical faculty from Rajiv Gandhi University of Health Sciences, Karnataka in June 2014 for the thesis submitted on – 'A comparative study of markers of uropathogenic Escherichia coli obtained from patients with and without diabetes'- under the Guidance of
Dr. H. Srinivasa, Professor of Microbiology, St. John's Medical College, Bangalore.

GRADUATE PHARMACY APTITUDE TEST SCHOLARS

N.E.T. Pharmacy college students secured top ranks in the Graduate Pharmacy Aptitude Test (G-PAT'2014) National Level Examination held in February'2014 conducted by All India Council for Technical Education, New Delhi.

Sl. No	Name of the student	All India Rank
01	Mr. Durgesh Kumar Jha	10
02	Mr. Bivek Chaulagain	90
03	Mr. Nabin Khanal	90
04	Mr. Madhav Bashyal	143
05	Mr. Jitendra Kumar Yadav	355
06	Mr. Pratap Kalita	428
07	Mr. Madan Ghimire	719
08	Mr. Abdul Kayam Al Aman	797
09	Mr. Gaurav Gupta	1596
10	Ms. Ritu Rawal	1596
11	Mr. Hemantha Pathak	1715
12	Mr. Rahul Shah	2833
13	Ms. Vasavi B T	3210
14	Mr. Subash K Chaudhary	3696

NAVODAYA INSTITUTE OF TECHNOLOGY, RAICHUR COLLEGE TOPPERS FOR THE ACADEMIC YEAR 2013-14

SL. No.	BRANCH	SEM	NAME	PERCENTAGE
1.	FIRST YEAR (ECE)	1ST	Ms. Hammera Tamkeen	77.67
2.	CIVIL	3RD	Mr. Vipin. G	67.88
3.	CIVIL	5TH	Mr. Gopinath Chapagain	79.77
4.	CIVIL	7TH	Mr. Ajay Kumar Yadav	75.44
5.	CSE	3RD	Mr. Sanjeev K	72
6.	CSE	5TH	Ms. Anusha D	67.66
7.	CSE	7TH	Ms. Pooja M. P.	71.88
8.	ECE	3RD	Ms. Soujanya Chidri	71.33
9.	ECE	5TH	Mr. Vivek Kawadi	78.77
10.	ECE	7TH	Mr. Rajeev Joshi	78.22
11.	EEE	3RD	Ms. Afreen Sultana	79.44
12.	EEE	5TH	Mr. Kiran Kumar	78
13.	EEE	7TH	Ms. Deepthi Rao	78.5
14.	ISE	5TH	Mr. Vinod	63.44
15.	ISE	7TH	Ms. Bhavana	63.88
16.	MECHANICAL	3RD	Mr. Naveen R G	75.11
17.	MECHANICAL	5TH	Mr. Pawan Ghimire	81.33
18.	MECHANICAL	7TH	Mr. Love Kishore Bista	78.11

CLASSROOMS TO CORPORATE! PLACEMENTS! PLACEMENTS!! PLACEMENTS!!!

The academic brilliance in Navodaya Institute of Technology is reflected in its student's exemplary record in placements in the corporate and engineering sectors.

NIT-R within few years of inception made an excellent recruitment record in placements. The graduates of NIT-R have been recruited by some of the top notch engineering and corporate companies and some got placed in educational institutes. Our students in NIT- R are imparted with fine blend of technical skills, interpersonal communication skills to suit the present industry needs.

The Management, Principal, Staff and Students of Navodaya Education Trust® wish them a brilliant and prosperous career.

