IMPORTANT TELEPHONE NUMBERS

Emergency / Casualty :	**2656 8063 / 2656 8064**
Ambulance :	97692 50010
Hospital Board Line :	022-2675 1000 / 2656 8000
Hospital Fax :	022-2640 7655 / 2640 5119
Admission Department :	2656 8080 / 2656 8081 / 2656 8082
TPA Cell :	2640 5115 / 2656 8089
Appointment-OPD :	2656 8050 / 2656 8051
Billing-Inpatient Department :	2656 1585 / 2656 1585
Billing-OPD Department :	2656 8052 / 2656 8053
Blood Bank Department :	2656 8214
Health Check-up Department :	2656 8241 / 2656 8242 / 2656 8285
Report Dispatch Counter :	2656 1620
MRI Department :	2656 8066
X-Ray, Sonography Department :	2656 8031
CT Scan Department :	2656 8044
Physiotherapy Department:	2675 1526

Lilavati Hospital and Research Centre

More than Healthcare, Human Care

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Lilavati Hospital and Research Centre

More than Healthcare, Human Care

LILAVATI HOSPITAL
MEDICAL TIMES

CONTENTS

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Lilavati Hospital and Research Centre
More than Healthcare, Human Care

EDITORIAL...

CHANGING SCENARIO: HEALTHCARE IN INDIA

We are pleased to bring out the 3rd volume of Lilavati Hospital Medical Times. We are thankful to the readers for their overwhelming response and appreciation for earlier issues. In this issue we are publishing interesting case reports and studies from the diagnostics and therapeutic side of the hospital.

In the section of History of Modern Medicine we are highlighting information about Prof. Howard Kelly. He was an American gynecologist. He was one f the "Big Four" founding professors at the Johns Hopkins Hospital in Baltimore, Maryland. Kelly is credited with establishing gynecology as a true specialty.

The medical times offers relevant information on current developments in the institution, achievements, educational activity.

Healthcare in India is in a state of enormous transition: increased income and health consciousness among the majority of the classes, price liberalization, reduction in bureaucracy, and the introduction of private healthcare financing drive the change.

Healthcare has always been a problem area for our country with larger population belonging to the compromised economical capacity or living below the poverty line. The government and the people have started exploring various health financing options to manage patient care in an appropriate manner in the light of escalating healthcare cost with demand for healthcare services. Health insurance is emerging as an alternative mechanism for financing healthcare.

Health insurance is very well established in several countries. The Insurance Regulatory & Development Authority (IRDA) bill passed by our parliament is the most important beginning of the changes having significant implications for healthcare.

Recently the Government of India has passed the new company law bill which makes it must for the companies to participate for Corporate social responsibility (CSR) projects Accordingly corporate and public sector units (PSU's) are expected to offer services in health, education and other areas required for the weaker sections of the society.

Lilavati Hospital & Research Centre (LHRC) is engaged in offering services for the weaker section of the society through SEWA in a committed manner. We are planning to enhance our benevolent activities by collaborating with various corporate and PSU's to offer extended services in healthcare sector.

Dr. Narendra D Trivedi

OVERVIEW: LILAVATI HOSPITAL & RESEARCH CENTRE

Late Shri Kirtilal Mehta

LILAVATI KIRTILAL MEHTA MEDICAL TRUST

Lilavati Hospital and Research Centre is run and managed by Public Charitable Trust - Lilavati Kirtilal Mehta Medical Trust which was formed in 1978. The Trust was settled by late Shri Kirtilal Manilal Mehta. The Trust has engaged in innumerable charitable endeavors across India.

Late Smt. Lilavati Mehta

NAME OF TRUSTEES

Shri. Prabodh K Mehta	Shri. Chetan P Mehta
Shri. Rashmi K Mehta	Shri. Bhavin R Mehta
Smt. Sushila V Mehta	Shri. Nanik Rupani
Smt. Charu K Mehta	Shri. S. Lakshminarayan
Smt. Rekha H Sheth	Shri. K K Modi
Shri. Niket V Mehta	

LILAVATI HOSPITAL AND RESEARCH CENTRE

Late Shri Vijay Mehta had a wish to fulfill his parents desire to build word-class hospital where everyone in need for relief from disease and suffering come in with a certainty to receive the best possible medical care. His passion, attention to details and perseverance resulted in iconic healthcare landmark called Lilavati Hospital.

Lilavati Hospital & Research Centre is a premier Multi Specialty Tertiary care hospital located in the heart of Mumbai, close to the domestic and the international airport. It encompasses modern health care facilities and state of art technology dedicatedly supported by a committed staff. Lilavati Hospital has focused its operation on providing quality care with a human touch; which truly reflects the essence of its motto, "More than Health Care, Human Care". Being a centre of medical excellence where technology meets international norms and standards, the hospital has got what it takes to be the pioneering quality healthcare institute and hence is one of the most sought after and "Patient Friendly" hospital.

Mission: To provide affordable healthcare of international standard with human care.

Motto: More than Healthcare, Human Care.

OVERVIEW: LILAVATI HOSPITAL & RESEARCH CENTRE

HIGHLIGHTS

- 314 bedded hospital including 72 intensive care beds.
- 12 state-of-the-art well equipped operation theatres.
- Full fledged Dental & Dermo cosmetology clinic.
- Modern Cathlabs having specialized SICU & ICCU with highly trained cardiac care medical staff.
- One of the highest nurses to patient ratio in India, which allows patient care in a more prudent manner.
- Lilavati Kirtilal Mehta Medical trust is an approved research organization by Ministry of Science & Technology having all modern facilities necessary for conducting research
- More than 300 consultants and manpower of nearly 1,800.
- Hospital attends to around 300 In-patients and 1,500 Out-patients daily.

