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01	Message from CMD
02	Foreword
03	Allergy in ENT
06	Voice Disorders
09	Deafness in Children
14	Adenotonsillitis
17	Sleep Disorders
20	Head and Neck
24	Preserve the power of self healing
26	Agada Lifestyle
27	Fungus in Sinus
29	Discharging Ear
32	Sinusitis
37	Swallowing
39	Tinnitus – Management
43	Fitness Section
46	Recipe Corner
47	Free Expert Medical Consultation

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Message from CMD



My dear policyholder,

The current issue covers the topic on diseases related to ENT. You will kindly observe that the articles contributed by eminent Doctors will serve as a guide book for whomsoever when needed. As usual we function for your comfort and we are always open to receive your communication about any deficiency in our services.

With your kind support, I am sure, your company will grow further and will always stand by your side to serve you.

V. Jagannathan
Chairman-cum-Managing Director

Foreword

Prof. MOHAN KAMESWARAN
Madras ENT Research
Foundation, Chennai



ENT is a specialty with common ailments which affect one and all. No single individual can live a life without suffering from an ENT ailment at least once a year. No family exists without an ENT disease. Around one out of six patients attending any Government Hospital, will be having an ENT complaint and at least 20% of the symptoms encountered by the Pediatrician, is directly or indirectly related to ENT ailments.

In spite of substantial and path-breaking advances made in recent times in the medical field, it is not uncommon for a doctor to see patients with misconceptions, unscientific convictions and firm but wrong beliefs about ENT diseases. This issue tries to address many of the common ENT complaints in a simple, lucid and readable fashion. The contributors are all surgeons of great repute, who have vast experience in dealing with a myriad of ENT disorders. They have put in their best efforts to update the readers with a comprehensive overview of the spectrum of ENT diseases, current management trends and preventive measures.

It is my hope that this issue will go a long way in addressing the common concerns of many individuals with ENT ailments and at the same time will provide an avid scientific insight into their prevention and management.



Season of sneezes and runny nose Allergy in ENT

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Allergy is the reaction of a healthy subject to an unhealthy environment. The immune system is hypersensitive to a potential invader (allergen). The incidence of allergy is increasing due to modern lifestyle and afflicts 30–40% of the population.

- ▶ While people may have a genetic predisposition to allergies (atopy), there are several environmental triggers.
- ▶ Irritants in the atmosphere like cigarette smoke
- ▶ Chemicals
- ▶ Temperature changes
- ▶ Strong smells
- ▶ Stress
- ▶ Other factors may provoke rhinitis in people susceptible to allergies. Dust mites are very common allergens and feed on organic material.



Fig.2: Fungus



Fig.3: Pet Dander

Manifestations of allergy vary from person to person. The commonest system to get affected is the respiratory system resulting in nasal allergy (allergic rhinitis) or asthma. Rhinitis is a swelling of the mucous membrane of the nasal passages due to irritation. (Fig.4) The immune system reacts to the allergen by production of protective antibodies called immunoglobulin E and the release of several chemicals such as histamine which result in all the symptoms of allergic rhinitis. The skin (allergic dermatitis), eyes (allergic conjunctivitis), and gastrointestinal tract may get affected. (Fig.5)



Fig.4: Allergic Rhinitis



Fig.1: Cockroach

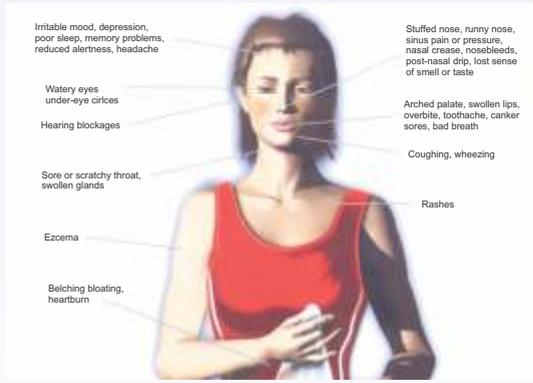


Fig.5: Allergic manifestations involving various systems of the body

Anaphylaxis is severe allergy causing a catch in the throat, breathing difficulty, swelling of the eyes, lips and face and may be life-threatening unless treated immediately. However, the chronic form of allergy is fortunately more common. A patient with allergy involving the ear, nose and throat may have runny nose, frequent or repetitive sneezing, nasal blockage, postnasal drip, cough, facial pain, nasal bleed, loss of smell, sore throat, hoarse voice, itchy eyes, and boggy swellings under the eyes. Tissue swelling in the nasal passages, nasal polyp formation, sinus obstruction and sinusitis may occur. Migraine headaches may be triggered by nasal allergies. Fungus is a ubiquitous inhabitant of our planet. (Fig.6) Allergy to fungus can result in a sinister disease called allergic fungal rhinosinusitis (AFRS), (Fig.7,8) which if left untreated may be life threatening because of its tendency to erode bone and spread outside the sinuses. The disease can spread from the nasal passages and sinuses into the eye and brain.



Fig.6: Aspergillus (fungus)



Fig.7: Allergic fungal rhinosinusitis

Allergy can also affect the outer ear (external otitis) and middle ear (middle ear effusion or fluid

in the ear). Ear infections occur due to blockage of the Eustachian tube, which connects the middle ear with the nasopharynx (back of the nose).

Fig. 9: Fluid in the middle ear secondary to nasal allergy

Allergy is a trigger for asthma. The chemicals which are released on exposure to an allergen can cause severe irritation, itching, swelling and spasm of muscle leading to tightening of the lungs resulting in asthma. More than 40% of patients with allergic rhinitis have symptoms of asthma and uncontrolled nasal allergy may cause worsening of asthma.

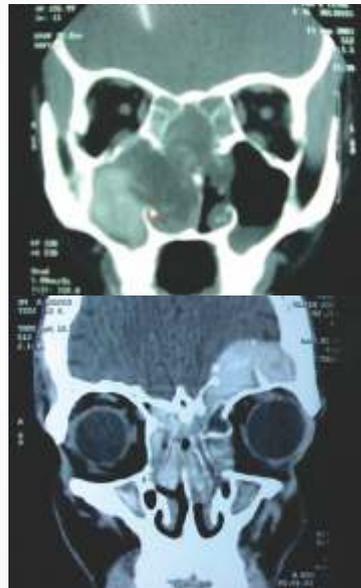


Fig.8: CT scan of a patient with allergic fungal rhinosinusitis

Allergies may be a mild inconvenience for some people while in others it can significantly affect the quality of life. Since 80% of allergy sufferers are less than 40 yrs of age, allergy can have a significant impact on productivity. Allergy can affect a child's sleep, concentration, hearing, appetite and growth and can cause learning difficulties and fatigue. Chronic nasal obstruction

can affect a child's appearance.

Allergy is diagnosed by a thorough history taking, including a family history as allergic tendency has a genetic component. Endoscopy of the nose blood tests such as eosinophil count or Radio Allergo Sorbent Test (RAST) which measures the quantity of specific antibody to a particular antigen (allergen) may be required. A skin test is a simple test for detecting reaction to specific allergens.

Management of allergy; present day scenario:

Allergy can be managed effectively and a person suffering from allergies does not have to suffer life long from this problem. The goal of treatment is to reduce allergy symptoms. The treatment of allergic rhinitis consists of three major categories of treatment: environmental control measures, and allergen avoidance, medicines and immunotherapy. In mild allergic rhinitis, reducing exposure to allergens may be sufficient. For dust mites, covering the mattress and pillows with impermeable covers helps reduce exposure. Bed linens should be washed frequently in hot (atleast 130°F) water to destroy the mites. Wet mopping of the home, using vacuum cleaner & air conditioning and avoidance of carpets can significantly reduce allergen levels. Exposure to non-specific triggers such as smoke, strong perfumes, and scents, rapid changes in temperature, fumes and outdoor pollution must be avoided or reduced. In patients in whom these measures are not effective, medication such as decongestants and antihistamine tablets relieve nasal congestion,



Fig.9 Allergy - a trigger for asthma

sneezing and itching. Topical decongestants (nasal drops) may be helpful in reducing symptoms such as nasal congestion but should not be used for long periods as they can lead to a rebound nasal congestion and are associated with side effects if used for prolonged periods. The newer generation drugs for allergy have the advantage that they cause negligible drowsiness in comparison to previously available drugs. Corticosteroid nasal sprays reduce inflammation and are extremely effective in relieving the symptoms of nasal allergy. Immunotherapy may be given to people over seven whose allergies are severe and do not respond to medication and allergen avoidance. Immunotherapy involves exposing the allergy sufferer to substances to which he / she is allergic in gradually increasing concentrations. The immune system then becomes tolerant to the allergen. Immunotherapy is commonly used in patients suffering from allergic rhinitis, allergic asthma or insect allergy, if the allergen cannot be avoided. Although expensive, patients may eventually save money on medications. Currently immunotherapy is available as Sublingual Immunotherapy (SLIT) where in the administration is by oral route and there are no injections involved. It is safe, long lasting and reduces the severity and frequency of attacks. Self administration reduces the necessity of trips to the hospital. Surgery may be needed for certain causes of mechanical obstruction such as nasal polyps and sinusitis. A new class of drugs to modulate allergy may be available in the near future. Thus though allergic diseases may be the modalities and management is keeping pace.

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Voice Disorders



In spite of the advances in modern technology, the very essence of effective human communication and emotion, is conveyed through the spoken word. Like fingerprints, every single individual's voice is unique, which gives quality and depth to our personality. It plays a vital role in mankind's progress. Thus depending on one's age and profession our voice plays a big part in who we are, in what we do and how we communicate.

Any condition that affects the performance of the voice-producing organ – the **larynx** can cause a **Voice disorder**. The most common conditions

- ▶ Cyst
- ▶ Polyps
- ▶ Nodules
- ▶ Reflux laryngitis and
- ▶ Cancer

These conditions usually cause the subtle changes in voice like hoarseness, voice breaks, limitations in changing the pitch and loudness, voice fatigue or discomfort and deterioration with prolonged use, and constant throat clearing.

Since the voice is used by different individuals to meet different demands and situations, treatment for voice disorders varies depending on the cause. Most voice problems can be successfully treated when diagnosed early. Some common voice related conditions are detailed below:

VOCAL CORD CYST

A cyst is a mass made up of a collection of material, usually mucus that is surrounded by a membrane. Cysts occur at the midpoint of the vocal cord, which suggests that the physical stress resulting from voice use, may contribute to their formation. Cysts are not precancerous or cancerous lesions. They are important purely because of their effect on the voice. Voice rest is often prescribed in cases of hoarseness, may improve the voice somewhat, but is not likely to make a cyst go away. Voice rest serves to soften and dissolve associated swelling, but the cyst itself will not usually shrink. A cyst must be removed surgically by means of microlaryngoscopic surgery.



Fig. 1: Left Vocal cord cyst

VOCAL NODULES (Singer's or Teacher's Nodule)

Nodules are symmetric, broad-based masses which occur at the midpoint of both vocal folds. It is a fact that nodules are found almost exclusively in young women and pre-adolescent boys, which suggest that laryngeal size, may also be a factor that predisposes to nodule formation. It is a known problem of professional and amateur singers. Nodules generally cause painless hoarseness. People with vocal nodules typically find their voice worse after cheering at a game, or an evening out with friends, or a strenuous vocal performance. Voice rest and voice therapy is the mainstay of treatment for nodules. Microlaryngoscopic surgery may occasionally be needed for those not recovering with voice therapy.



Fig. 3: Vocal Nodules

LARYNGOPHARYNGEAL REFLUX

Laryngopharyngeal reflux (LPR) describes the backward (upward) flow of digestive acid and enzymes from the stomach through the esophagus to the level of the vocal folds. Reflux is significant because the acid and enzymes that reach the larynx cause injury and irritation. The larynx is damaged by contact with stomach fluids. Reflux causes irritation and swelling of the larynx. It represents a problem that must be controlled through dietary measures and sometimes medication. Food which is greasy, fatty or very sugary tends to make reflux worse, as does alcohol, caffeine and nicotine. In addition to avoiding specific foods, it is important to eat smaller meals, and to eat earlier, at least three hours before lying down to sleep. In severe cases, particularly when there are nighttime symptoms, raising the head of the bed may be helpful. Medical treatment of reflux should be

undertaken in conjunction with behavioral measures in order to be effective, and in consultation with a physician.

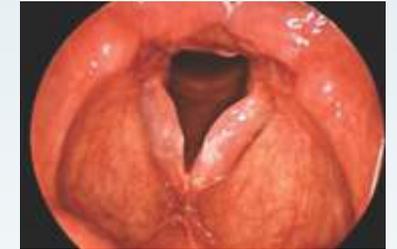


Fig. 4: Redness and swelling of both the vocal cords and the surrounding area in LPR

LARYNGITIS

Laryngitis means inflammation of the vocal cords. Symptoms of Laryngitis are hoarseness that gets worse with voice use and pain in the throat. Sometimes there may be fever and cough. Initial measures to treat laryngitis are largely a matter of common sense: voice rest and stay well-hydrated. In most cases, this will be enough to shake off a viral infection. If there is a cough that produces a yellow - or green - colored sputum, or a coating in the back of the throat, there may be a bacterial infection that warrants antibiotics.

LARYNGEAL CANCER

Laryngeal cancer, like other cancers, is a change of normal tissue to tissue that grows uncontrollably. The first symptom is change in voice. Laryngeal cancer is one which can be diagnosed early and treated completely. Smoking is responsible for the overwhelming majority of laryngeal cancers. Alcohol intake will aggravate incidence of Laryngeal cancer. Laryngeal cancer can occur occasionally in nonsmokers also.