STUDENT NAME	INDUSTRY
Mr. Hemaraj Kakati, Department of ECE	INDIAN ARMY
Mr. Jintu Mani Dekha, Department of ECE	Acer
Ms. Parveen Begum, Department of ECE	Infosys
Ms. Pooja G. Department of ECE	Appirio
Ms. Prashanth Kulkarni, Department of ECE	CapGemini
Mr. Ranganath Roy, Department of ECE	Exarcplus
Mr. Bheemu Sukumar Avaradi, Department of EEE	Flash Electronics Private Ltd.
Ms. G. Divyabharati, Department of EEE	Lecturer at Govt. Polytechnic
Mr. K. Srinivas P. Department of EEE	British Instrument and Systems
Mr. Mahendra B. Aribenchi, Department of EEE	Jamkandi Sugar Industry Pvt. Ltd.
Mr. Merla Chandrika, Department of EEE	PGI Consultancy
Mr. Md. Fasiuddin, Department of EEE	Surveying in GESCOM
Mr. Motka Sanjay Kumar, Department of EEE	Lecturer in Polytechinc College
Mr. Nagarjuna M. Department of EEE	GESCOM
Ms. Savitri K. Department of EEE	TCI
Mr. Srihari Prasad, Department of EEE	Lecturer in Nivedita Polytechinc college
Mr. Vikram Kulkarni, Department of EEE	Global System and Solution Pvt. Ltd.
Mr. Somnath H. Department of EEE	RTPS
Ms. Kumari Nandini, Department of EEE	RTPS
Mr. Rasheed M. Department of EEE	Effotronics Systems Pvt. Ltd.
Mr. Venkatesh V. Department of EEE	NIT, Raichur
Mr. Vidyadhar Rodagi, Department of EEE	Gartech Equipment Pvt. Ltd.
Ms. Y. Anusha, Department of EEE	IBM
Mr. Anilkumar, Department of CSE / ISE	HCL
Ms. Bhagyashree. C, Department of CSE / ISE	CTS
Mr. Darshan Raikar, Department of CSE / ISE	KB foundation
Ms. Shruthi .K. Patil, Department of CSE / ISE	Lecturer
Ms. Swathi, Department of CSE / ISE	KB foundation
Mr. Syed Mussavir Inamdar, Department of CSE / ISE	Webpaque
Mr. Vijay kumar, Department of CSE / ISE	IPWILE
Mr. Vinod kumar .M, Department of CSE / ISE	I C Link
Ms. Akshata PK Department of CSE / ISE	Lecturer
Mr. Pavan kumar.A, Department of CSE / ISE	KB foundation
Mr. Rajashekhar, Department of CSE / ISE	KB foundation
Ms. Shwetha, Department of CSE / ISE	KB foundation
Mr. Veeresh .M.H. Department of CSE / ISE	Synergy Publications ltd., Bangalore
Ms. Vidyashree, Department of CSE / ISE	Lecturer
Ms. Meghana.M. Department of CSE / ISE	Evoke Technologies, Hyderabad
Mr. Ruksar Taj S Department of CSE / ISE	Dell
Mr. Shruthi kasturi, Department of CSE / ISE	KB foundation
Ms. Sushma, Department of CSE / ISE	KB foundation
Ms. Usha Hiremath, Department of CSE / ISE	Bank
Ms. Shruthi. M, Department of CSE / ISE	Lecturer

RGUHS TABLE TENNIS COMPETITION: NAVODAYA GLOWS

N.E.T Pharmacy College boys team along with Navodaya Medical College girls team were selected to represent Navodaya Education Trust in the RGUHS Gulbarga Zone Table Tennis Competition. It was organized by KBN Institute of Medicine,Gulbarga. Both the boys and girls teams from Navodaya were able to outmatch ten other colleges to prove their natural excel by winning the competition. The boys team from N.E.T Pharmacy College comprised of Amit Dahal, Rabin Neupane and Ishwor Poudel whereas the girls team from Navodaya Medical College was comprised of Raksha Anand, Sadhana Adapathya and Suhasini Kulkarni were declared the winners. The presence of Navodaya Medical College boys team and PE Incharge Chandrakant was of great inspiration.

1

2

1 The winner teams were chosen to attend the RGUHS-State Level Table Tennis Competition organized by the BGS Medical College,Kengeri, Bengalore. The glittering shine of the players turned out to be unfeigned as the boys team missed the chance of getting into finals by a point however Ms. Raksha Anand was picked out for University Girl's team.

2 The guidance provided by PE incharge Chandrakant sir and the cooperation from college administration were the fulcrums to pivot the axle of this journey. We students always expect the same from the college and are sincerely grateful for the guardianship.