LATEST ADDITIONS

Lilavati Hospital has always striven to provide the best in health care to patients and is always in the front to adopt the latest technology available to its repertoire.

- ***SOMATOM Definition Flash - CT SCAN***
- ***3 Tesla MRI with latest Philips Ingenia having digital technology***
- **Philips Allura Clarity FD10 Low Dose Cathlab**

LILAVATI KIRTILAL MEHTA MEDICAL TRUST RESEARCH CENTRE

The Lilavati Kirtilal Mehta Medical Trust Research Centre is a Scientific and Industrial Research Organization approved by Ministry of Science and Technology (Govt. of India). The Research Centre under guidelines of Dept. of Science & Technology works in close collaboration in evaluating and developing technologies for better health care to the sick people. The research centre have undertaken multidisciplinary researches in the fields of Cardiology, Radiology, Cerebrovascular Diseases (Stroke), Ophthalmology, Chest Medicine, Nuclear Medicine, Pathology, Oncology, Orthopedics etc, to cite a few. One of the important aims of the Research Centre is to establish Community based epidemiological researches in Cerebrovascular disease in stroke. As a policy Drug and Device Trials are not undertaken at the Research Centre.

LILAVATI HOSPITAL TODAY

EQUIPMENT IN FOCUS - CATHLAB

A big leap towards creating safer, minimum radiation environment for patients and treating physicians.

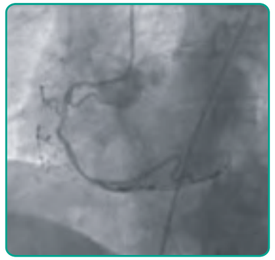
INTRODUCTION

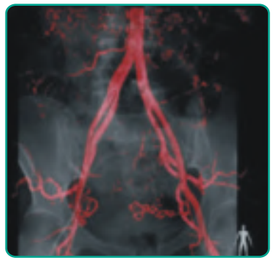
Lilavati Hospital is now equipped with Philips Allura Clarity the latest low-dose Cath lab which is a highly advanced next generation interventional X-ray solution for safe Cardiac & Neurovascular Interventions.

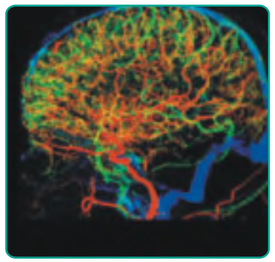
The technology offers industry-leading image quality at a fraction of the dose.

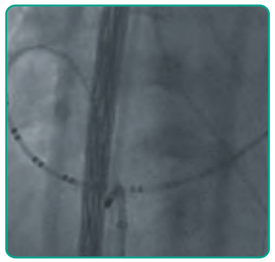
BENEFITS

- The Allura Clarity FD10 is optimized for complex PCI, structural heart and electro-physiology procedures.
- A valuable insight and efficiency through a wide array of advanced interventional tools can be achieved.
- The unique G-shapedstand increases speed and provides excellent patient access. It allows easy reach to the groin without repositioning, facilitates a wide range of projections and provides full body coverage
- It allows the flexibility and quality required to treat congenital heart disease and carry out complex electrophysiology procedures. Dedicated Clarity IQ EPX dose settings help achieve low radiation dose and the excellent image contrast to visualize low inherent tissue contrast or tissue density of patients.
- It helps remove barriers for minimally invasive interventions









CASE REPORTS

Atrial Septal Aneurysm with Severe Mitral Stenosis & Pulmonary hypertension.

Dr. Pavan Kumar, *M.S., M. Ch., F.I.A.C.S, Cardiac Surgeon.* **Dr. P. Sanzgiri,** *MD, DM , Cardiologist,* **Dr. Vidya Suratkal,** *Cardiologist,* **Dr. Leena Pawar,** *MD, Cardiac Anesthesist*

Atrial septal aneurysm (ASA) is a rare but well-recognised cardiac abnormality of uncertain clinical significance. ASA has been reported as an unexpected finding during autopsy but many also be diagnosed in living patients by echocardiographic techniques.

ASA formation can be secondary to interatrial pressure differences but may also be a primary malformation involving the region of the fossa ovalis or the entire septum. ASA may be an isolated abnormality but is often found in association with other structural cardiac abnormalities, e.g. mitral valve prolapse or atrial septal defects.

Several reports suggest a possible link between with otherwise unexplained ischemic stroke.

CASE REPORT

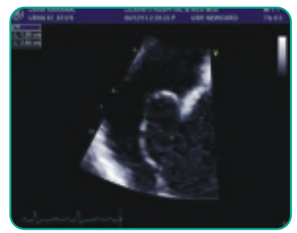
A 46 year old frail built lady Mrs. Usha Karaniya presented with shortness of breath for 1 year with gradual worsening of symptoms. Apart from this, she also complained of frequent black outs. Past history suggested early adulthood rheumatic fever treated on medical line of management.

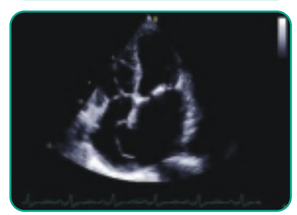
On admission her vital signs were HR: 72/min.irregular, BP:100/60 mm Hg,

RR: 16/min. The Positive findings in physical examination included an opening snap, mid-diastolic decrescendo murmur, preoperative laboratory values were within normal limits and the electrocardiogram showed atrial fibrillation (AF) moderate cardio megaly was found in chest X'ray.