Fig. 5: Laryngeal Cancer

The treatment options for a laryngeal cancer are determined by its size and extent. Laryngeal cancer may be treated by means of radiation, surgery, chemotherapy, or a combination of these.

LARYNGEAL PAPILOMA

A papilloma is a warty growth of the larynx caused by a virus. Different types of the same family of viruses cause similar growths elsewhere in the body. The papilloma virus is probably transmitted from person to person by intimate contact. Some people may carry the virus unwittingly without developing symptoms, so understanding transmission is not straight forward.

VOCAL FOLD PARALYSIS

The paralysis is immobility of a vocal cord because of damage or dysfunction of its nerve supply. This nerve travels from the brain down the neck and into the chest before turning upwards back to the larynx. So the same can be damaged anywhere in its long route. This can be unilateral (one-sided) or bilateral (two-sided). The treatment depends upon the cause.

Investigations done to identify Voice Disorders

VIDEO LARYNGOSCOPY

This is an efficient method to examine the larynx and to plan further treatment. This is an outpatient procedure done in a sitting posture after a local anesthetic. This gives a gross appearance of the entire larynx.

STROBOSCOPY



Fig.7: Stroboscopy

This investigation is also an outpatient procedure after a local anesthetic. This gives much more precise information about the movements of the vocal cord.

VOCAL HYGIENE

- ▶ Increase fluid intake: optimal is 2.2 liters (women) 3 Liters (men) per day.
- ▶ Avoid excessive or frequent throat clearing try sipping water instead.
- ▶ Frequent throat-clearing or coughing can be injurious to the vocal cords.
- ▶ Excessive cough, mucus production, or throat clearing may be an indication of an underlying disorder such as Laryngopharyngeal Reflux.
- ▶ Get plenty of sleep. Fatigue can cause the voice to sound hoarse.
- ▶ Use plenty of breath support. Your lungs are the generator of the voice. Take advantage of them.
- ▶ Do not speak in sentences that are too long. This causes you to vocalize with inadequate breath support at the end of your air stream. Shorter sentences with a deep breath in between optimize breath support.
- ▶ Minimize caffeine, alcohol and dairy intake. These can dry out the vocal cords and/or create thick mucus.
- ▶ Avoid menthol throat lozenges. These can dry the throat.
- ▶ Avoid smoking.
- ▶ Be aware of background noise. Raising your voice above others in a loud environment can cause straining and vocal abuse.
- ▶ While speaking, if there is throat discomfort, pain, vocal fatigue or experience "cracking" of the voice, consult your laryngologist.

Thus the human voice should be given due respect and necessary treatment initiated in case of voice disorders, in order to communicate effectively.



DEAFNESS

in CHILDREN

Current Status in Diagnosis and Management

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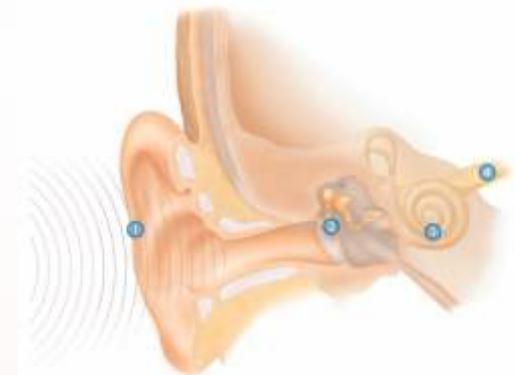


Introduction

The sense of hearing is perhaps the most important of all the five special senses which we humans possess.

Unfortunately, deafness is a silent handicap, with millions of people in India suffering from varying degrees of hearing impairment. Loss of hearing in childhood results in a double tragedy since it leads to delayed speech and language development. The end result of congenital deafness is a "Deaf and Dumb" individual living within his deaf world, with no means of verbal communication.

- ▶ General awareness level among public to recognize loss of hearing at the earliest and seek appropriate medical help needs to be increased.
- ▶ Initiatives like Government's Health Department 'National Program for Prevention and Control of Deafness' – NPPCD are welcome.
- ▶ As per the recent WHO report, India has a population of over 1 billion, of which nearly 3 million children are affected by deafness of varying degrees. Every year around 25,000 children are newly diagnosed with deafness.



1. Sound moves through the ear canal and strikes the eardrum.
2. Sound waves cause the eardrum to vibrate, sending the bones in the middle ear into motion.
3. This motion causes the fluid inside the inner ear (cochlea) to move the hair cells.
4. Hair cells change the movement into electric impulses, which are sent to the hearing nerve into the brain; you hear sound.

Hearing impairment occurs due to abnormalities in the structure or functioning of the outer ear, middle ear, inner ear or the auditory pathways. Deafness is therefore classified as conductive, sensorineural and mixed. A good history, clinical examination and full audiological evaluation is essential to determine the cause of deafness. The management of hearing impairment in

children depends on the cause and it may require a multidisciplinary team including the ENT Surgeon, Pediatrician and Audiologist.

SENSORI-NEURAL HEARING LOSS (NERVE DEAFNESS) IN CHILDREN

Deafness is the commonest congenital anomaly to affect the children in Indian sub-continent. Incidence of sensori-neural deafness among children is about 1:1500 to 1:2000 in the Indian sub-continent. Around 50% of these children are born deaf & are not identified until about 18 months old, while 25% are still left undiagnosed at 3 years of age. Such late diagnosis can have a devastating effect on their speech and language acquisition, social skills & communication development, which can last a lifetime. Early and appropriate intervention is needed. Now the technology has advanced to the level of objectively determining a child's hearing status within few hours after birth. Signs of delayed speech & language development are a strong indicator of hearing loss in children.

CONGENITAL (GENETIC) DEAFNESS

Nearly 50% of sensori-neural hearing impairment in children is due to genetic factors (congenital deafness).

ACQUIRED INNER EAR DEAFNESS

This is due to maternal ingestion of teratogens / Ototoxicity, intrauterine infections (Rubella, Cytomegalic inclusion disease, Toxoplasmosis, Influenza, Herpes 1 and 2 & Syphilis), perinatal causes such as prematurity, anoxia, kernicterus, ototoxic medication & meningitis. Maternal alcoholism-nutritional disturbances, endocrine disease - maternal thyrotoxicosis, diabetes & immunologic disorders are also etiological factors.

DIAGNOSIS OF SNHL IN CHILDREN

Suspected hearing loss is to be evaluated early in childhood.

- ▶ Relevant family history
- ▶ Birth history
- ▶ Perinatal events
- ▶ Developmental milestones

- ▶ Signs of delayed speech & language development are a strong indicator of hearing loss in children
- ▶ Detailed ENT history & examination is essential. A complete review of all organ systems for abnormalities suggesting a syndrome should be performed

MANAGEMENT OF SENSORI-NEURAL (NERVE) DEAFNESS

Till date the use of hearing aids formed the mainstay of treatment even with significant improvement; still there are children who do not have any benefit from powerful hearing aids and these are the ideal candidates for receiving implantable hearing devices. With the introduction of surgically implantable hearing devices such as cochlear implants and brainstem implants, significant strides have been made in rehabilitation of hearing loss. This has been made possible due to new diagnostic and treatment modalities and the development of materials that are biocompatible.

COCHLEAR IMPLANTS

Cochlear Implant (Bionic Ear) is an electronic hearing device, designed to produce useful hearing sensations by electrically stimulating nerves inside the inner ear. Cochlear implant bypasses the damaged hair cells of the cochlea (inner ear) and directly stimulates the nerve of hearing. It is useful in patients who have severe-profound hearing loss in both ears (due to various reasons) and who do not benefit from hearing aids.

General Practitioners need to identify profound deafness at the earliest and refer such individuals to an implant clinic for an evaluation. The evaluation at the Cochlear Implant Clinic, will be done by an implant team (an otolaryngologist and audiologist). Special X-rays are taken, usually computerized tomography (CT) or magnetic resonance imaging (MRI) scans, to evaluate the inner ear anatomy. The anesthesiologist will give a comprehensive physical examination in order to identify any potential problems with the general anesthesia needed for the implant procedure. To rule out

syndromic associations, children born with hearing impairment are also routinely evaluated by an eye specialist prior to implant surgery and by a child specialist for immunization.

The surgery of cochlear implantation is a microscopic ear surgery done under general anesthesia and usually lasts for 2 – 3 hours. It involves an incision behind the ear to open the mastoid (bone behind the ear). After the surgery, the post-op course is usually uneventful and the implantee gets discharged 72 hours after the procedure. Switch-on of the device is planned 3 weeks after implantation. The implantee has to visit the hospital periodically after the cochlear implant surgery for mapping and habilitation.

Some implants take longer to fit and require more training. Implant team will ask the individuals to come back to the clinic for regular checkups and readjustment of the speech processor as needed. All implantees have to mandatorily undergo auditory verbal habilitation with well trained & experienced teachers, for a minimum period of one year after surgery.

Cochlear implants in India

- ▶ Available worldwide since 1980s.
- ▶ However, in India, they were introduced in the 1990s.
- ▶ In the last decade, increasing awareness regarding the benefits of cochlear implant technology has led to an increase in the number of cochlear implantees in India.
- ▶ Only around 10,000 children have received cochlear implants in India till date, while an enormous number of approximately 1 million children are affected with profound deafness in our sub-continent.
- ▶ The major factor deterring the use of this advanced sophisticated technology to one and all, is its cost factor. These implants are manufactured abroad and need to be imported at a high price ranging from 6 to 10 lakh rupees.
- ▶ Many needy children from the below poverty line have benefitted with cochlear implants today, due to significant monetary aids given

by charitable trusts (eg: MERF Charitable Trust), Philanthropists, bank loans and well wishers, but large scale funding is the need of the hour to implant, the huge number of deaf children in India.

- ▶ Madras ENT Research Foundation (MERF) has been in the forefront of the Cochlear Implant scenario in India with a series of more than 400 implants till date.
- ▶ Today MERF has one of the largest Cochlear Implant clinics not only in India, but in the whole of South Asia. The first series of Totally Implantable Hearing Devices in this part of the world were also performed successfully at MERF last year.



1. External speech processor captures sound and converts it into digital signals
2. Processor sends digital signals to internal implant
3. Internal implant converts signals into electrical energy, sending it to an electrode array inside the cochlea
4. Electrodes stimulate hearing nerve, bypassing damaged hair cells, and the brain perceives signals; you hear sound



External and Internal components of a Cochlear Implant

Auditory Brainstem Implants

Auditory Brainstem Implant is an effective means of hearing rehabilitation in candidates with tumors involving both the nerves of hearing or absent nerves of hearing, where in a cochlear implant cannot be performed. The ABI allows patients to experience improved communication as well as access to environmental sounds.



The Auditory Brainstem Implant



X-ray picture of a child with Auditory Brainstem Implant

CONDUCTIVE DEAFNESS

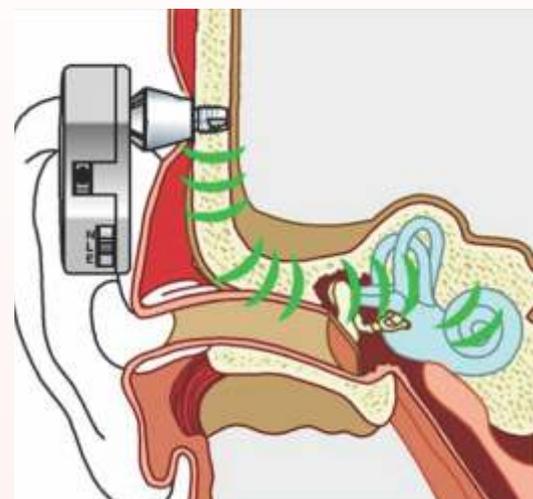
Conductive deafness occurs due to any lesion of the external or middle ear. Although there are several causes, the most common causes are

- i. Otitis media with effusion and
- ii. Chronic suppurative otitis media.
- iii. Conductive deafness may also occur due to congenital disorders such as Down's syndrome, Crouzon disease, Marfan's syndrome, Treacher Collins syndrome, Pierre Robin syndrome, Apert's syndrome, Achondroplasia, cystic fibrosis, immotile cilia syndrome, mucopolysaccharidosis and cleft palate.

Otitis media in children may present in various ways. The condition must be identified and treated early in order to prevent the long term sequelae and complications of otitis media. A complete ENT examination and audiological & radiological work up is required. Otitis media must be excluded in any child with delay in speech and language and behavioral problems.

Bone Anchored Hearing Aids

Bone Anchored Hearing Aids (BAHA), are useful in children with hearing loss due to absent outer ear canals and chronic ear infections, who cannot wear a conventional hearing aid. Sound is conducted through the skull bone bypassing the outer and middle ear and stimulates the inner ear.



Bone Anchored Hearing Aid

mandatory for every child birth. This protocol is also advocated by our Central Government through its 'National Program for Prevention and Control of Deafness' and is being performed in leading hospitals across our country today.

In the near future, this technology should propagate onto all rural health centers and only then the real prevalence of congenital deafness in our one billion strong Indian population, would come to light. A Holistic effort by our Government, all our medical fraternity and our responsible society, can make a remarkable transition in the lives of our deaf children, bring them out of the gloomy world of silence, onto the vibrant world of sound.