We are delighted to have excellent group of faculty who joined our campus in various departments. Their knowledge and experience will enrich our student's knowledge and sustain our excellence in teaching and learning. Here's an overview N.E.T's new faculty who joined us recently in the last few months

NAVODAYA MEDICAL COLLEGE

Dr. K. Ramchandra
Asso. Professor
Dept. of Orthopedics

Dr. Prabhakar Chiluveru
Asso. Professor
Dept. of OBG

Dr. Kowsalya
LMO (UHC)
Dept. of Comm. Medicine

Dr. Kaladagi P S
Professor
Dept. of Orthopedics

Dr. Jagjeevan Ram T.K
Assoc. Professor
Dept. of Gen.Surgery

Dr. Sivraj
Sr. Resident
Dept of Gen. Medicine

Dr. Mohammed Abdul Basheer
Tutor
Dept. of Comm. Medicine

NAVODAYA CENTRAL SCHOOL

Dr. Mahananda
TGT-Maths

Mr. Kariyappa M S
TGT-Social Study

Mrs. Ramya M
TGT-English

Ms. Prabhamani Lokesh
ICT-Comp. Science

Ms. Naseem Firdus
TGT-Science

Mrs.Arundhati
PRT-Maths

Ms. Prabhamani Lokesh
ICT-Comp. Science

Ms. Naseem Firdus
TGT-Science

Mrs. Muktha Devi
TGT-Hindi

Ms. Ayesha Sultana
TGT-Maths

Ms. Uma Chadrakanth
Pre Primary Teacher

NAVODAYA COLLEGE OF PHYSIOTHERAPY

Dr. Danesh D Chinoy
Assoc. Professor
Dept. of Musculoskeletal Physiotherapy

SCIENTIFIC PARTICIPATIONS FROM FACULTY OF NIT-R

Dr. Gurunath K.B., Head of the Department, Ms. Shilpa, Ms.Harsha, Ms. S. N. Begum and Ms. Habeeba, Department of Physics, Navodaya Institute of Technology attended two days KSTA Regional Conference on Science and Technology for development.

This Conference was organized by Central University of Karnataka & Karnataka Science & Technology Academy on 30-31 JANUARY 2014 at Gulbarga.

Mr. Sangamesh N. D. Assistant Professor in Dept.. of Mechanical Engineering has attended a one week National Level Workshop on "Computational Fluid Dynamics and Multibody Dynamics Simulation and Analysis" sponsored by ISTE, VTU and IEI during 19th to 23rd March 2014, organized by Dept.. of Mechanical Engineering, Bheemanna Khandre Institute of Technology, Bhalki

SCIENTIFIC PRESENTATIONS FROM FACULTY OF NIT-R

Mr. A. Velu, Assistant Professor, Department of EEE, NIT-R has presented a paper in International conference on recent advances in mechanical engineering and interdisciplinary developments (ICRAMID'14) at Ponjesly College of engineering, Nagercoil-629003 held on 7th & 8th March 2014 on the title "Hardware Implementation Of Z-Source Inverter Based On Mppt Scheme For Solar Power Conversion System".

Mr. R. Prasanna Krishna, Department of EEE, NIT-R has presented paper in the Second International Conference on Power Control and Embedded System (ICPCES-2014) at College of Engineering Guindy, Anna University, Chennai-600025 on 27th and 28th Feb 2014 on the Title " Mitigation of Voltage sag in Inter-line Distribution feeders using IDVR".

PAPER PRESENATAION

1. Self medication- Prevalence and pattern amongst medical students of Navodaya Medical College; Raichur - Dr. Anant Takalkar; Professor, Dept. of Community Medicine, Navodaya Medical College, Raichur presented in 58th Annual National Conference of Indian Public Health Association held in Tirupati 21st to 24th January 2014
2. KAP of hand hygiene amongst nursing staff of Navodaya Medical College and Hospital; Raichur by Dr. Anant Takalkar; Professor, Dept. of Community Medicine, Navodaya Medical College, Raichur presented in 58th Annual National Conference of Indian Public Health Association held in Tirupati 21st to 24th January 2014
3. Contraceptive practices and awareness of emergency contraceptives among muslim women of urban slum of Raichur; Karnataka by Dr. Anju Ade; Associate Professor, Dept.. of Community Medicine, Navodaya Medical College, Raichur presented in 58th Annual National Conference of Indian Public Health Association held in Tirupati 21st to 24th January 2014
4. Determinants and Practices of Hand Hygiene Among School Going Children In Rural And Urban Area Of Raichur by Dr. Chethana. K.V; Post Graduate, Dept. of Community Medicine, Navodaya Medical College, Raichur presented in 58th Annual National Conference of Indian Public Health Association held in Tirupati 21st to 24th January 2014
5. Menstrual Hygiene and Practices of Rural Adolescent Girls of Raichur. Dr. Anju Ade; Associate Professor, Dept.. of Community Medicine, Navodaya Medical College, Raichur. 40th Annual National Conference of IAPSM and Joint state conference of Indian Public Health Association and IAPSM, Maharashtra chapter, Government Medical College, Nagpur,22-24 January 2013.
6. "Effect of Aurum Metallicum on Adjuant-induced arthritis in albino rats" by Dr. Prabhakar Patil, Associate Professor in 46th Annual Conference of the Indian Pharmacological Society, IPSCON, Bangalore on 18th December 2013.
7. Ultrasonographic observation of anterior temporalis and masseter muscle activity in open bite patients, an in vivo study. Dr. Davis T Danny, 2ndyr post graduate, Dr. Sugareddy (Professor & H.O.D) Department of Orthodontics & Dentofacial Orthopaedics, Navodaya Dental College 18th IOS PG Convention, 2014. Meerut 27th Feb – 2nd March 2014