Transthoracic echocardiography revealed severe mitral stenosis (MS) with an estimated valve area of 0.6 cm2 and heavy calcification of leaflet and annular calcification (echocardiographic score: 8-9). The left atrium (LA) was moderately enlarged (5x4.5cm) In addition, the 2-D echocardiographic windows showed a large atrial septum aneurysm (34 x 26 mm) without any septal defect (Fig.1) & (Fig.2).

During the diastolic phase the aneurysm bulged into the right atrium. No other pathology in the other heart valves or chambers was revealed. Estimated left ventricular ejection fraction was 60%, pulmonary artery pressure was 75mmHg and right ventricle function was reported as being within normal range. Selective coronary angiography showed normal coronary arteries.



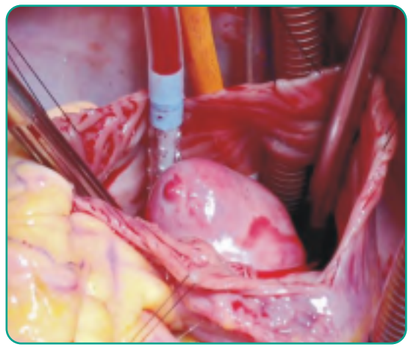


Echocardiography view

Atrial Septal Aneurysm with Severe Mitral Stenosis & Pulmonary hypertension.

SURGICAL TECHNIQUE

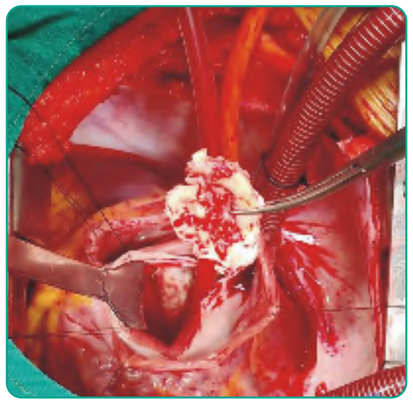
Under general anaesthesia, a standard median sternotomy was done and the pericardium was opened. After heparin infusion (3mg/kg), ascending aorta and bicaval cannulation was performed. After establishment of total cardiopulmonary bypass under normothermia, cardiac arrest was induced using antegrade blood cardioplegia. Right atriotomy was done and septal aneurysm was inspected



(Fig.3). *Surgical view of the IAS aneurysm.*

Which was found to be huge and protruding into the right atrium. The base of the aneurysm was 35mm.

Aneurysm was excised to approach left atrium. Mitral valve was inspected and found to be heavily calcified and irrepairable.



(Fig.4). *Calcified Mitral Valve*

After excision of both mitral leaflets, a 27mm mechanical prosthesis (St. Jude Bi-leaflet prosthesis) was inserted using interrupted pledgeted sutures. After implantation of Mitral Valve prosthesis, resultant Atrial septal Defect created by resection of atrial septal aneurysm (35 x 25mm) was repaired with Decron Patch using running 4-0 polypropylene sutures. The heart chambers were de-aired and atriotomy incisions repaired. The patient was weaned from CPB without inotropic support. After hemostasis and leaving two drains in the mediastinal cavity and pericardial sac, the sternum was closed & transferred to ICU. She made an uneventful recovery thereafter.

The function of the mitral prosthesis was normal on post-operative echocardiography and there was no residual ASD. Trans-mitral mean gradient was 2mmHg and LVEF was estimated at 60%.

Atrial Septal Aneurysm with Severe Mitral Stenosis & Pulmonary hypertension.

DISCUSSION

Since the first report by Gallet et al. in 1985, several echocardiographic studies have suggested that an ASA may behave as a possible cardioembolic source leading to ischemic stroke, particularly when it is associated with a patent foramen ovale (PFO) ASA is an uncommon lesion, with a prevalence of 0.22% in a large prospective study with TTE, 3% - 8% in studies with TEE and 1% in autopsies. ASA is often associated with other cardiac abnormalities including PFO, mitral valve proplapse, and atrial septal defect. Because an interatrial shunt, such as a small ASD or a PFO, has been noted in 54% - 85% of patients with ASA, paradoxical.

Embolism may be one potential mechanism related to stroke. Another possible mechanism is that an ASA itself may be thrombogenic because a thrombus within the ASA has occasionally been visualized by TEE. As mentioned above, ASA is often associated.

With PFO and mitral valve prolapsed, but in the present case it was accompanied with severe MS. So the history of CVA in our patient may be related to AF cardiac rhythm and underlying MS and not necessarily to the septal aneurysm. In conclusion, the ASA is not a rare abnormality and we should keep it in mind in every patient with an embolic event with unknown origin. The surgical indication of ASA depends upon the size of aneurysm and associated abnormalities and complications.

MUMBAI STROKE REGISTRY- WHO GLOBAL STROKE INITIATIVE

Dr. P. M. Dalal, *MD, FAMS, FAHA, Research Director & Consultant Neurophysician*
Dr. M. Bhattacharjee, *MBBS, DGO, Sr. Research Scientist*
Dr. J. Vairale, *MBBS, Sr. Research Scientist*

As part of International Stroke Society (ISS) Global Stroke Initiative project, we at Lilavati Kirtilal Mehta Medical Trust Research Centre initiated prospective community based stroke registry in H-ward Mumbai, on subjects having first-ever-stroke (FES), to collect data on stroke epidemiology and disability status in stroke survivors 1. The study was funded by World Health Organization.