CONCLUSION: present scenario

- ▶ The importance of early detection and management of deafness in children cannot be overemphasized.
- ▶ Identification of the type and cause of deafness has to be done meticulously as successful management varies.
- ▶ Hearing loss is a double tragedy especially in the newborn, as it leads to not only deafness but also Mutism.
- ▶ Hearing loss is the only truly remediable handicap and the mantra is "Early detection and management".
- ▶ Children born deaf must be brought to the ENT surgeon at the first suspicion of deafness to enable timely intervention.
- ▶ In our society, preventable causes of deafness such as excessive noise exposure due to traffic, movie houses, crackers, loudspeakers and industrial noise must be addressed because noise damage is cumulative.
- ▶ The problem of consanguinity (marriage between close relatives) resulting in children being born deaf and deafness running in families also needs to be addressed.
- ▶ The western world has made newborn hearing screening with OAE testing

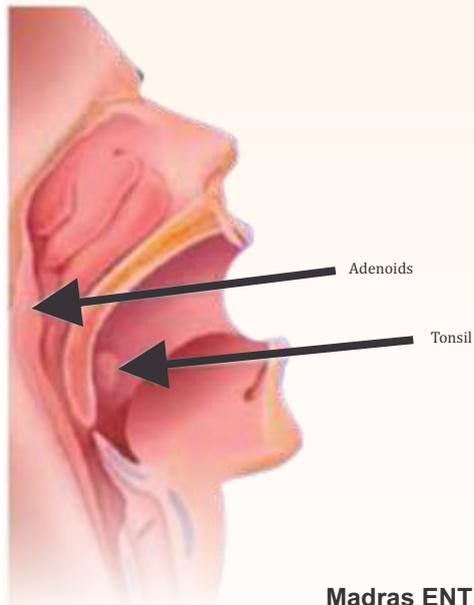


Fig. 1

Adenotonsillitis

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What is Tonsillitis & Adenoiditis?

Tonsils are lymphoid tissues located in the Oral cavity (Fig.1) which provide immunity against infections in the upper aero-digestive tract. Tonsils are similar in function to the Adenoids which lie behind the nose. Sometimes these adenoids and tonsil tissues get infected and become inflamed when the diagnosis of adenoiditis and tonsillitis is made.

When is it necessary to remove the tonsils?

Recurrent septic infections of the tonsils not responding to a complete course of medications (oral or intravenous antibiotics), should be treated by tonsillectomy surgery. If a patient develops an abscess around the tonsils, then an Interval tonsillectomy is done after a period of 6 weeks after the acute episode has subsided.

Causes:

- ▶ This infection can be caused by virus or bacteria. Adenoids & tonsils can also be enlarged due to nasal allergy
- ▶ It is usually seen in school-going age group
- ▶ Transmission of infection is by air-borne route due to coughing and sneezing

Usual Complaints :

- ▶ Sore throat
- ▶ Frequent colds
- ▶ Nose block
- ▶ Throat pain
- ▶ Nasal discharge
- ▶ Fever
- ▶ Hearing problems
- ▶ Breathing problems like snoring and mouth breathing if huge tonsils and adenoids block the airway (Fig.2)
- ▶ Facial changes in long-standing cases
- ▶ Difficulty in swallowing
- ▶ Cough
- ▶ Ear pain



Fig. 2



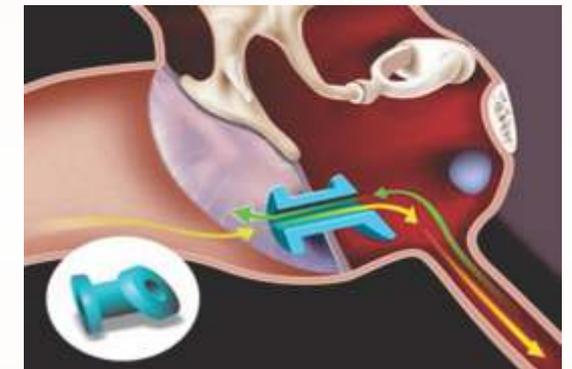
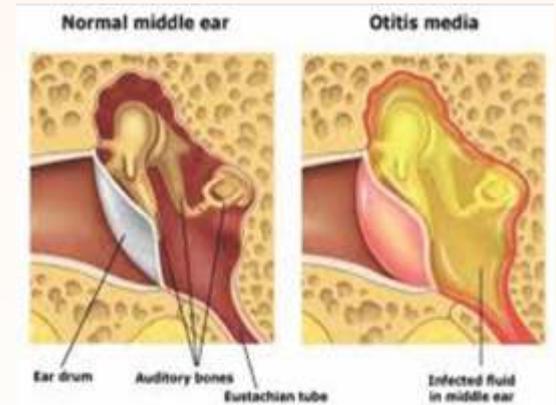
● Investigations: After a Complete ENT examination,

1. Complete routine blood investigations
2. Anti-streptolysin O antibody titre
3. Throat swab if discharge is present
4. Pus culture and sensitivity if abscess is drained
5. X-ray nasopharynx for adenoids
6. Absolute eosinophil count, Serum IgE – allergy
7. Skin prick test - allergy

● Complications Of Adenotonsillitis:

- Can be a source of infection which can cause recurrent problems like upper respiratory tract infections
- Huge obstructive long-standing adenoids if untreated can cause blockage of the tube which connects the back of the nose to the middle ear (Eustachian Tube) leads to a collection of non - infective serous fluid within the middle ear cavity. This fluid gets organized like 'Glue' over time leading to conductive hearing loss and blocking sensation in the ears. This condition is termed as Otitis Media with Effusion' and this fluid needs to be drained by a surgical procedure called Myringotomy with insertion of a ventilation / drainage tube – 'Grommet' in the ear drum
- Huge obstructive adenoids can lead to infection of sinuses, infection in middle ear with discharge of pus (suppurative otitis media)
- Enlarged Adenoids & tonsils in children

can also lead to Pediatric sleep apnea which is a growing problem both for the child and the parents as it can lead to poor school performance, disturbed sleep, irritability, snoring, mouth breathing, excessive daytime sleepiness



Does removal of septic tonsils / adenoids lead to reduced immunity in the body of the child?

Removal of septic adenoids / tonsils due to recurrent infection does not reduce the immunity in the body of the child

Does Adenoids / tonsils recur after removal?

There is no scientific evidence that adenoids / tonsils once completely removed will recur. After adenoidectomy, allergy may rarely cause enlargement of the lymphoid tissue mimicking adenoid symptoms. But this is easily curable with anti-allergic treatment

● **Management:**

● **Medical**

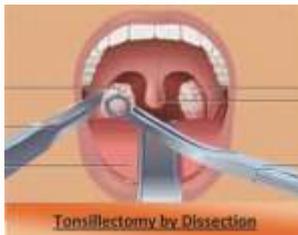
- Antibiotics - oral / intravenous
- Steroid nasal sprays
- Local antiseptic gargles
- Analgesics
- Anti-histamines
- Soothing agents
- Plenty of warm fluids and hydration



● **Surgical** – Septic adenoids / tonsils will be a continuous source of infection which may affect other organs of the body if the organisms enter the blood stream, i.e. renal problems, skin infections, defects in valves of the heart. So, the removal of septic adenoids & tonsils (adenotonsillectomy) due to recurrent infection provides great relief both for the patient and for the parents

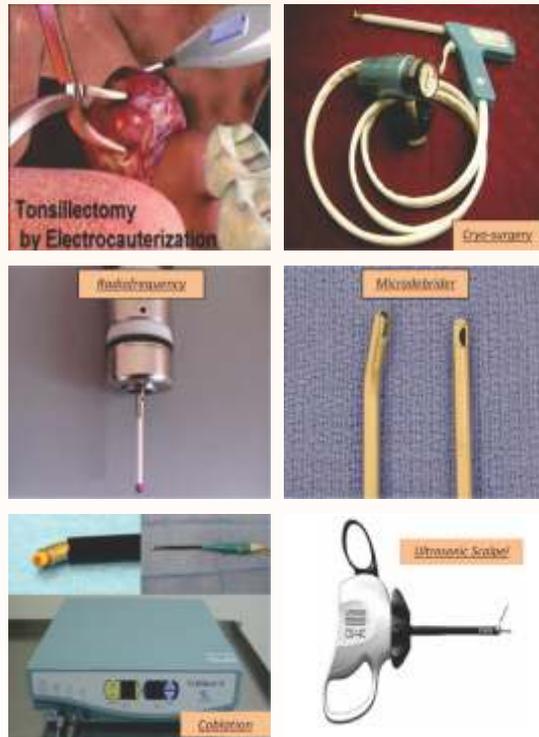
● **Methods of Adenotonsillectomy**

- Guillotine – done rarely
- Dissection – using sharp dissection with knife



● **Recent Advances in dissection like the following are also used in some centres**

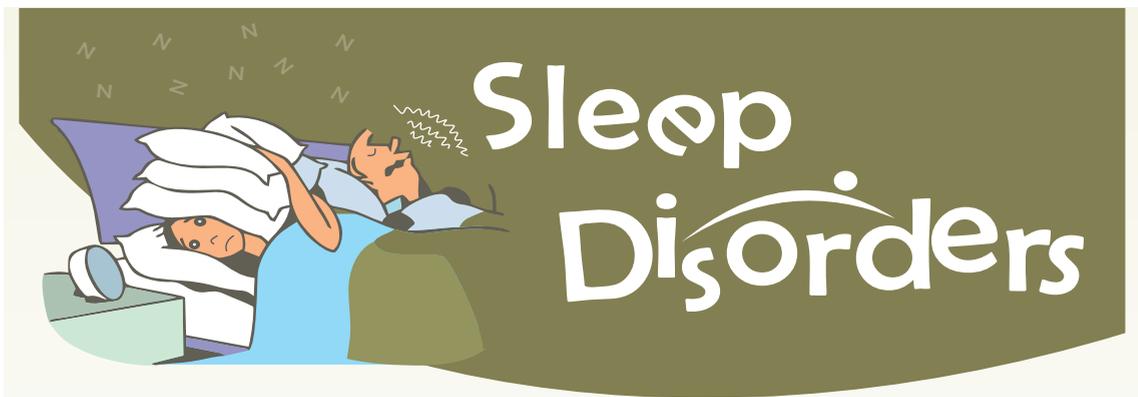
- Laser ablation



Adenotonsillectomy is an age old surgery which has undergone a revolution in recent times due to latest scientific advances in technology and management protocols

● **Conclusion:**

Early diagnosis and treatment of septic Adenotonsillitis / pediatric obstructive sleep apnea can go a long way in helping both the patient and the family



Dr. VIJAYA KRISHNAN
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Madras ENT Research Foundation (MERF), Chennai



What's New in Obstructive Sleep Apnoea Syndrome?

“The sufferers who doesn't suffer”

My Husband's Snoring Is Ruining Our Marriage!

Snororing & Sleep Apnoea is an increasing problem in our society. It affects 2 - 4% of middle aged adults and 1 - 3% of pediatric age groups. Significant advances have been made since then in this field and the otolaryngologist must be familiar with the diagnosis and various methods of management of sleep apnoea.

Factors that reduce upper airway size or predispose to upper airway collapsibility increase the susceptibility to sleep apnoea. If untreated, the patient is likely to suffer from deleterious effects on the cardiovascular system secondary to long standing oxygen deprivation.

The sudden increase in patients noticed in recent times represents an apparent increase due to more people seeking treatment because of awareness as well as a true increase in the incidence due to life style changes.

What is snoring?

- ▶ Snoring is defined as a coarse sound made by vibrations of the soft palate and other tissue in the mouth, nose & throat (upper airway).
- ▶ Snoring is caused by turbulence inside



the airway during inspiration because of partial blockage.

- ▶ This is because our muscle tone is reduced during sleep and there may be insufficient muscle tone to prevent the airway tissue vibrating.
- ▶ It is also common in children.

An Introduction to Apnoea

- ▶ Apnoea is stoppage of airflow at the nostrils & mouth for atleast 10 seconds.
- ▶ Obstructive Sleep Apnoea syndrome is a condition in which 30 or more apnoeic episodes occur during a 7-hour period of sleep.

What are the risk factors?

- ▶ Excessive consumption of alcohol

- ▶ Overeating and faulty nutrition
- ▶ Lack of exercise
- ▶ Smoking - Smokers are twice as likely to snore as non - smokers
- ▶ It is more common in people with **sedentary life style**
- ▶ Unfortunately, the excesses of life's pleasures are the main causes of snoring and sleep apnoea
- ▶ Fat deposits around the neck – **“Double Chin”**

“**Heroic snoring**” is known to be a leading cause for divorce in the western world



A middle aged man whose collar size is 17 ½" or above is predisposed to snoring.

What are the effects?

- ▶ Cardiac arrhythmias.
- ▶ Right-sided heart failure
- ▶ Hypertension
- ▶ Severe morning headaches
- ▶ Daytime sleepiness
- ▶ Intellectual and personality changes
- ▶ MED – Men Erectile Dysfunction
- ▶ Heart attack
- ▶ Sudden unexpected death



- ▶ Road Traffic Accidents (One study found that people with sleep apnea are 7 times more likely to be in a car accident than people without sleep apnea)



How do we diagnose OSAS ?

Investigations are aimed at identifying if the patient has simple snoring or OSAS. If he has OSAS, the site and severity of obstruction must be determined. Evaluation for OSAS starts with a proper history taking including h/o alcohol, drugs e.g. sedatives. Comprehensive ENT & head and neck examination is done. The common findings noted are short thick neck, enlarged floppy uvula, elongated soft palate, tonsillar hypertrophy & enlarged tongue. The presence of micrognathia / retrognathia is noted. Weight and blood pressure are recorded. A general medical work up must be done to identify patients at risk for cardiopulmonary complications including FBC, ECG, chest X-ray, thyroid evaluation and lung function tests.