8. Early loss of permanent teeth – A race against time, Dr. Mayank Vallabh, 2nd year PG, Department of Pedodontics, Navodaya Dental College, 67th IDA conference at Hyderabad, 22nd feb 2014. Achievement: Selected for FDI Annual International Dental Congress along with 20 other participants.
9. Oral Health Status and Treatment Needs of Tuberculosis inpatients at Government Hospital, Raichur, Karnataka - A Cross Sectional Study, Dr. Sudarshan Chinna, 2nd year post graduate, Department of Public Health Dentistry, Navodaya Dental College, XVIII IAPHD National conference Lucknow, 22nd November 2013
10. Dentascan and its importance in Inferior alveolar nerve course. Dr. Rajiv Kumar Chowdary. K, 2nd year Post graduate, Dept. of Oral and Maxillofacial Surgery, Navodaya Dental College, 6th International Workshop in Cranio Maxillofacial Surgery, MGM Dental College, 22nd Feb 2014.
11. Microfloral Homicide. Dr. Abhishek Badade, Dr. Krishna Prasad (Professor & Head), Dr. S.V.Satish (Professor), Dept.. of Conservative & Endodontics, Navodaya Dental College. 3rd West Zone PG Convention held at PUNE, MAHARASTRA, 21st-24th MARCH 2014.
12. Catach me if you can. Dr. Angel Bhagya, Dr. Krishna Prasad (Professor & Head), Dr. S.V.Satish (Professor) Department of Conservative & Endodontics, Navodaya Dental College. 3rd West Zone PG Convention held at PUNE, MAHARASTRA, 21st -24th Mar 2014.
13. Developmental Enigma for an Endodontist. Dr. Angel Bhagya, Dr. Krishna Prasad (Professor & Head), Dr. S. V. Satish (Professor), Dept. of Conservative & Endodontics, Navodaya Dental College. 28th IACDE and 21st IES National conference held at Hyderabad on Nov 14th, 2013.
14. A Lifeline for An Avlused tooth. Dr. Abhishek Badade, Dr. Krishna Prasad (Professor & Head), Dr. S. V. Satish (Professor), Dept. of Conservative & Endodontics, Navodaya Dental College. 28th IACDE and 21st IES National conference held at Hyderabad on Nov 14th,2013.
15. Endo Beyond Sky. Dr. Basavaraj Halli, Dr. Krishna Prasad (Professor & Head), Dr. S.V.Satish (Professor), Department of Conservative and Endodontics, Navodaya Dental College. 3rd West Zone PG Convention held at PUNE, MAHARASTRA, 21ST-24TH MARCH 2014.
16. Diagnosis Demystified. Dr. Basavaraj Halli, Dr. Krishna Prasad (Professor & Head), Dr. S.V.Satish (Professor), Dept.. of Conservative & Endodontics, Navodaya Dental College. 28th IACDE and 21st IES National conference held at Hyderabad on Nov 14th, 2013.
17. Innovating Orthodontics. Dr. AppayyaHuddar, Post Graduate, Dr. Sugareddy (Professor & H.O.D), Department of Orthodontics & Dentofacial Orthopaedics Navodaya Dental College, 18th IOS PG Convention, 2014. Meerut, 27th Feb 2014 – 2nd March 2014
18. Rainbow - A solution to ease friction during sliding mechanics. Dr. Imad Mohammed, post graduate, Dr. Srinivas Reddy. K (Professor), Dept.. of Orthodontics & Dentofacial Orthopaedics, Navodaya Dental College, 18th IOS PG Convention, 2014. Meerut, 27th Feb 2014 – 2nd March 2014
19. Tata Caries; Hello Nano. Dr. Mudasser Mohammed, 2nd year PG, Department of Pedodontics, Navodaya Dental College. 8th Feb 2014. ISPPD PG convention Chandigarh
20. Bracketless fixed orthodontics – An innovative approach. Dr. S. V. Ramesh Goud, 1st year post graduate, Dr. Sugareddy (Professor & H.O.D), Department of Orthodontics & Dentofacial Orthopaedics, Navodaya Dental College, 18th IOS PG Convention, 2014. Meerut, 27th Feb 2014 – 2nd March 2014
21. Quench your thirst. Dr. Mayank Vallabh, 2nd year PG, Department of Pedodontics, Navodaya Dental College. ISPPD PG convention Chandigarh, 8th Feb 2014
22. Natural Polymers - Promising Potential in Drug Delivery Prakash Goudanavar and Doddayya Hiremath, Dept.. of Pharmaceutics, N.E.T. Pharmacy College, Raichur, Science and Technology Academy, University of Agriculture Sciences Raichur, Regional Conference.
23. Formulation and in vitro evaluation of mouth dissolving tablets of Flunarizine dihydrochloride, Surendra Sharma and Dr .H Doddayya, N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
24. Development and Characterization of nasal mucoadhesive microspheres of Ropinirole hydrochloride for brain targeting. Bigyan Gurung and Dr. H Doddayya - N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
25. Perindopril erbumine loaded ethanolic liposomes: Design and Characterization. Gobind kumar and Mr. Prakash Goudanavar - N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
26. Formulation and in vitro evaluation of gastro-retentive drug delivery system of Repaglinide. Anant S Verma and Mr. Sarfaraz Md. - N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
27. Formulation and in vitro characterization of fast dissolving tablets of Ketorolac tromethamine. Bivek Chaulagain and Mr. Prakash Goudanavar -- N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
28. Prescription audit with special emphasis on drug – drug interactions study in a tertiary care teaching hospital, Ajay