A well-defined population in H-district Mumbai with verifiable census data was selected. 156,861 persons between the age of 25 and 94+ years were screened in Study I (2005-06) and 174,398 persons from the same population were screened in Study II (2009). WHO stepwise approach to stroke surveillance was the operational protocol[2].

The area hospitals, nursing homes, CT diagnostic centers, and around 120 local medical practitioners agreed to cooperate in the study and by weekly personal visits the medical research officers remained in constant touch with them. However, confirmation of stroke diagnosis required its scrutiny by a medical physician or neurologist and was supported by diagnostic test (e.g. CT scan). There were no false-negative cases. All potential stroke (FES) patients as identified were followed up (28 days) by medical research officers either by using 'hot pursuit' (prospective case registration) or by 'cold pursuit' (retrospective case registration) or a combination of both. Multiple overlapping sources of information were used for completeness of case ascertainment. In case of fatal events, death certificates, as issued by qualified medical practitioners, were scrutinized at the municipal death record office and where possible 'verbal autopsy' was carried out to ascertain the primary cause of death.

456 FES were identified in Study I (2005-06) and 223 FES in Study II (2009). The age standardized incidence rate for study population (both sexes) by the direct method using Segi's 1996 world population for Study I was 152 / 100,000 / year (CI 95%: 132-172), likewise for study II it was 137 / 100,000 population (95% CI 119-155) 3 (Fig. 1). At 28 days 29.8% died and 66.2% survived in Study I and 35.4% died and 56.5% survived in Study II. Fig 2 shows that nearly 38.5% were left with moderate to severe disability at 28 days in Study I and 39.9% in Study II by Modified Rankin Scale (score 3-5). Follow up disability at the end of 28 days adds to the burden of DALYs (Disability adjusted life years lost). Major stroke parameters that remained unchanged between the two studies (I and II) were: mean age of stroke (p=0.9519), stroke subtype (p=0.151), risk factor profile (p=0.562), vital status at day 28 (p=0.168) [4,5].

This resurvey has given us vital information. The change in the incidence and mortality rate though not statistically significant could be an indication that the rising trend may be stabilizing. Three years is too short a period to come to any definite conclusion. We believe, 5-10 years surveillance would be a more cost effective approach and similar studies should be conducted in low middle income countries to plan intervention strategies. Trend studies worldwide have shown that better control

MUMBAI STROKE REGISTRY- WHO GLOBAL STROKE INITIATIVE

of hypertension has reduced incidence rates of stroke, so our main focus should be on aggressive hypertension control programme[6].

Currently we are involved in the long term (8-9 years) follow-up study on the morbidity and mortality profile of the same defined population.

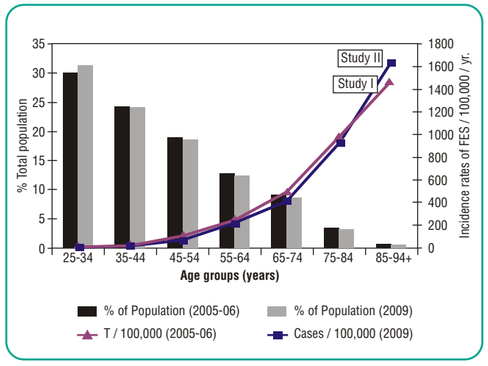


Fig 1: *Annual incidenc of first-ever-stroke per 100,000 and total population distribution (%) 2005-06 (Study-I) and 2009 (Study-II).*

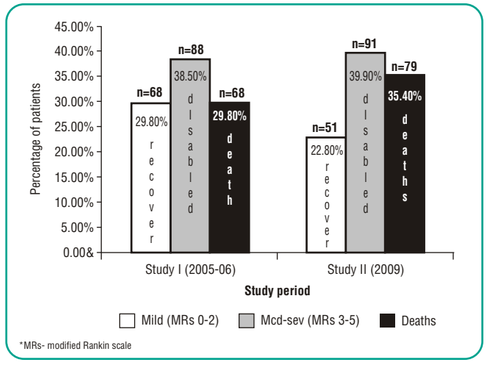


Fig 2: *Mortality and Morbidity profile at 28 days post stroke by Modified Rankin Scale in Study I (2005-06) and Study II (2009).*

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Q-S ND YAG LASER TO TREAT NEVUS OF OTA

Dr. S. G. Parasramani, *MD, DDV (Dermatology)*

Pigmented skin conditions cannot be treated satisfactorily with local applications or systemic therapy alone. Nevus of Ota is also called nevus fuscocaeruleus opthalmo-maxillaris. The skin lesion consists of blue grey macular lesion affecting the sclera and ipsilateral facial skin in the distribution of the trigeminal nerve.

In 1916, Pusey described a Chinese student with both scleral and facial pigmentation. It was in 1939, Ota from University of Tokyo described this condition and since then this melanocytic nevus is known as Nevus of Ota.

Females are more often affected than males. Female to male ratio is 80:20. Nevus of Ota is common in the dark skinned individuals. Familial occurrence has been described, but the entity is not a heritable one.

Dermal melanocytes are of neural crest origin and have been arrested during migration. Occasional cases have been reported after trauma. Thus Nevus of Ota can be congenital or acquired.

Clinical features: Nevus of Ota is usually unilateral but can also be bilateral in distribution, affecting the skin supplied by the first and second division of the trigeminal nerve. Lesions can also occur on the nose, mucous membrane of nose and mouth, external auditory canal, tympanic membrane, area supplied by the 3rd division of trigeminal nerve and neck. Leptomeninges are rarely involved.