Polysomnography (Sleep Study) is the gold standard investigation for OSAS and involves overnight monitoring of pulse oximetry, ECG, EEG, anterior tibialis EMG, EOG, nasal & oral airflow, chest & abdominal movements & sleeping position. It helps to differentiate obstructive from central sleep apnoea and helps to evaluate the severity of the problem.



Sleep MRI, a dynamic imaging modality helps to assess the site of obstruction whether it is behind the nose / palate / tongue.



What are the treatment options available?

It depends upon the severity and underlying cause of the disorder. The treatment modalities may be

- ▶ Medical appliances such as nasal splint, mandibular positioning device, tongue retaining device
- ▶ Surgical - If anatomical obstruction is present, corrective surgery can be done

Medical management consists of advice on increased physical activity and weight reduction, treatment of systemic disorders and advice on alcohol abstinence. Mandibular positioning device in nonobese patients with micrognathia / retrognathia helps advance the mandible and increases posterior airway space. It has a success rate of 50 % & compliance rate of 25%.

Continuous Positive Airway Pressure (CPAP) is a noninvasive and highly effective primary treatment modality for OSAS. It delivers a continuous flow of air to stent the upper airway from collapsing during sleep by increasing airway volume, area and lateral dimensions in retropalatal and retroglottal regions.



Surgical treatment consists of eliminating / controlling the etiology of obstructive breathing.

In children, surgical removal of obstructing tissue (adenoids and tonsils) is the most common method of treatment of OSAS.

There are many options for correcting the

retropalatal and retrolingual airway. A thorough evaluation is essential before decision for a particular technique is made. No single procedure works for all patients.

Surgical treatment aims at increasing the space behind the tongue or palate according to the level of obstruction by removing the excessive tissue with LASER / Coblation or moving forward the jaw bone.

In the future, neuromuscular stimulation of the genioglossus muscle and direct stimulation of the hypoglossal nerve may be useful in the management of OSAS.

Is obstructive sleep apnoea dangerous?

Yes, In rare cases, apnoea can be fatal. But in general it takes away the quality of life.

Weight reduction, regular exercise and life style modification are the key to lead a successful life.

What's your Snore Score?

1. Are you a loud and / or regular snorer?
Yes / No
2. Have you ever been observed to gasp or stop breathing during sleep?
Yes / No
3. Do you feel tired or groggy upon awakening, or do you awaken with a headache?
Yes / No
4. Are you often tired or fatigued during the wake time hours?
Yes / No
5. Do you fall asleep sitting, reading, watching TV or driving?
Yes / No
6. Do you often have problems with memory or concentration?
Yes / No

If you have one or more of these symptoms you are at higher risk for having Obstructive Sleep Apnea. If you are also overweight, have a large neck, and / or have high blood pressure the risk increases even further.

If you or someone close to you answers “Yes” to any of the above questions, you should discuss with your symptoms with your physician or a sleep specialist on the diagnosis and treatment of Sleep Apnea.

HEAD

NECK

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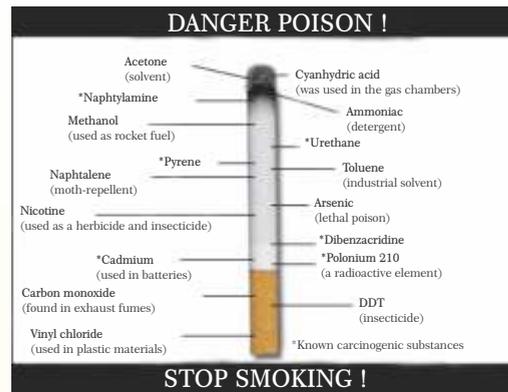


Diagnosis and Management of Head - Neck Cancers

Introduction

The head and neck region is one of the cancer prone areas of the human body. The incidence of disease has tended to increase with age and most of them are in people aged over 50 years. There is now evidence that the incidence of head and neck cancers is increasing amongst young people of both sexes. The patient with early disease stands a better chance of cure and increased survival. Unfortunately many patients with head - neck cancer present at a late stage although, improved survival for patients may be achieved with rapid detection and treatment. This chapter follows the patient's journey of care from presentation and awareness through treatment to follow up and rehabilitation. The treatment sections focus specifically on cancers of the larynx, oral cavity, oropharynx, and hypo pharynx, as these are the tumor sites with the highest incidence.

Risk factors for Head - Neck cancers:



Smoking and Tobacco:

Smoking is a risk factor for all tumour sites covered by this guideline. Leaving a cigarette on the lip is predictive of lip cancer risk irrespective of cumulative tobacco consumption.

Chewing tobacco is a risk factor for cancer of the oral cavity.

Alcohol consumption:

Alcohol consumption strongly increases the risk

of developing cancers of the oral cavity, pharynx and larynx. There is a strong relationship between the quantity of alcohol consumption and the level of risk.

Combined effects of smoking and alcohol consumption:

The combination of smoking and alcohol consumption increases the risk of developing cancer for all sites.

Dietary factors :

Poor diet is a risk factor for head and neck cancer. Conversely, people with a good Mediterranean diet have less than half the risk of developing oral/pharyngeal cancer and half the risk of developing laryngeal cancer (results adjusted for smoking and body mass index; BMI). The key protective elements of the Mediterranean diet include: citrus fruit; vegetables, olive oil and fish oils. An increase in N-3 polyunsaturates by 1 g per week reduces the risk of oral cancer.

Occupational hazards:

Textile industry, carpet installer, those involved in fossil fuel, semiconductor manufacturer and heavy mechanists are at increased risk of developing head & neck cancers.

Gastro esophageal Reflux disease:

There is evidence to suggest that the presence of gastro-esophageal reflux disease (GERD) is a risk factor for laryngeal and pharyngeal cancer.

Genetic Factors:

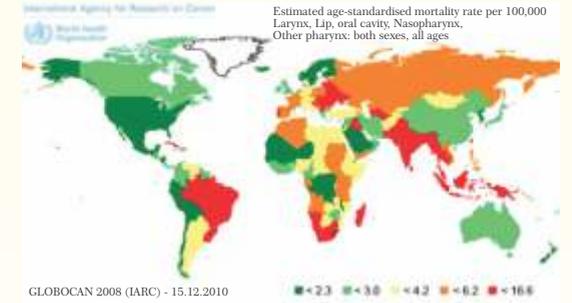
There is evidence to suggest a genetic susceptibility to head and neck cancer. At present there are no valid genetic screening tools for Head & Neck cancers.

Oncogenic Virus:

Certain viruses seem to have a causal relationship to Head & Neck cancers. Human papillomavirus (HPV) 16 sero-positivity is associated with an increased risk of oral / pharyngeal cancer. Epstein Barr Virus is associated with Nasopharyngeal carcinoma.

Ionizing radiation:

Ionizing radiation has been reported to cause cancer of the head and neck region.



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Common sites of Head - neck cancers:



1. Laryngeal cancer (voice box) At the level of vocal cord, above and below vocal cord. Maximum incidence is at the level of vocal cord.
2. Pharyngeal cancer (food passage).
3. Cancer of the tongue, tonsil and palate.
4. Oral cavity cancer includes cancer of floor of the mouth, cheek, jaw, gums and palate.

Clinical presentation with Head - Neck Cancers requires early referrals:

1. Red and white patches of the oral mucosa which persist for more than three weeks.
2. Ulceration of oral mucosa or oropharynx which persists for more than three weeks.
3. Oral swellings which persist for more than three weeks.
4. Unexplained tooth mobility not associated with periodontal disease.
5. Persistent, particularly unilateral, discomfort in the throat for more than four weeks.
6. Pain on swallowing persisting for three weeks that does not resolve with antibiotics.
7. Difficulty in swallowing which persists for more than three weeks.
8. Hoarseness which persists for more than three weeks.
9. Difficulty in breathing (requires same day referral).

10. Unresolved head or neck mass which persists for more than three weeks.
11. Unilateral blood stained nasal discharge which persists for more than three weeks.
12. Facial weakness or severe facial pain or numbness.
13. Orbital (eye) masses.
14. Ear pain without evidence of local ear abnormalities.

Clinical assessment for Head - Neck Cancers

1. Detail history of the disease process.
2. Physical examination by an experienced clinician.
3. Fiber optic endoscopy.
4. FNAC (needle aspiration) of the suspected masses.
5. Complete Endoscopic examination of the airway and food passage.
6. Biopsy from the suspected lesion.
7. Barium study of upper gastro intestinal tract.
8. Imaging study - CT Scan, MRI, PET - CT.
9. FDG PET - CT scan to rule out distant metastases.
10. Genetic and molecular analysis - PCR / In situ hybridization.
11. Immunocytochemistry.
12. Tumor markers.

Overview of treatment of the Primary cancers and Neck:

The aim of treatment is to maximize locoregional control and survival with minimal resulting functional damage. The most important function that must be considered when planning treatment are:

- ▶ Swallow
- ▶ Respiration and
- ▶ Speech

Cancer of the Head and neck should be treated by a multidisciplinary team. The team should include:

1. Specialist head - Neck cancer surgeon.

2. A medical oncologist.
3. A radiologist.
4. A pathologist.
5. A speech and language pathologist.
6. A clinical nurse specialist.
7. A dietician.

Treatment of the Primary cancer:

A. surgery:

Surgery may be the treatment of choice if the primary cancer can be excised with an appropriate margin of normal tissue without resulting in major functional compromise. Whenever possible, surgery for a primary head and neck cancer should preserve organ function.

- ▶ Where necessary, surgical resection should be followed by reconstruction using the most appropriate technique.
- ▶ Non-surgical treatment (radiotherapy with or without chemotherapy) should be offered to patients if survival rates are comparable with surgical resection.
- ▶ Salvage surgery must be available if an organ preservation approach is to be pursued.
- ▶ Following surgical resection of the primary cancer adjuvant postoperative radiotherapy should be considered where indicated.

B. Radiotherapy:

Treating cancers with ionizing radiation

Radiotherapy can be delivered with -

- ▶ Curative intent: (Radical radiotherapy)
- ▶ In order to improve local control following surgery (Adjuvant radiotherapy)
- ▶ Or to provide symptomatic relief only (palliative radiotherapy).

C. Chemotherapy:

Treating cancers with drugs

No evidence was identified to support the use of chemotherapy alone as a curative treatment for cancer of the head and neck.

Chemotherapy can be administered in combination with definitive surgery or radiotherapy as follows:

- ▶ Neo-adjuvant - delivered in the weeks before surgery or radiotherapy.
- ▶ Adjuvant - following surgery or radiotherapy.
- ▶ Concurrent - with radiotherapy.

Treatment of the Neck Nodes:

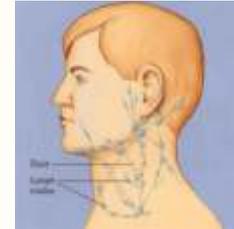


Image made available by a generous grant from Bristol - Myers Squibb

The neck contains more than 600 lymph nodes draining various vital structures of the head and neck. A primary cancer from any of these regions can spread onto these lymph nodes or a primary cancer of the lymph node itself can manifest in the neck (eg: Lymphomas). Appropriate diagnostic measures need to be performed to identify the location of the primary cancer and address the involved lymph node according to its staging. Cancers which manifest with lymph nodes in the neck have to be treated either with external beam radiotherapy to address the neck nodes or surgical intervention with a radical neck dissection.

E. Follow up, Rehabilitation and patient support:

Follow up: Patients should be seen frequently and regularly within first 03 years post treatment as maximum recurrence occurs within the first 02 years post treatment. Patient should be offered multidisciplinary follow up. Patient's weight should be monitored & Patient's complaints of pain should be investigated.

▶ Rehabilitation:

a. Oral and dental rehabilitation

- ▶ **Patients receiving oral surgery or radiotherapy to the mouth (with or without adjuvant chemotherapy) should have post-treatment dental rehabilitation.**
- ▶ Patients should access lifelong dental

follow up and dental rehabilitation

- ▶ Dental extractions in irradiated jaws should be carried out in hospital by a Dentist.

b. Speech and language therapy:

Head and neck cancer patients with dysphagia should receive appropriate speech and language therapy to optimize residual swallow function and reduce aspiration risk. All patients undergoing chemoradiation should have access to a specialist speech and language therapist before, during and after treatment.

c. Dysphagia:

Head and neck cancer patients with dysphagia should receive appropriate speech and language therapy to optimise residual swallow function and reduce aspiration risk.

d. Communication:

Patients undergoing laryngectomy should have specialist speech and language therapy to restore voice either by a tracheoesophageal voice prosthesis and / or oesophageal speech.

E. Nutritional support:

Early nutritional intervention, either by gastrostomy tube or by nasogastric tube feeding, and ongoing nutritional support for patients with head and neck cancer impacts on treatment outcome and quality of life.

F. Patient support:

There is evidence that patients with head and neck cancer suffer from anxiety, depression, disturbance of body image and difficulty in maintaining quality of life. The complex needs of patients with head and neck cancer require psychological support to address the problems they may encounter.

Conclusion

Head and neck cancers account for approximately 3-5% of all cancers in the body. Tobacco and alcohol use are the most important risk factors for the head- neck cancers. Eighty percent of head - neck cancers are linked to tobacco use. Avoidance of risk factors, screening and early intervention, and rehabilitation can improve survival and quality of life of head - neck cancer patient.

Preserve the power of self healing..!!