Chandra and Dr. Bheemachari. -- N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.

29. A study on prevalence of diabetes and hypertension in south Indian population, Kalyan C and Mr.Binu K.M - N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
30. Incidence and Severity of intravenous medication errors in a tertiary care teaching hospital, Md Iliyas and Mr. Binu K.M - N.E.T. Pharmacy College, Raichur, 65th Indian Pharmaceutical Congress held at Amity University Noida, New Delhi from 20th to 22nd December 2013.
31. A Case Report on 13- year old child with Amoxicillin Induced Stevens- Johnson Syndrome (SJS) Binu Mathew, Ashok Malpani, H. Doddayya NET Pharmacy College, Indian Congress of pharmacy Practice 2014 , & Inaugural Convention of the Indian Association of Colleges of Pharmacy, " Advancing Pharmacy Practice in India : The Next Generation Pharmacist" on 21st & 22nd of February, 2014. Bangalore, Karnataka.

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2. Dr. Rajani Ranganath, Dr. G. S. Vijay Kumar, Dr. Veereabhadra Javali, Dr. Ravi Ranganath ; Line probe assay as a rapid tool for detection of MDRTB; Annual Research & Review in Biology; 4(1): 246-257
3. Dr. Shrinivas Kalliguddi, Dr. Veerabhadra Javali and Dr. Reneesh UP Research Proximal Femoral Nail in the Mangement of Peritrochanteric Fractures Femur and its Functional Outcome; International Journal of Research in Pharmaceutical and Biomedical Sciences, 4 (4); Oct – Dec 2013 : 1276- 1286
4. Dr. Abhi Pray Gahlowt, Dept. of Orthopedics, Navodaya Medical College, Correlation of Immunoglobulin Receptor Concentration on Colonocytes with Gastrointestinal Beneficial Microbes in the Pediatric Patients of Diarrhea. Microbiology – All India Institute of Medical Sciences, New Delhi.
5. Anju Ade, Ramesh Patil. Menstrual Hygiene and Practices of Rural Adolescent Girls of Raichur. International Journal of Biological & Medical Research, 2013; 4(2):3014-3017.
6. Dr. Revathi S, Dr Anju Ade, Dr Chetana KV, Dr. S. G. Hiremath. A cross- sectional study of utilization pattern of postnatal services in urban slums of Raichur city, Karnataka, India. Journal of pharmaceutical and biomedical sciences 2013 November; 36(36):1909-1914.
7. Dr. Anju Ade, Dr. Chethana K V, Dr. Abhay Mane, Dr. S G Hiremath. Non-communicable diseases: Awareness of risk factors and lifestyle among rural adolescents. International Journal of Biological & Medical Research 2014 ;(1)3769-3771.
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9. Dr. Anju Ade, Dr Revati S, Dr. Arun Kulkarni Reproductive health profile and health seeking behavior among muslim women of urban slum of Raichur, Karnataka. International Journal of Research in Health Sciences. Vol 2, Issue 2, April-June 2014.
10. Dr. Mahalakshmi VV, Dr. Vinay Hajare, Department of Microbiology ,NMC, Raichur, Prevalence and Antibiogram of Extended Spectrum β-Lactamase Producing E-Coli, kelbsiella and Pseudomonas Species From Clinical Isolates In a Tertiary Care Hospital. Research Journal of Pharmaceutical, Biological and Chemical Sciences. Volume 5, Issue 2, March –April 2014 , Page No.258 - 274