About two thirds of the patients have bluish staining of the ipsilateral sclera. There may be melanocytic infiltration of conjunctiva, cornea, iris, fundus oculi, optic papilla, optic nerve, retrobulbar fat and periosteum of orbital bone.

50% cases of nevus of Ota are congenital, remainder appear in 2nd decade, rarely late or in pregnancy.

Histopathology: In the upper and mid-dermis diffusely scattered dendritic, stellate and fusiform melanocytes are seen. These tend to lie parallel to the skin surface and also collect around the adnexa and blood vessels. Melanin pigmentation is heavy. The overlying epidermis is spared except there is some increase in melanin pigmentation.

Differential diagnosis include the following conditions lentigo maligna, melasma, superficial malignant melanoma, precancerous melanomas of the eye, nevus of the conjunctiva, trauma, café au lait spots, nevus flammeus, nevomelanocytic nevii, blue nevus and mongolian spots.

Course: Lesions do not disappear spontaneously. Changes in colour do occur. Lesions darken during menses. Intensification of pigmentation after age of 11 is common.

Malignant change can occur in the skin, eye and brain. Associated sensori neural deafness has been described.

Prior to laser therapy, camouflaging of pigmentation was the only treatment available.

Laser therapy: Nevus of ota, a hitherto untreatable condition can be very well treated with laser. The target chromophore is a nevus cell (size 10 micron) which has a Thermal relaxation time (TRT) of 100 micro second. Lasers having a pulse width which is equal to or of lesser duration than the TRT are to be used to target these chromophores.

1064-nm Q-Switched Nd-YAG laser has a pulse width of nano seconds which provides a very good safety margin, with a fluence which is sufficiently large to treat various conditions, different spot sizes to suit the size of lesions and has a depth of penetration of 2-3 mm in the dermis. This reaches the target chromophore adequately. Its absorption coefficient for melanin is 55 cm-1. Thus it causes lesser epidermal damage when treating dermal lesions. This feature helps to prevent PIH in Indian skin.

Q-S ND YAG LASER TO TREAT NEVUS OF OTA

Laser parameters: 1064 nm, pulse width 10 nanosec, Spot size (SS) - 6 mm with fluence (F) 3.9 j/cm^2, followed by SS 4 mm with F 9 j/cm^2 and SS 3 mm with F 9-12 j/cm^2, Repetition rate (RR) - 10 HZ, Cooling with liquid nitrogen spray.

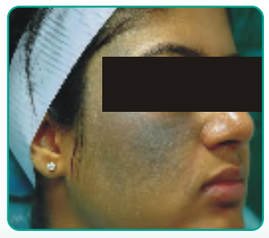
Procedure: Explain procedure to the patient. Give realistic expectation and take consent. Apply local anesthetic cream as a thick layer on the area to be treated and cover with micropore tape. Wait for 1 hour.

Patient is made to lie down comfortably and covered with a bed sheet. Napkin is placed on the patient neck below. Clean face with cleanser. Gauze pieces are placed over the patient's eyes and then covered with an eye shield. Check the laser settings on the main panel and hand piece. Clean the lens on the hand piece.

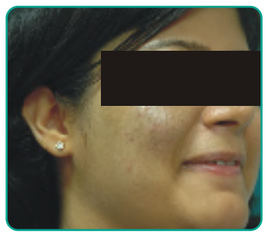
Laser operator and assistant should wear laser protective glasses along with face mask and hand gloves. Test fire the laser on the bed sheet before taking passes on the patients skin. Inform the patient that you are starting the procedure and they would feel a stinging sensation. Allay their fears and once patient is comfortable continue the procedure.

Laser hand piece should be perpendicular to the skin surface and moved slowly with a 10% overlap. Epidermis is cooled with liquid N_2 spray. Purpuric spots to bleeding points are the end point of laser therapy.

Oral Paracetamol is given to reduce pain. Treated area is to be cleaned with normal saline and dressed with an antibiotic cream for 1 week. Use of sunscreen with SPF 50 and pigment lightening creams are recommended till next session which is 2 months later.



Pretreatment photograph



After 6 sessions of laser therapy with a gap of 2 months between sessions

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ULTRASOUND IN ANAESTHESIA: A BIG LEAP

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The use of ultrasound imaging techniques in Anaesthesia has transformed the clinical scenario. This technology that was typically restricted to radiologist has changed the perspective in Anaesthesia.

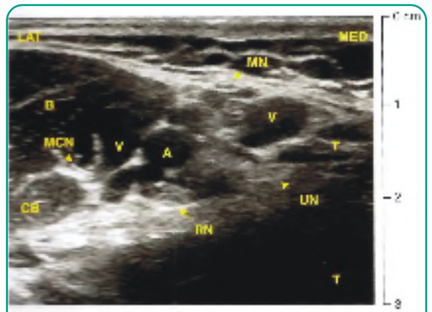
Ultrasound describes acoustic waveforms above the threshold for human hearing (20 kHz). In medicine for imaging typically frequencies between 2.5-15 MHz are used. The image is built up from reflected sound signals and is reproduced visually on a grey scale. The time delay for return of reflected sound waves is proportional to the depth of the structures below the probe.

There are many different modes of ultrasound imaging, including A mode, B mode, M mode and various Doppler-based devices. In anaesthesia most commonly used is the B mode imaging (more correctly termed two-dimentional real-time ultrasound).