Cord blood banking and beyond

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In recent times, the concept of stem cell banking has largely picked up in the country. Expecting parents who have learned about the concept of cord blood preservation, have started opting for this once in a life time opportunity to ensure healthy future and protection from different diseases for their children and entire family.

There have been enough instances where cord blood stem cells have been used as a part of the treatment and has delivered favorable results.



What is Cord blood?

Cord blood is the residual blood retrieved from the Umbilical cord which is otherwise disposed off as a medical waste after delivery. Science has proved time and again that the cord blood and tissue is among the most precious source of highly undifferentiated stem cells that have huge regenerative potential and can be used in treatments of many diseases for which there is no standard cure in current medical practice. Cord blood therapy for varied blood related disorders has now become a routine treatment at many institutes in the country.

What are the different types of stem cells in Umbilical cord blood?

The most common stem cells include HSCs (Haematopoietic stem cells), HPCs (Haematopoietic

progenitor cells) and a number of other resident cells including VSELs (Very small embryonic like stem cells, EPCs (Endothelial progenitor cells) small quantities of MSCs (Mesenchymal stem cells), etc. All these cells together form the building block of Haematopoietic system (blood & immunity forming cells), and are extremely useful in treating different types of leukemias, lymphomas and blood related disorders like thalassemia and a variety of other diseases.

What is WHARTON'S Jelly in stem cell banking?

The soft gelatinous matrix of umbilical cord is medically termed as Wharton's jelly. This is also usually discarded as a medical waste after delivery, but is found to have multitude of cells with extremely high concentrations of stem cells and remarkable regenerative potential. These cells are termed Mesenchymal stem cells (MSCs) and are found with many other resident cells that further enhance its therapeutic benefits.



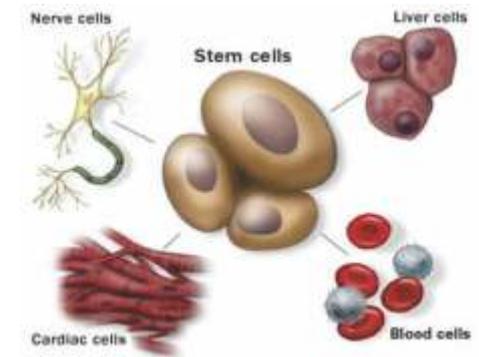
Why Should Parents Consider Cord Blood Banking?

Opting for cord blood banking services enhances the probability of future treatments where stem cells can play a significant role. Unless contraindicated due to specific clinical condition of one or both the parents, cord blood banking should always be considered. Further, cord blood banking is especially recommended for children whose parents are from mixed ethnical background. This is because it is usually difficult to find a potential suitable donor in case the child gets sick and needs transfusion. Cord blood of each individual is about 25% similar to siblings; therefore it is also very helpful for multiple births since it can potentially save a life in case of fatal disease. Additionally, it should be considered by parents with family history of severe anemia, cancers, immune disorders, diabetes and heart disease. With advancement in technology, we are now able to culture cells in the laboratory using Explant method and that has made it possible to store millions of cells for consumption in advance if the need arises in case of any medical urgencies where stem cells can play substantial role in the treatment.

Why it is advised to store both - Cord blood and Cord tissue?

With ever evolving possibilities in regenerative medicine and with more and more successful clinical trials of stem cells, the time is not too far when such therapies will be practiced routinely. Further, among all the available sources of stem cells, the cord blood and tissue stem cells are still considered the best available resource because of their higher primitiveness, multi-potent characteristics, less HLA representation, and immunomodulatory & immunosuppressant effects. Further to its confirmed clinical value, researchers are

still struggling to evaluate an appropriate dosage and related data for treating such diseases. Preserving the cord blood and tissues assures the availability of enough undifferentiated stem cells for all the future applications that research brings to clinical practice.



What diseases can be treated with stem cells?

Among all the sources of stem cells available for clinical utilization under the ethical guidelines, cord blood and cord tissue derived stem cells reveal the maximum advantage and remain highly promising in delivering the providential results for various diseased conditions. Apart from use as the proven treatment for blood disorders, these cells have been found highly promising for heart related ailments, diabetes, autoimmune disorders, ischemic leg ulcers, spinal cord injury, stroke, developmental pediatric disorders, bone defects, osteoarthritis, etc. The ongoing research in the field of regenerative medicine and cellular therapies is expected to bring remarkable outcome for treatment of human suffering from many such diseases.

For more details and value added services, please visit the last page of this magazine



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Fungus in the Sinus

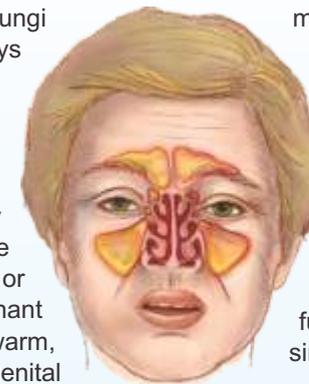
CAUSE FOR CONCERN?

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Fungi are freely found in our environment, from the air we breathe to the soil we walk on. But when they invade the human body they can cause serious problems. But do fungi inside the human body always cause problems?

You will be surprised to know that the human skin, nails and the gastro-intestinal tract can normally be home to many types of fungi. Fungi can be broadly divided into yeasts or moulds. Candida, the predominant yeast, normally grows in warm, moist areas like the female genital tract or the human gastro-intestinal tract. The moulds, typified by the fungus on decaying bread are generally carried as spores in the air and can be seen in the respiratory tract. In people with a normal immune system, the fungi are harmless and can only be a colonizer or cause localized infection. But when the immune system of the person is weakened by severe infections, immune-suppressive drugs, immune deficiency diseases or cancer, fungus can invade



the body and cause disseminated infection. At times, prolonged use of broad spectrum antibiotics can cause overgrowth of fungi which are generally not affected by antibiotics. This may cause local fungal infections or at times systemic infections like candida in the blood.

But when we culture fungus from the sinus, is it cause for alarm?

Fungus like Aspergillus can be carried as spores through the air or can sometimes contaminate beads and be inhaled into the respiratory tract. The fungi can reach the nose and enter the sinus where they can present as

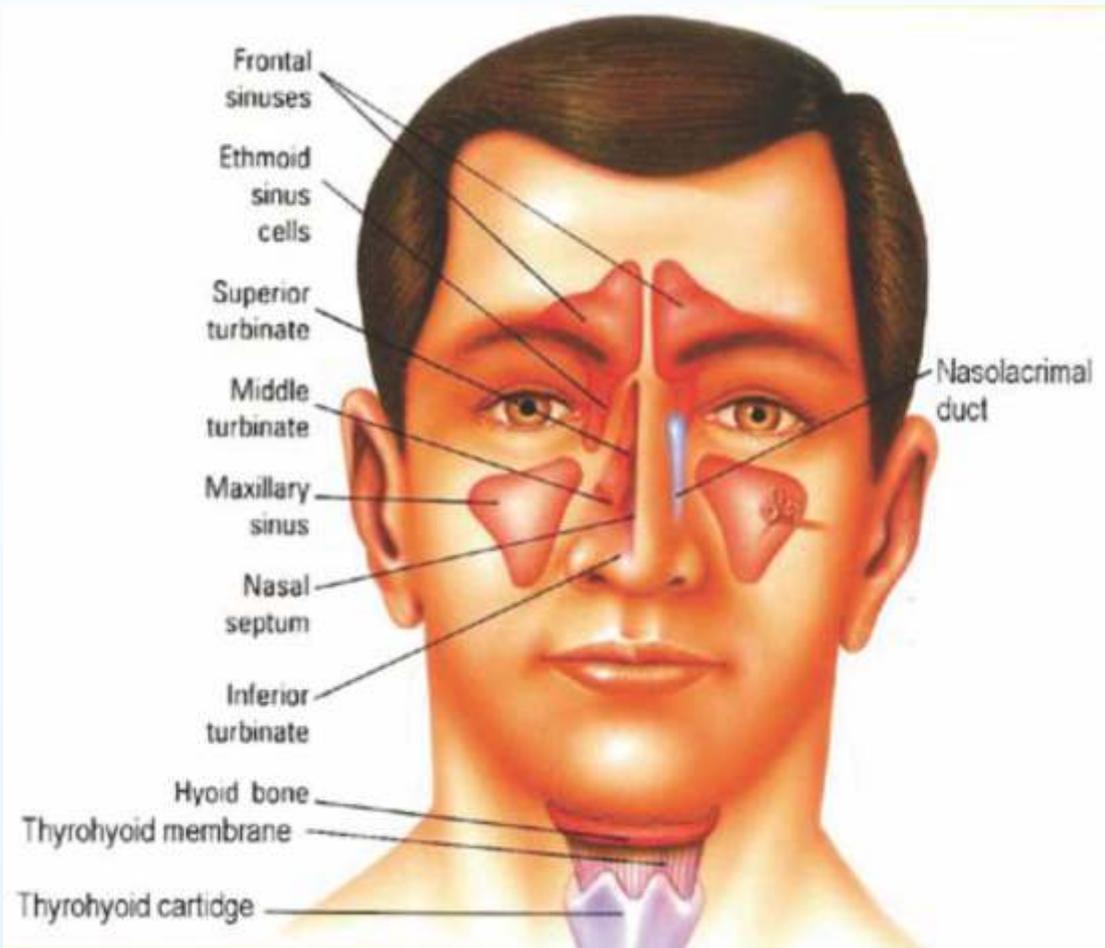
- ▶ Fungal balls – The fungus is found as a ball which just lies in the cavity without causing any problem. The biopsy shows no spread of the fungus across the lining of the sinus cavity. If such a ball is removed during a surgical procedure, it does not warrant any treatment. Poor air quality in the buildings can also cause such an infection.

▶ Allergic fungal sinusitis – Sometimes the fungal which enters the sinus can elicit an allergic response. This may cause symptoms in the form of chronic nasal discharge, headaches, nasal irritation, cough and thick secretions. If a nasal sinus examination shows features of n allergic fungal involvement, the person often responds to oral steroid medication with or without antifungal therapy. This has a tendency to recur.

▶ Invasive fungal sinusitis – This refers to an infection by fungi which can invade the sinus tissue and can sometimes extend into the eye or the brain. This is a serious

condition which can spread insidiously over several months without any major symptoms. Treatment involves surgically removing the tissue as much as possible and follow it up with antifungal medication for several months.

Correct treatment of fungi in the sinus requires a look into the sinus and a biopsy with a preferable culture of the tissue to determine the exact nature of the fungus and also to determine if it is actually causing an invasion or is only lying around. As Robert Koch said in the nineteenth century “The germ is not important; it is the terrain on which it is found that is important”. A correct understanding of the pathogenesis of the condition can lead to a better treatment.



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MANAGEMENT OF A **DISCHARGING EAR**



Ear discharge is one of the commonest complaints but it may also be a complaint of a serious underlying disease.

ACUTE SUPPURATIVE OTITIS MEDIA (ASOM)

Acute Otitis media is the most common disease of childhood, with the exception of viral upper respiratory infections. Acute bacterial infection occurs in 80% of children between the ages of 1 and 6 years, and it is the disease most frequently

managed with antibiotics.

In case of acute suppurative otitis media patient will have sudden onset ear pain, blocked feeling with fever and h/o recurrent upper respiratory infection.



Complications and sequelae

The infectious and noninfectious complications of otitis media in childhood may result in serious morbidity. Later in life, the infectious complications, include the spread of infection to the surrounding bone up to skull base and brain.

The non infectious sequelae, including chronic perforation of the ear drum and damage to small bones of middle ear leading

to hearing loss. Damage to inner ear leads to permanent hearing loss and balance disorder.

OTITIS MEDIA WITH EFFUSION (OME)

Eustachian tube is the tube connecting the middle ear and nasopharynx.

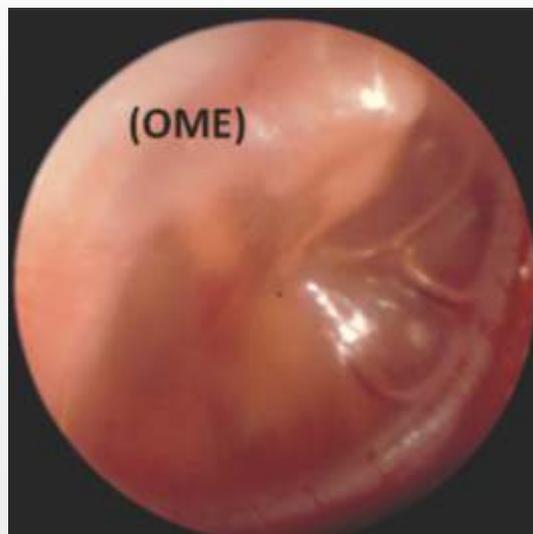
One of the main functions of the eustachian tube is ventilation. Opening of the eustachian tube allows exchanging of gases and equalization between the environment and middle ear. If it is affected there will be collection of serous fluid in the middle ear which is called as otitis media with effusion.

Causes

1. Acute otitis media (AOM) result in persistent otitis media with effusion (OME).
2. Eustachian tube dysfunction and block by enlarged adenoids or cancer.

In case of middle ear effusion patient will have h/o frequent upper respiratory infection & mouth breathing and h/o frequent sore throat / tonsillitis / fever. It is one of the leading cause of childhood hearing loss.

Initially medical management with nasal decongestants and nasal spray are started and in spite of that if the effusion persists it is surgically drained.