11. Dr. Gagan Y.M, Dr. Taklikar Anupama, Taklikar Dr. R.H. Takalkar A. Awareness of eye donation among paramedical students. National Journal of Medical Sciences Jan 2014; Vol-3, Issue-1: 65-67.
12. Dr. S.Ramabhimaiah, Prof. & Head, Dept. of Pharmacology, Navodaya Medical College Antidiabetic activity of aqueous extract of Cinnamon in alloxan-induced diabetic rats. Biomedical & Pharmacology Journal, 06 (1), 2013.
13. Dr. S.Ramabhimaiah, Prof. & Head, Dept. of Pharmacology, Navodaya Medical College.Anti-inflammatory activity of Raphanus Sativa L, in acute and chronic experimental models in albino rats. Biomedical & Pharmacology Journal, 06 (1), 2013.
14. Dr. S.Ramabhimaiah, Prof. & Head, Dept. of Pharmacology, Navodaya Medical College. Beneficial effects of vegetable oils (rice bran & mustard oils) on anti-inflammatory and gastrointestinal profiles of indomethacine in rats. Biomedical & Pharmacology Journal, 06 (02), 2013.
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18. Dr. Rohit Dixit, Assistant Professor, Dept. of Pharmacology, Navodaya Medical College.Evaluation of anti-nociceptive activity of aqueous extract of Sapindus Trifoliatus in rodents. International Journal of Phytopharmacy Research, 5 (1), 2014.
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21. Dr. Ramesh, Dept. of Community Medicine, Navodaya Medical College, Knowledge, attitude and practice of hand hygiene among medical and nursing students at a tertiary health care centre in Raichur, ISRN Preventive Medicine -2014.
22. Dr. Sudha Biradar K, Dr. Surpur R, Navodaya Medical College, Asymptomatic bacteriuria among pregnant women. Int J Reprod Contracept Obstet Gynecol 2013; 2:213-6.
23. Dr. Sudha Biradar, Associate Professor in OB/GYN, Navodaya Medical College. Prevalence and Pattern of Mineral Bone Disorder in Chronic Kidney Disease Patients Using Serum Levels of Alkaline Phosphatase, 25-Hydroxy Vitamin D and Parathormone. International Journal of Health Sciences and Research
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Engineer ? Designer ?

She's Both...

Engineers are gifted with immense and fine talents making them more and more creative. Ms.Nishath Sherin, IV Sem, Dept of Computer Science & Engineering, Navodaya Institute of Technology has ingenious talent adored by many of her friends and faculty. While learning the computer coding languages and programs, she strokes brilliant and dazzling dress designs. Consistent patterns with gleaming colors are her signature dress designs and every smart looking girl long for her dress design to look more beautiful like an angel. Some of Nishath Sherin collections are featured here :

GOOGLE genoodle competition winner

Mr. Hemanth Kulkarni, sixth sem, Dept. of Computer Science & Engg, Navodaya Institute of Technology had participated in National level tech-fest "GENESYS V5.0" organized by Gogte Institute of Technology, Belgaum. Mr. Kulkarni participated in the Google genoodle competition in the tech fest and secured first place for his doodle art.