The B mode ultrasound can be used for various procedures in anaesthesia as follows:

USE OF ULTRASOUND IN PERFORMING NERVE BLOCKS:

Its use in regional anaesthesia is rapidly becoming an area of increasing interest. The operator is able to view an image of the target nerve directly, guide the needle in real time and monitor the spread of local anaesthetic. The key to successful regional anaesthesia is deposition of local anaesthetic accurately around the nerve structures. This results in faster onset, longer duration and improved quality of the nerve block. Risk of intravascular injections can be eliminated. `Blind techniques` relying on parasthesia, twitches can now be dispensed with.



B: Biceps muscle
CB: Coracobrachialis muscle
T: Triceps Muscle
V: Axillary veins
A: Acillary artery
MN: Median nerve
UN: Ulnar nerve
RN: Radial nerve
MCN: Musculocutaneous nerve

Several studies have shown increased efficacy and safety when using ultrasound to aid regional anaesthesia when compared with the traditional anatomical landmarks and nerve stimulation techniques. Chan et al.[1] conducted a randomized controlled trail of 188 patients undergoing axillary plexus blocks. He compared between the ultrasound and the nerve stimulation technique. Block success rate was higher with ultrasound (82.8%, p=0.01) as compared with nerve stimulation (62.9%). The nerve block is successful with ultrasound imaging even in the absence of motor response as shown by Beach et al.[2]. Ultrasound will soon become the main method of guidance in regional anaesthesia as supported by the publication of national institute for health and clinical excellence (NICE from UK)[3].

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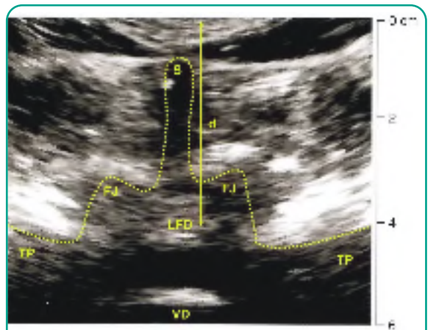
USE OF ULTRASOUND IN EPIDURAL AND SPINAL ANAESTHESIA:

In January 2008 NICE published guidelines that suggested that ultrasound could be used in two different ways to facilitate catheterization of the epidural space. One method is the use of real-time ultrasound imaging to observe the passage of the needle towards the epidural space. The second method (pre-puncture ultrasound) is the use of ultrasound as a guide to the conventional technique, using an initial scan of the patient`s lumbar spine to identify the midline, interspinous spaces and depth of the epidural space.

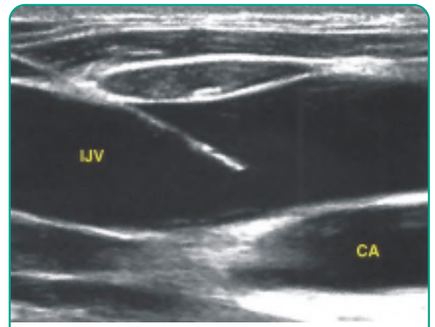


S: Vertebral spine
FJ: Facet joints
TP: Transverse processes
LFD: Ligamentum flavum / dura complex
VD: Ventral dura
d: Depth of LFD

Grau et al.[5] conducted two randomized controlled studies of a total of 372 pregnant women receiving obstetric epidurals. They compared the use of pre-puncture ultrasound with no ultrasound. The mean numbers of puncture attempts were 1.3 and 1.5 verses 2.2 and 2.6 respectively ($p < 0.013$ and $p < 0.001$). Ultrasound can be used to pre-scan the lumbar spine in difficult cases, confirming both the midline and the depth to the ligamentum flavum and epidural space, decreasing the failure rate and the incidence of complications.

USE OF ULTRASOUND FOR VASCULAR ACCESS:

Central venous access has become an integral part of management of critically ill patients. Central venous catheter cannulation is associated with a number of technical complications. The common ones are arterial puncture (10.6-13%), hematoma formation (4-8.4%), brachial plexus injury (1.7%), pneumothorax (0–6.6%) and hemothorax (1%).



Entry of needle into IJV

Ultrasonography-guided procedures can save time and increase the accuracy, safety and efficacy. The use of USG can ensure higher success rates in children and infants. Insertion of IJV catheters using the landmark technique may be associated with high failure rates of up to 35%. On the other hand, for USG-guided IJV lines, success rates ranging from 81.3 to 100% have been reported.

The inclusion of ultrasound in anaesthesia is proving to be good advancement in terms of quality, safety skills and cost effectiveness.

ULTRASOUND IN ANAESTHESIA: A BIG LEAP

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INFANTILE COLONIC POLYPS MIMICKING INTUSSUSCEPTION - A CASE OF PEUTZ - JEGHERS SYNDROME

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INTRODUCTION:

Peutz-Jeghers syndrome is a rare autosomal dominant disorder characterized by gastrointestinal hamartomatous polyps and melanin pigmentation of the skin and the oral mucosa[1,2]. It is a heterogeneous disorder and Peutz Jeghers kindred having polyposis without melanosis and vice versa have been reported[3]. Gastrointestinal hamartomas usually ranging from 1mm to more than 4cm are found in the small intestine in 90% of cases, and in the colon in 50% of cases. In most cases, colonic or small intestine intussusceptions or intestinal bleeding, aid in the diagnosis. The site, size, number of the polyps, complications and long term prognosis determine the need for surgical intervention.