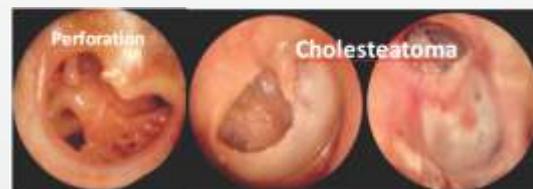
Sequelae

Otitis media may result in auditory deprivation during early childhood. Middle ear atelectasis which is the inward collapse of the ear drum is thought to result mainly from longstanding eustachian tube dysfunction. There may be scar formation over the ear drum which may result in long term hearing loss.

In case of recurrent OME we have to look for

1. Adenoid hypertrophy
2. Tonsillar infection
3. Sinusitis
4. Dental caries
5. Any other causes of Eustachian tube obstruction

CHRONIC SUPPURATIVE OTITIS MEDIA (CSOM)



In case of CSOM patient will have ear discharge with hearing loss, the ear discharge will be scanty and foul smelling in case of cholesteatoma which

is a dangerous infection eroding middle ear bones and sometimes eroding and spreading upwards to the brain.

The main line of treatment for this condition is surgery.

Goals of Surgery

Establish an intact ear drum.

Eradicate middle ear disease and create an air-containing middle ear space.

Restore hearing by building a secure connection between the ear drum and the inner ear.

Complications and sequelae

Infection spreading to adjacent bones and brain.

Nerve deafness.

Indirect sequelae include auditory deprivation and language delays.

EXTERNAL EAR

The bacterial and fungal infection of the external ear also causes ear discharge. There will be severe pain associated. It is treated with appropriate medications.

TRAUMA



Trauma to ear may be

BLUNT INJURY

PENETRATING INJURY

BAROTRAUMA

In case of trauma the discharge will be blood stained associated with ear pain and ear block. In case of trivial injury no intervention is needed but in case of serious injury drainage of hemotympanum is necessary.

In case of trauma **AVOID**

- a. Water getting into ear .
- b. Pouring oil into ear .

c. Cleaning with ear buds.

d. Applying ear drops without consulting ENT specialist.

e. Nose blowing.

TUMOUR

Ear discharge may also be a symptom of underlying cancer. In that case it may be blood stained with associated symptoms depending upon the spread. For cancers radical surgical management is necessary.

Most of the middle ear diseases are curable without complications and sequelae if appropriate treatment is initiated at the right time. Permanent hearing loss and other damage due to middle ear diseases can be prevented.

FAQ IN EAR DISCHARGE

1. Shall we use buds to clean discharge – NO.
2. How to clean wax – Leave it if it is scanty, if it is blocking the ear – consult ENT Specialist.
3. How to prevent water entering infected ear while taking bath – use a cotton to plug the ear which is soaked in coconut oil / vaseline.



Sinusitis

current concepts

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Sinusitis affects 35 – 45% of Indian population each year, making it one of the most common health problems in the society. It is common in all age groups with a higher predilection in females. It is more prevalent than heart disease and asthma and has a greater impact on quality of life than chronic back pain or congestive heart failure. Management of sinusitis has been evolving over the past many years.

What do you mean by sinus?

Sinus is an air filled space within the bones of the face. There are 8 sinuses (4 on each side) which contain air and they communicate with the nasal cavity. They are lined with mucin cells that make mucus to humidify the air and keep the nose from drying out during breathing and to trap unwanted materials so that they do not reach the lungs. When people say, "My sinuses are killing me", they usually are referring to symptoms of congestion and achiness in one or more of the four pairs of cavities.

What is Sinusitis?

"Sinusitis" simply means your sinuses are inflamed-red and swollen. Usually mucus

produced in the sinus flows out through openings of the sinuses into the nose. When these openings become blocked due to various reasons, stasis of mucus occurs in the sinuses leading to secondary infections with bacteria, virus and fungus. There are several types of sinusitis.



- ▶ Acute, which lasts up to 4 weeks.
- ▶ Subacute, which lasts 4 to 12 weeks.

- ▶ Chronic, which lasts more than 12 weeks and can continue for months or even years.
- ▶ Recurrent, with several attacks within a year.

What are the Symptoms of Sinusitis?

One of the most common symptoms of any type of sinusitis is pain, and the location depends on which sinus is affected.

- ▶ If you have pain in your forehead, the problem lies in your frontal sinuses.
- ▶ Pain in your upper jaw and teeth, with tender cheeks, may mean your maxillary sinuses are involved.
- ▶ Experiencing pain between your eyes, sometimes with swelling of the eyelids and tissues around your eyes, and tenderness when you touch the sides of your nose may mean sinusitis has developed in your ethmoid sinuses.
- ▶ Deep achiness at the top of your head, ear pain could be a sign that your sphenoid sinuses are involved (though these sinuses are affected less often).

In addition to the pain, people who have sinusitis (acute or chronic) often have thick nasal secretions that can be white, yellowish, greenish, or blood-tinged. Sometimes these secretions drain in the back of the throat and are difficult to clear. This is referred to as "post-nasal drip".

Also, cases of acute and chronic sinusitis are usually accompanied by a stuffy nose, as well as by a general feeling of fullness over the entire face.

Less common symptoms of sinusitis (acute or chronic) can include the following:

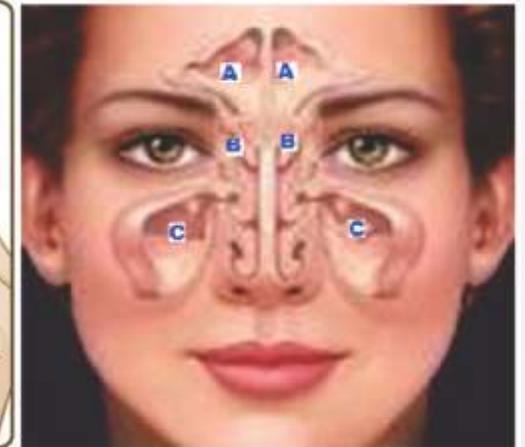
- ▶ Tiredness
- ▶ Decreased sense of smell
- ▶ Cough that may be worse at night
- ▶ Sore throat
- ▶ Bad breath
- ▶ Fever

Because your nose can get stuffy or congested when you have a condition like the common cold, you may confuse simple nasal congestion with sinusitis. A cold usually lasts about 7 to 14 days and goes away without treatment. Acute sinusitis often lasts longer and typically causes more symptoms than a cold.

What Causes Sinusitis?

Sinusitis can occur from one of these conditions:

- ▶ Colds and allergies may cause too much mucus to be made or block the opening of the sinuses.
- ▶ Small hairs (cilia) in the sinuses, which help move mucus out, do not work properly due to some medical conditions, leads to stasis of mucus in sinus.



A - Frontal B - Ethmoids C - Maxillary D - Sphenoid

- ▶ A deviated nasal septum, nasal bone spur, or nasal polyps may block the opening of the sinuses.

The collected mucus thickens because it loses its water content as it stays trapped inside the sinuses for a long time. In addition, inflammation leads to extra materials being secreted into the mucus, causing thickening leading to further stasis of mucus and further growth of microorganisms.

Acute Sinusitis

Acute sinusitis can be caused by the following:

- ▶ Common cold.
- ▶ Allergies and other chronic conditions.
- ▶ Pre-existing health conditions.

Common cold

Most cases of acute sinusitis start with a common cold, which is caused by a virus. Colds can inflame your sinuses and cause symptoms of sinusitis. Both the cold and the sinus inflammation usually go away within two weeks. If the inflammation produced by the cold leads to infection caused by bacteria, then this infection becomes acute sinusitis.

The inflammation caused by the cold results in swelling of the mucous membranes of your sinuses, trapping air and mucus behind the narrowed sinus openings. When mucus stays inside your sinuses and is unable to drain into your nose, it can become the source of nutrients for bacteria, which can then multiply.

Most healthy people have bacteria, such as *Streptococcus pneumoniae* and *Haemophilus influenzae*, in their noses and throats. Usually, these bacteria cause no problems, but when you sniff or blow your nose when you have a cold, these actions create pressure changes that can send typically harmless bacteria into the sinuses.

If your sinuses stop draining properly, the bacteria can begin to multiply in your sinuses, causing acute sinusitis.

Allergies and other chronic conditions

People who have allergies or other chronic problems that affect the nose also are prone to episodes of acute sinusitis. Chronic nasal problems cause the mucous membranes to swell and the sinus passages to become blocked. The normally harmless bacteria in your nose and throat again lead to acute sinusitis.

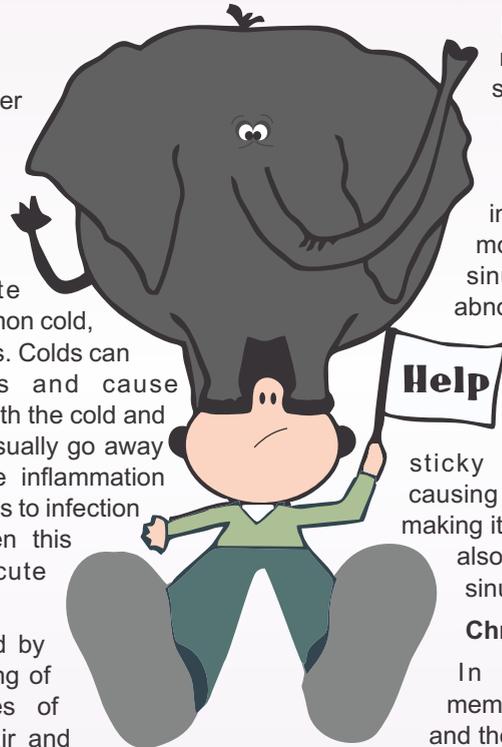
Pre-existing health conditions

In general, people who have reduced immune function, such as those with primary immune deficiency disease (a defect in the way the immune system responds to infection) or HIV infection, are more likely to suffer from sinusitis. People who have abnormal mucus secretion or mucus movement, such as those with cystic fibrosis (an inherited disease in which thick and sticky mucus clogs the lungs, causing breathing problems and making it easier for bacteria to grow), also are more likely to suffer from sinusitis.

Chronic Sinusitis

In chronic sinusitis, the membranes of both the sinuses and the nose thicken because they are constantly inflamed. This condition may be distinguished as either rhinosinusitis with or rhinosinusitis without nasal polyps.

Nasal polyps are grape-like growths of the mucous membrane that protrude into the sinuses or nasal passages, making it even more difficult for the sinuses to drain and for air to pass through the nose. The causes of chronic rhinosinusitis are largely unknown, but there are some conditions that may put you at higher risk for developing it, including the following:



- ▶ Asthma and allergies.
- ▶ Recurrent acute sinusitis.
- ▶ Pre-existing health conditions.

Asthma and allergies

Chronic rhinosinusitis often occurs in people who have asthma, many of whom also have allergies. It is possible that constant exposure to airborne allergens (substances that causes an allergic reaction) from house dust mites, pets, mold, and cockroaches causes chronic inflammation of the lining of the nose and the sinuses. An allergic reaction to certain fungi causes some cases of chronic rhinosinusitis: this condition is called allergic fungal sinusitis.

Recurrent acute sinusitis

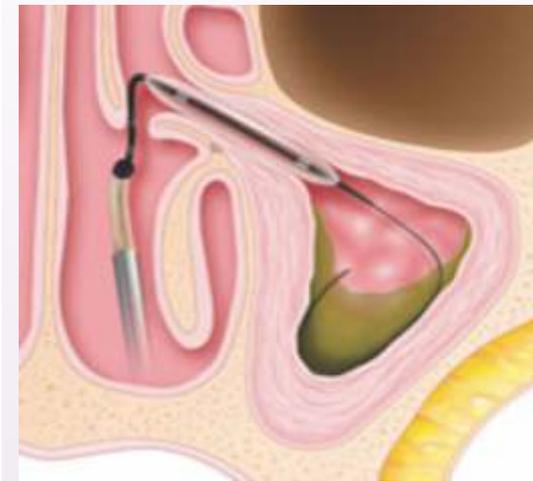
If you suffer from frequent episodes of acute sinusitis, you may be prone to developing chronic rhinosinusitis. It may be caused by an exaggerated immune response to fungi that normally are found in the sinuses or to the bacterium *Staphylococcus aureus*, which commonly lives inside the nose.

Pre-existing health conditions

As with acute sinusitis, other causes of chronic rhinosinusitis may be an immune deficiency disorder or cystic fibrosis.

How is Sinusitis Diagnosed?

A good history of your symptoms and



examination of your nose and face can clinch the diagnosis. But if your symptoms do not clearly indicate that you have sinusitis or if they persist for a long time and do not get better with treatment, you may require a CT (computerized tomography) scan (a form of X-ray that shows some soft-tissue and other structures that cannot be seen in conventional X-rays) to confirm that you have sinusitis.

Other laboratory tests include the following:

- ▶ Diagnostic nasal endoscopy – to view inside your nose and nasopharynx (back of nose).
- ▶ Allergy test – to test what all you are allergic to.
- ▶ Blood tests to rule out conditions, such as an immune deficiency disorder or cystic fibrosis, that are associated with sinusitis.
- ▶ Absolute eosinophil count.

How Is Sinusitis Treated?

Acute sinusitis

If you have acute sinusitis, the following may be recommended:

- ▶ Antibiotics to control a bacterial infection, if present.
- ▶ Pain relievers to reduce any pain.
- ▶ Decongestants (medicines that shrink the swollen membranes in the nose and make it easier to breathe).
- ▶ Antiallergic medications that may include nasal steroid spray and anti histamines.

It should be used as prescribed by the doctor, as longer term use can lead to even more congestion and swelling of your nasal passages and other health problems.