His doodle art depict the theme of Incredible India representing various blend of Indian diversity.

COLOR CANVASS

Ms.Sneha, IV Semeste, Department of Computer Science & Engineering, Navodaya Institute of Technology is blessed with immense talent in visual arts giving life to color canvas. Her works are awesome literally a wonderful work to behold in our eyes and soul. She has many collections of her masterpieces at home, such that she can conduct an exhibition on her paintings.

Her majority of works encounters the sublime rural poetry, drama of the nature and the land with vivid account details. Her charismatic and splendid works are featured above.

MAKING THE DIFFERENCE IN HEALTH CARE

The huge gap between access to quality health care and under privileged population exists everywhere. Navodaya Education Trust® always bridges the gap between the quality health care and poor ever since its inception shouldering the social responsibility. Reaching the unreached is a boon for the under privileged and we tend to change the lives of the poorer sections of people at their door step. The department of community medicine along with medical social workers, students and volunteers from our NSS unit of Navodaya Medical College spearheaded this noble cause and rendered their services to the sick at their door steps. This is being facilitated through regular conducted of free health camp of free health camps, awareness program & campaigns.

VILLAGE HEALTH CHECKUP CAMPS

Place of camp	Date	Total Persons Benefited
Bhapur	06/01/2014	451
Y.Mallapur	22/01/2014	340
Vadlamdoddi	10/06/2014	309
Devanapalli	18/06/2014	406
	TOTAL	**1506**

SCHOOL HEALTH CHECKUP CAMP

Place of camp	Date	Total Persons Benefited	Referrals
Govt. Primary School, Y. Mallapur	21/01/2014	54	28
Govt. School, Vadlamdodddi	09/06/2014	75	47
Govt. School, Devanpalli	17/06/2014	185	126
	TOTAL	**314**	**201**

MUSTARD MANGOES PHOTOGRAPHY

Christy Thomas, Pharm. D student from N.E.T. Pharmacy College got equally allured to drugs and lens. He studies about the drugs in the college and next he loves photography. When asked, he simply said "I don't take photographs, I make it; literally capturing the present moment to the future." His passion developed from the past era of camera rolls to present era of SLR's. His family supported his enthusiasm and his wonderful dad taught him the nitty-gritty of the camera, lights, shades and colors.

Which of my photographs is my favorite?
The one I'm going to take tomorrow. – is one of his favorite quotes.

His signature photographs are available as Mustard Mangoes Photography online.

SOCIAL RESPONSIBILITY OF NAVODAYA EDUCATION TRUST®

Navodaya Education Trust ® - Raichur organized higher education seminars for Pre University College students in Raichur and Yadgir districts. The two hour seminar focused on the importance of higher education, various courses in higher education streams and prospective job opportunities after higher education to the second year PU students. The seminar session also highlighted the benefits of special status accorded to Hyderabad – Karnataka Region in terms of education and employment. This seminar was delivered in various taluk places of Raichur and Yadgir districts benefitting thousands of students from rural and economically background sections in association with leading English Newspaper – The Hindu and Kannada Newspaper – Vijayavani.

Sl. No.	Date	Place & Venue	No. of PU Colleges Participated	No. of Students attended
1.	28th Dec 2013	Dr. C. M. Gurumurthy Hall, NMCH&RC, Raichur	08	282
2.	08th Feb 2014	Govt. PU College, Maski	05	315
3.	10th Feb 2014	Vasavi Kalyana Mantap, Sindhanoor	10	612
4.	10th Feb 2014	Basavasabha Mantapa, Lingasugur	08	546
5.	10th Feb 2014	Kalmata Guru Bhawana, Manvi	06	781
6.	15th Feb 2014	Sri Veershaiva Kalyana Mantapa, Yadgir	05	182
7.	15th Feb 2014	Sri Basaveshwar Kalyan Mantap, Shahpur	04	345
8.	15th Feb 2014	Sri Veershaiva Kalyana Mantapa, Surpur	05	398