CASE REPORT:

7 month old male presented with severe abdominal pain and multiple episodes of diarrhea over a day. There were no episodes of vomiting or blood in stools. On examination the child was well nourished, afebrile and mildly dehydrated. There was generalized abdominal tenderness on palpation and a lump palpable in left paraumbilical region.

On investigation, Hb was 9.5g/dl, leukocytes were 14,120/µl with normal differential count, serum electrolytes were normal except for mild alkalosis (bicarbonate-13meq/l). An erect X-ray abdomen showed few air fluid levels in the small intestine without free gas under diaphragm. An ultrasound scan of the abdomen reported a 'bowel within bowel' appearance and 'doughnut sign' in left paraumbilical region, suggestive of an intussusception. An attempt was made at reducing the intussusception, which was unsuccessful. Hence, the child underwent an emergency laparotomy through a supraumbilical transverse incision.

However on exploration, there was no intussusception identified in the right side of the abdomen. A large mass of around 6 x 8cm was palpable in the splenic flexure of descending colon. A colostomy was done in the transverse colon and the mass which comprised of numerous sessile polyps was resected. Histopathology revealed cauliflower like, multiple, firm sessile polyps characteristic of Peutz-Jeghers polyps. Colonoscopy done after one month through the colostomy showed multiple sessile 0.5cm polyps throughout the colon and one large polyp of 2 cm was seen near proximal stoma, which was resected. The colostomy was closed at the same sitting. There were no postoperative complications.

The child was examined for other markers of Peutz-Jeghers syndrome such as mucocutaneous melanosis, which were absent. However, the father had multiple perioral pigmented maculae measuring 2 x 2cm, which were also present on his palms, soles and genitalia. On follow up over a year, the child is thriving well. A check colonoscopy was carried out after 1 year from the

INFANTILE COLONIC POLYPS MIMICKING INTUSSUSCEPTION - A CASE OF PEUTZ - JEGHERS SYNDROME

date of surgery which showed cobblestone appearances of the transverse and descending colon. No polyps were seen. Ascending colon, sigmoid and rectum were normal. Check colonoscopy of the child, after 2 years was advised, as well as thorough work up of other family members.

DISCUSSION:

PJS occurs due to a mutation in the LKB1 / STK11 gene located on chromosome 19p13.3. With an incidence of 1 in 120,000 births[6], one third of patients present with symptoms in the first decade of life and 50-60% 0f patients before the age of 20 years. It is rare in infancy. Most of them present with abdominal pain and gastrointestinal bleeding secondary to intussusception[1]. According to Giardiello et al, a definitive diagnosis is made in the presence of a hamartomatous polyps confirmed on histopathology and at least 2 of the following criteria: **a) family history b) mucocutaneous pigmentation c) multiple gastrointestinal hamartomatous polyps[5].** Mucocutaneous pigmentation, if present, is seen early in infancy, in the perioral and buccal region in 95% cases[4] which was absent in our case. In addition, the father having mucocutaneous pigmentation in the absence of pigmentation in the child has been reported earlier[1] which was also present in our case. The hamartomatous nature of colonic polyps in PJS is well established.

In particular Peutz Jeghers polyps have a unique growth pattern, which represents pseudoinvasion. Although the hamartomas are benign, patients with PJS have a substantially increased risk of intestinal and extraintestinal malignancy[5]. Hence, infants presenting with intussusception require a high index of suspicion intraoperatively to diagnose PJS. It is not clear whether the young age at diagnosis of PJS, as in our case means that the malignancy could occur earlier.

Modalities of management include a combination of laparotomy and endoscopy, laparoscopy in the recent times. Removal of polyps greater than 1.5cm is advocated because these are more likely to produce symptoms or complications. Indications for bowel resection include, adenomatous changes in an incompletely removed polyp, as well as patients presenting with intussusception, obstruction or gastrointestinal bleeding[6]. In addition, on table endoscopy has been shown to increase the detection rate of asymptomatic polyps, allowing their resection and reducing the re-laparotomy rate[7]. Surveillance in the form of upper and lower endoscopy in a symptomatic PJS patient is advisable, once in every 2 years[4], in view of increased risk of recurrence, intestinal obstruction and malignancy.

In conclusion, PJS is a rare syndrome in infancy. Patients of PJS presenting with symptomatic gastrointestinal polyps measuring more than 1.5cm or multiple sessile symptomatic polyps, should undergo polypectomy in order to prevent complications and recurrence. As the increase in risk of malignancy has been proven in these patients, they will require surveillance every 2 yrs and a thorough work up of their family members.

INFANTILE COLONIC POLYPS MIMICKING INTUSSUSCEPTION - A CASE OF PEUTZ - JEGHERS SYNDROME

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WHY DOES INGUINAL HERNIA RECUR...?

Dr. Narendra Mehta, *Herniologist*

INTRODUCTION

Nearly 2% of population suffers from hernia of various types.

Hernia surgery is one of the commonest surgery globally.

Recurrence of hernia is physical, psychological, economical disaster to a patient & reputational to a surgeon.

Hernia recurrence is usually blamed on surgeon which is only true to a small extent as there are so many causes of failure of hernia repair not related to surgical performance.

METHODS

All together about 6400 surgical hernia repair done at various hospitals in Mumbai since 1975 onwards were reviewed. Total recurrences were 172.