Chronic rhinosinusitis

Two options are available ie, medical or surgical. A trial of medicines is given first and if symptoms are not relieved surgery may be considered

Medicine

- ▶ Nasal steroid sprays, Anti histamines and Anti leukotriens.

- ▶ Saline nasal sprays can be helpful in chronic rhinosinusitis because they remove thick secretions and allow the sinuses to drain.
- ▶ Oral steroids, such as prednisone, may be prescribed for severe chronic rhinosinusitis.

Surgery

Nasal surgery does not involve any external incision or scar

Functional Endoscopic Sinus Surgery (FESS)

This surgery removes anatomical and pathological obstructions associated with sinusitis in order to restore normal clearance of the sinuses.

- ▶ Enlarge the natural openings of the sinuses.
- ▶ Remove nasal polyps.
- ▶ Correct significant structural problems inside the nose and the sinuses if they contribute to sinus obstruction.

Balloon sinuplasty

The balloon sinuplasty operation involves the use of an FDA approved Balloon Sinus Dilatational System, which is used to widen the natural opening of the paranasal sinuses with



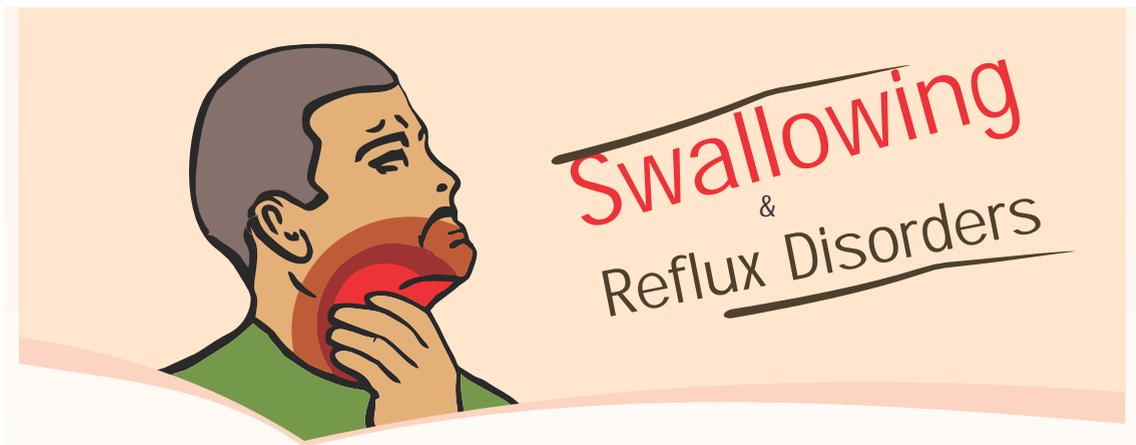
endoscopic assistance and fluoroscopic C-arm guidance. Endoscopic sinus surgery (with balloon sinuplasty technology) utilizes a small, flexible, sinus balloon that is placed into the nose to reach the sinuses. The sinus balloon is then gradually inflated to gently restructure the previously blocked sinus opening which helps to restore normal sinus drainage and function. The main advantage of this surgical technique over the conventional endoscopic sinus surgery is the preservation of the normal anatomy of the most vital area of the nose called the osteo-meatal complex.

WHAT PRECAUTIONS SHOULD I TAKE?

- ▶ Maximum avoidance of exposure to substances which you are allergic.
- ▶ Keep your home and work environment clean.
- ▶ Avoid very dry and dusty environments, use air purifiers and humidifiers if necessary.
- ▶ Avoid exposure to irritants such as cigarette and cigar smoke or strong odors from chemicals.
- ▶ Avoid long periods of swimming in pools treated with chlorine.
- ▶ Avoid water diving, which forces water into the sinuses from the nasal passages.
- ▶ Avoid air travel during an acute sinusitis.

DOES PRANAYAMA HELP?

Pranayama or Deep breathing exercise have proved efficacious in controlling sinusitis as it increases the Nitric oxide content of inspired air which help in better lung functioning and also help to clear the mucus at a faster rate from the sinus.



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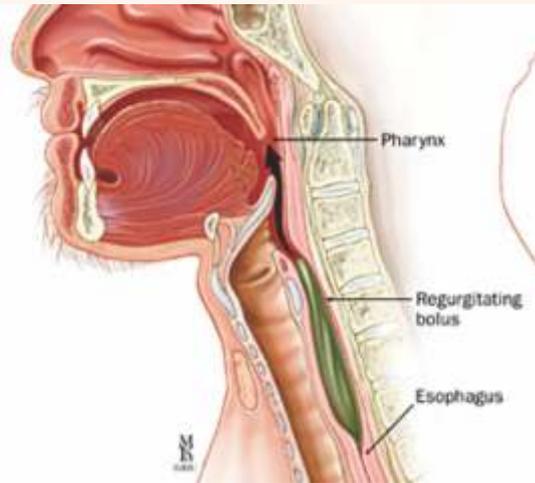
People normally swallow hundreds of times a day, to eat solids or drink liquids, and swallow the normal saliva and mucous which the body produces. An interruption in the swallowing process can cause difficulties. Difficulty in swallowing is termed as Dysphagia. One of the most common causes of dysphagia is gastroesophageal reflux. This occurs when stomach acid moves up the esophagus (food pipe) to the pharynx (throat), causing discomfort. Other causes may include: stroke, progressive neurologic disorder, the presence of a tracheostomy tube, a paralyzed vocal cord, a tumor in the mouth, throat or esophagus, or surgery in the head, neck or esophageal areas.

Symptoms of swallowing disorders may include drooling of saliva, a feeling that food or liquid is sticking in the throat during or after a meal or while swallowing saliva, discomfort in the throat or chest, a sensation of a foreign body or "lump" in the throat. Weight loss and inadequate nutrition due to prolonged or more significant problems with swallowing, coughing or choking caused by food, liquid or saliva not passing easily during swallowing, and small amounts of food, liquid or saliva being sucked into the lungs could

also result from dysphagia.

Evaluation and management of swallowing disorders requires a multidisciplinary team approach. When dysphagia is persistent and the cause is not apparent, the otolaryngologist (ENT)-head and neck surgeon will discuss the history of the problem and examine the mouth and throat. This may be done with the aid of mirrors or a small tube (flexible laryngoscope) which provides vision of the back of the tongue, throat, and larynx (voice box). If necessary, an examination of the esophagus, stomach, and upper small intestine may be carried out by the otolaryngologist or a gastroenterologist. These specialists may recommend X-rays of the swallowing mechanism, called barium swallow which is done by a radiologist.

If special problems exist, a speech pathologist may consult with the radiologist regarding a modified barium swallow or videofluoroscopy. These help to identify all four stages of the swallowing process. Using different consistencies of food and liquid, and having the patient swallow in various positions; a speech pathologist will test the ability to swallow. An exam by a neurologist may be necessary if the



which trigger the swallow reflex. Patients may also be taught simple ways to place food in the mouth or position the body and head to help the swallow occur successfully.

Some patients with swallowing disorders have difficulty feeding themselves. An occupational therapist can aid the patient and family in feeding techniques. These techniques make the patient as independent as possible. A dietician or nutritional expert can determine the amount of food or liquid necessary to sustain an individual and whether supplements are necessary.

Surgery is used to treat certain problems. If a narrowing or stricture exists, the area may need to be stretched or dilated. If a muscle is too tight, it may need to be dilated or even released surgically. This procedure is called a myotomy. Many causes contribute to swallowing disorders. If you have a persistent swallowing problem, consult an otolaryngologist-head and neck surgeon.

swallowing disorder stems from the nervous system, perhaps due to stroke or other neurologic disorders.

Once the cause is determined, swallowing disorders may be treated with:

1. Medications
2. Swallowing therapy
3. Surgery

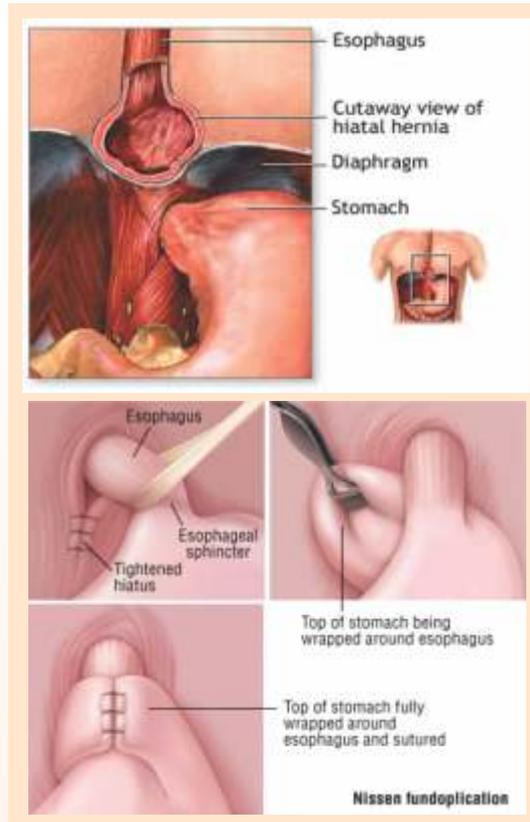
Treatment is tailored to the particular cause of the swallowing disorder. Many of these disorders can be treated with medications. Drugs that slow stomach acid production, muscle relaxants, and antacids are a few of the many medicines available.

Gastroesophageal reflux can often be treated by changing eating and living habits - for example:

- ▶ Eat a bland diet with smaller, more frequent meals.
- ▶ Eliminate alcohol and caffeine reduce weight and stress.
- ▶ Avoid food within three hours of bedtime.
- ▶ Elevate the head of the bed at night.

If these don't help, antacids between meals and at bedtime may provide relief.

Many swallowing disorders may be helped by direct swallowing therapy. A speech pathologist can provide special exercises for coordinating the swallowing muscles or restimulate the nerves



TINNITUS

MANAGEMENT

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Tinnitus means to
'jingle' or 'ring like a bell'.

It is the perception of a noise in the ears or head in the absence of external sounds, frequently described as ringing, buzzing, humming, hissing etc. Some may have tinnitus in one ear or both and some describe it as coming from inside the brain. Tinnitus can be high pitched or low pitched and can be constant or come and go intermittently.

Tinnitus is of two types:

Objective tinnitus: This consists of head noises audible to other people in addition to the sufferer. The noises are usually caused by vascular anomalies, repetitive muscle contractions, or inner ear structural defects.

Subjective tinnitus: It is much less understood, with the causes being many and open to debate. Anything from the ear canal to the brain may be involved.

What does tinnitus sound like?

Tinnitus sounds like the high-pitched background squeal emitted by some computer monitors or television sets, noises like hissing steam, rushing water, chirping crickets, bells, breaking glass, or even chainsaws. Some report that their tinnitus temporarily spikes in volume with sudden head motions during aerobic exercise, or with each footfall while jogging. Objective tinnitus sufferers may hear a rhythmic rushing noise caused by

their own pulse. This form is known as pulsatile tinnitus.

What causes tinnitus?



Overexposure to loud noises

Repeated exposure to loud noises such as guns, artillery, aircraft, lawn mowers, movie theaters, amplified music, heavy construction, etc, can cause permanent hearing damage. Some people report auditory fatigue from driving automobiles long distances with the windows down. Anybody regularly exposed to these conditions should consider wearing ear plugs or other hearing protection.

Wax in the ear canal

If you're experiencing tinnitus, this is one of the first things you should check for. NEVER try digging or suctioning the ear canal yourself as SERIOUS damage may result. Numerous over-the-counter ear wax solvents are available from your drugstore which will clean the ear canal in a safe and gentle manner.

Excessive mobile phone usage

Tinnitus, a warm sensation in the ear or a high frequency hearing loss are the early warning signs that it is essential to reduce the duration of mobile phone use and



Severe ear infections

Tinnitus occurs after severe ear infections. But this may also be related to the use of ototoxic antibiotics.

Meniere's Disease

Tinnitus along with giddiness and hearing impairment or fullness of the ear is seen. A proper evaluation of the patient can aid in the timely treatment and cure of this common malady.

Ototoxic drugs

Many prescription and over-the-counter drugs may cause tinnitus that may be permanent or may disappear when the dosage is reduced or eliminated. Before starting treatment with any prescription drug, tinnitus sufferers should always ask their physician and / or pharmacist about the potential for ototoxic side effects. These drugs include:

- salicylate analgesics (higher doses of aspirin)
- ibuprofen
- other non-steroidal anti-inflammatories
- aminoglycoside antibiotics
- anti-depressants
- loop-inhibiting diuretics
- quinine/anti-malarials
- oral contraceptives
- chemotherapy

Vascular abnormalities

Arteries may press too closely against the inner ear. This is sometimes correctable by delicate micro ear surgery.

Temporo-Mandibular Joint (TMJ) syndrome

This jaw disorder may cause tinnitus and is characterized by many symptoms, including headaches, earaches, tenderness of the jaw muscles, dull facial pain, jaw noises, the jaw locking open, and pain while chewing.

How can I avoid getting tinnitus?

The number one cause of tinnitus is exposure to excessively loud noise. Either avoid these noisy situations, or wear hearing protection. Wedding halls, political meets, movie theaters, nightclubs, construction sites, guns, power tools, stereo headphones, rock concerts, and musical instruments are just some of the things that can be hazardous to your ears. Damage can result

from either a single exposure or cumulative trauma. There are "tough" ears, and there are "weak" ears; what may be safe or dangerous for one individual may not be the same for you. If you ever experience temporary ringing after a sound exposure, you are at a severe risk for tinnitus and/or hearing loss.



What treatments are available for Tinnitus?

Several forms of treatment are currently available and several other experimental approaches hold promise for the future. These include:



Fig.3: Hearing Aid

► **Amplification:** Hearing aids can reduce or even eliminate some forms of tinnitus. If a patient has a hearing loss and the tinnitus is in the medium or low pitches, often a hearing aid will provide relief. The hearing aid renders the patient capable of hearing ambient environmental noises instead of the tinnitus.

► **Tinnitus masking units:** These devices resemble hearing aids and present a selected band of noise to the patient's ears. This external "shh" sound is often immediately perceived as a more pleasant sound than the internal tinnitus sound. A "tinnitus instrument" is a unit that combines both a masker and a hearing aid. Bedside sound devices, audio tapes and even FM-radio static can produce a masking effect. Some patient's experience "residual inhibition" – the reduction or elimination of tinnitus – after the masking noise is removed. The period of residual inhibition is usually very short, often less than one minute.

► **Tinnitus Retraining Therapy (TRT):** TRT is a treatment program designed to retrain the brain so that "habituation" to tinnitus can occur. TRT combines directive counseling and sound therapy by having the patient wear sound generators that emit a stable, low-level broad-band noise. 80% of those undergoing TRT experience success within 18-24 months.

► **Drug therapy:** Many drugs have been investigated as possible relief agents for tinnitus. They include anti-convulsants, tranquilizers, anti-anxiety medications, vasodilators, and antihistamines. These drugs have helped some patients effectively manage their tinnitus.

► **Bio feedback:** This is a relaxation process in which one learns to control his or her physiological reaction to stress. Since stress seems to aggravate tinnitus, control over one's reaction to stress often

helps minimize the tinnitus.

- ▶ **Cochlear implants:** These surgically implanted devices are designed for people with little or no usable hearing. Some of these patients report post operative improvement in their tinnitus. Research is ongoing to determine if a type of implanted stimulus can be devised for people with tinnitus and normal hearing.
- ▶ **Dental treatment:** Persons with temporomandibular joint (TMJ) problems associated with tinnitus can be treated with effective relief provided for some who suffer from this dual problem. Symptoms of damage to this joint (located just below the ear) include tinnitus, jaw-clicking and ear pain.
- ▶ **Counseling:** Therapies such as cognitive therapy, behavioral modeling, patient education and support groups have proven useful for many patients who are struggling with tinnitus.
- ▶ **Electrical stimulation:** This experimental therapy involves electrical energy transmitted to the cochlea via electrodes placed near the ears. While a degree of success has been noted, some



Fig.4: External and Internal Component of a Cochlear Implant

have reported worsening of their tinnitus with this therapy.

- ▶ **Neuromonics Tinnitus Treatment:** This treatment utilizes a small, lightweight device with headphones that delivers precise music embedded with a pleasant acoustic stimulus. These sounds, customized for each user's audiological profile, stimulate the auditory pathway to promote neural plastic changes. Over time, these new connections help the brain to filter out tinnitus disturbance, providing long-term relief from symptoms. Some may report relief from this treatment immediately but most will experience relief within a 6 month period of time.

As the age old adage goes "Prevention is better than cure", conditions leading to Tinnitus is better avoided and timely consultation with an otologist can help in making proper and informed choices.



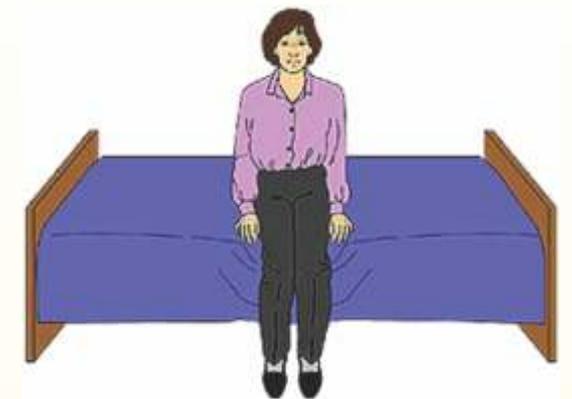
Fitness Section

S. NIRANJANI
Physiotherapist &
Fitness Consultant



Vertigo is a particular form of dizziness where one feels as though they or their surroundings, are spinning when in fact they are not so. Vertigo is most often caused by inner ear damage which is one of the source of information about balance. It detects the direction of gravity. There are two types of vertigo, vertigo relating to central nervous system is known as central vertigo and vertigo due to problem in inner ear is known as peripheral vertigo. Apart from medication to treat vertigo there are various rehabilitation exercises to overcome vertigo in your day to day activities. Few are Canal repositioning maneuver, Cawthome Cooksey head and eye exercises, Brandt – Daroff exercises, Epley maneuver and balance retraining. Few of the mentioned exercises are done with the help of a doctor.

One of the most common exercises which are taught by the physiotherapist to the patient with peripheral vertigo is Brandt – Daroff exercises. The procedures are as follows



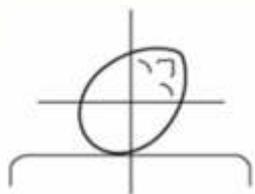
Step 1:
Sit at the edge of the bed in such a way that you have enough space to lie down on both the sides



Step 2:
From the sitting position lie down onto your side



Step 5:
Return to the sitting position and if symptoms persist stay for 30 seconds



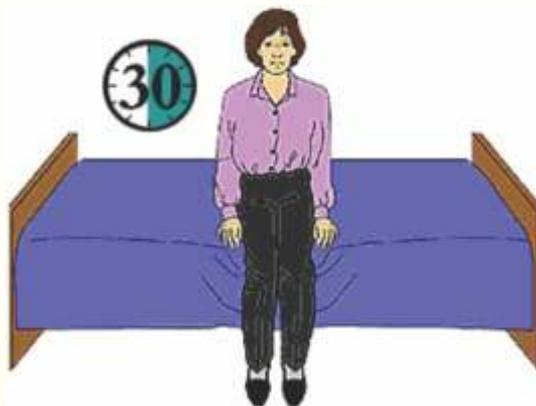
Step 3:
Keep your head at 45 degree angle in such a way that you are looking at some one standing 6' tall in front of you



Step 6:
Now lie down onto your other side and keep your head at 45 degree angle, remain in the position for next 30 seconds or till the symptoms subside



Step 4:
Remain in that position till 30 seconds or the symptoms like dizziness subside



Step 7:
Return to the sitting position and stay for next 30 seconds

The above cycle is one repetition. The below mentioned exercises has to be performed in sitting position

EYE EXERCISES

1. Look up and down.
2. Start slowly and gradually increase your speed.
3. Look from side to side, start slowly and then gradually increase the speed.
4. Point your finger at arm's length, focus on it and move the arm slowly towards you and out again.

HEAD EXERCISES

1. Start with eyes open, bend your head forward and then backward, slowly and gradually increase your speed.
2. With your eyes open turn your head from one side to other, start slowly and gradually increase your speed.
3. Once the symptoms decrease do the same with your eyes closed.

The above said exercises has to be performed in the presence of physiotherapist. As exercises varies from patient to patient the above described exercises are just a few, consult your doctor and physiotherapist and go ahead.

Apart from exercises their are few safety measures which has to be taken care.

*Wear proper footwear, make sure that the soles have good grip.

*get your eyes checked on regular basis if you are wearing spectacles.

*Leave a light on in the bathroom and bedroom during night.

*Avoid taking alcohol.

TRAINING WITH COLD

Can I do my exercises when I have cold or what exercises should I do? As you read on many such doubts will be cleared. Their will be obvious lower strength and endurance when you have cold. If you have symptoms like fever, dry cough, sore muscles, vomiting and diarrhoea then exercise are not recommended. It's always better to take rest till the infection has gone. Always make sure that you keep yourself

hydrated drink lots of water, maintain your diet and of course have proper sleep.

A recent study sponsored by the American College of Sports Medicine indicated that exercising moderately while you have a common cold doesn't affect the severity or duration of the symptoms or compromise the immune system. But high intensity exercise such as heavy weight lifting or high intensity aerobic training has been shown to have a negative impact on the immune system during a cold or any respiratory infection.

Certain things has to be kept in mind when you go to gym with cold.

*Always carry a hand towel with you and make sure to keep your sweat to yourself.

*Make sure the equipment is wiped with disinfectant after use.

*Avoid touching your hands to your mouth, nose, or eyes while at the gym.

*Carry your sipper instead of drinking the water which is provided at the gym.

*Avoid going to steam and sauna, chances of spreading the infection to others is more.

* Excessive exercise is very detrimental to your health, so Sit with your trainer and review your workout plan as your immune system is down, you need to do some light weight training and moderate amount of cardio.

*Make sure that you are not over training.

*Staying on treadmill or other cardio machines an extra time to lose those post-holiday weight? These "extra" efforts may be causing you more harm than good.

*Cut back the length and frequency of your training sessions if you are feeling sluggish.

*Reduce caffeine and alcohol intake as it is harmful to the immune system.

As you follow the given details you would be able to overcome cold easily and can look out for faster recovery without a break in your routine exercises.

Exercise and stay happy!



Jackfruit Seed Patchadi



*Jackfruit seed patchadi seems to be yummy!
But how do we prepare it? Let's see the method.*

Ingredients	10 nos
Jackfruit seed	10 nos
Curd	1 cup (200ml)
Green chillies	3 nos
Ginger chopped	1 tsp
Coconut oil	1 tsp
Mustard seeds	½ tsp
Curry leaves	few springs
Asafoetida	a pinch
Salt to taste	

Method

Pressure cook the jackfruit seeds for 5-10 minutes

Peel the outer skin and chop the seeds

Grind the boiled jack fruit with ginger, green chillies and curd

Add little water, salt to taste

Splutter mustard seeds and curry leaves in coconut oil and add to the patchadi

Serve with plain rice, pulav, paratha, etc

Benefits

Rich in phytonutrients

As the seeds are cooked with the skin, the fibre content is high

To an extent it also helps in indigestion

24x7 Expert Medical Consultation Over Phone



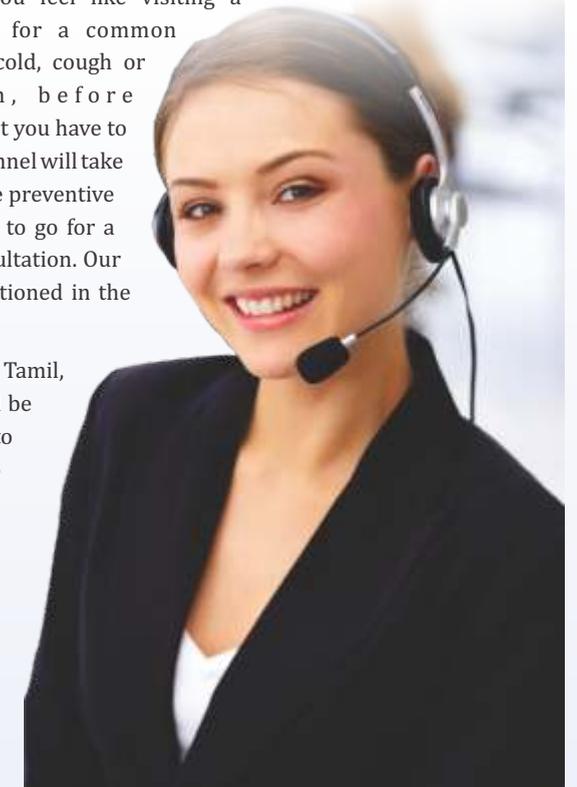
It has been our motto to ensure preventive care information and assistance for good health and as a back stop provide financial indemnity through insurance cover. To address the magazine and the new initiative is 24x7 free expert medical consultation over phone.

When do you utilize this service

Whenever you feel like visiting a doctor, say, for a common ailment viz, cold, cough or body pain, before proceeding, what you have to

do is to call our Toll free number. The Medical personnel will take the details from you and you will be advised simple preventive steps, over the counter medicines or suggest you to go for a medicines or suggest you to go for a medical consultation. Our Toll free number is 1800 425 2255 and it is mentioned in the policy document.

Language: The receiver of the call will converse in Tamil, Hindi, Malayalam and of course in English. We will be thankful to receive in English. We will be thankful to receive your communication on any suggestions to make the system better and more effective to the editor of this magazine.



CLAIMS PROCEDURE

At Star Health Insurance, we always interact with customers with a humane and healing touch. We ensure it remains the same when customers need assistance by keeping the claim process simple and easy. We have a 24x7 medical assistance for consultation and facilitation with regard to hospitalization needs. Our aim is to provide cashless hospitalization in a hassle-free and time-bound manner.

We have entered into arrangements with network hospitals to provide cashless hospitalization, so you don't have to worry about any advance payments. The steps to avail this benefits are as follows:

Inform the Star Health Call Centre by quoting the Star Identity Card or Policy Number within 2 hours of admission. This is mandatory.

Show the Star Identity Card / quote the Policy Number at the hospital reception and request for cashless hospitalization.

Ensure that the completed Pre-authorization form and related medical reports are faxed to the Star Health Call Centre by the hospital. This is mandatory.

A copy of Pre-authorization form duly filled along with all relevant medical reports (that substantiates the need for hospitalization) should be provided by the hospital to the visiting Star Health Doctor.

On receipt of duly filled Pre-authorization form and based on the feedback from Star Health's Doctor, appropriate decision will be communicated to the hospital by us.

The authorization letter mentioning the amount sanctioned for the treatment will be faxed to the hospital. This helps the policy holder to get treatment without paying any money to the hospital.

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