Each adult patient of recurrent hernia was categorised into two age groups 21-40 & 41-90 years. Relevant medical records of previous hernia surgery including history, type of hernia, complicated or uncomplicated, associated disease like Diabetes, Hypoproteinimia, Atherosclerosis, COPD, Asthma, Obesity, Chr. Cough, Cold & Constipation, Malnutrition, debilitating diseases like Cirrhosis of liver, CRF& occupation were noted. Technique of surgery [Basinis, shouldice's, mesh repair-flat mesh, PHS, FREEDOM], post-op recovery, healing, resumption of work were noted & analysed.

RESULTS

Recurrence of Hernia was much more common in tissue repair, more so in patients with one / more of the above mentioned risk factor/s. [more in Basini's lesser in shouldice's]. Amongst mesh repair, recurrence was relatively more in flat mesh than PHS [only one recurrence out of 500 cases reviewed].

SUR. TECH:	BASINI'S	SHOULDICE'S	FLAT MESH	PHS	FREEDOM
NO. OF CASES	780	3000	2205	530	8
RECURRENCE	98	65	10	1	0
%	12.56	1.97	0.45	0.2	0

Risk Factors:

Hereditary genetic factor

Chronic cough and sneezing.

Tuberculosis.

Chronic constipation.

Enlarged prostate.

Obesity.

Liver diseases like cirrhosis of liver.

Protein Malnutrition: Primary / Secondary

Lifting heavy weights.

Heavy smoking increases chances of developing Hernia.

WHY DOES INGUINAL HERNIA RECUR...?

People with polio or paralysis affecting lower limb are prone to develop Hernia due to weakness of muscles.

Weakness of the muscle due to old age.

Post-operative wound infection in an operated patient with poor muscle healing resulting into weakness of abdominal wall & hernia.

Occasionally after appendix operation,due to damage to the nerves in the region.

Certain yogic exercises or aerobics. However, cycling or kicking bike paddle doesn't cause Hernia.

FOLLOWING ARE IMPORTANT POINTS OF CONSIDERATION

TECHNIQUE

As we know that Basini's repair once considered good repair had recurrence rate of about 20 % which was better than various previous techniques. Shouldice technique improved on that with 2-5% rec rate mesh deployment improved result still further.

But securing posterior wall with the Mesh PHS & INSIGHTRA PROFLOR helped so much that recurrence has become a rarity. So older techniques were partially responsible for recurrence

TECHNICIAN

Adequate knowledge of different variants of Ing hernia

Adequate experience

Proper use or performance of a particular technique

Adequate knowledge of normal & morbid anatomy & associated diseases

Proper evaluation of patients as regards general health & healing capacity

Proper evaluation of age related tissue changes dedication in general

TECHNOLOGY

Modern technology includes for surgery

Well equipped operation theatres.

Infection control systems.

Electro-coagulatory machines.

INSTRUMENTS, MEDICINES : 3D mesh like proflor, PHS ,UHS , bilayered mesh deployment

In spite of fulfilling all above mentioned criteria, if recurrence of hernia occurs. There is a cause in the given patient like:

Inadequate rest, minimum 2-3 days Post OP

Excessive cough cold -sneezing

Severe habitual constipation

Heavy chr. smoking

Strenuous work within first three months post OP

Presence co-morbidity like CCF, cirrhosis liver, CRF.

Protein malnutrition

Debilitating diseases like IBS, Tuberculosis, malignancy

Neuro logical problems like Ipsilateral, Hemiplegia, Paraplegia

WHY DOES INGUINAL HERNIA RECUR...?

Distal outlet obstruction urinary or fecal

Severe atherosclerotic condition of abdominal arteries

Immunosupressive condition

Local radiation in about 6months of pre or post op period

Surgical site infection-deep seated

POST HERNIA SURGERY DO'S AND DON'TS

Do's :

Ambulatory Hernia surgery allows patients to walk as much as possible, which helps in faster recovery. One can climb the staircases as per one's ability.

Normal diet and plenty of liquids are advised, with mild laxatives at night to help smooth bowel movement.

Rest at home for 2-3 days is advised.

Patient can take bath everyday if advised.

To take medicines regularly as advised.

To visit his Surgeon periodically for first 3 months and thereafter when required.

Don'ts :

Avoid strenuous work and lifting weight over 5kg, for 2 months.

Avoid diet which may cause cough and cold, and if present to take treatment for the same immediately.

Avoid bending forward too frequently.

Do not continue to suffer from constipation, but treat it at the earliest.

Do not gain weight for at least 6 months post-operatively.

Avoid talking too loudly.

Avoid Yoga and other exercises as per the advice of his Surgeon and perform only such exercises as permitted by the Surgeon.

CONCLUSION

Cough, Constipation are major risk factors in recurrent patients. Post-OP wound infection, poor muscular health due to malnutrition, Hemiplegia, Neurological disorder, Ascites are contributory factors so much so when tissue repair is performed.

Technique of hernia repair chosen & its perfect performance is of paramount importance.

BENEVOLENCE

The social service wing of the hospital-**SEWA** - serves to the health requirements of the needy people. This department seeks to bridge the gap between the needy patients and the fast evolving medical technology. Various social activities such as Free OPD, services to senior citizen, sending mobile vans to Adivasi areas to organizing free health checkup camps are undertaken as an ong-going process. The Roshni Eye bank managed by Lilavati Hospital is a well equipped comprehensive centre for cornea removal, supplying, processing, storing, and corneal transplantation.

BENEFICIARIES

Year	Free OPD	Sewa Mobile Clinic
2011-2012	16327	23010
2012-2013	14965	24211

6th September, 2013: Pediatric Camp at Powai

Free OPD

6th October, 2013: Old Age Camp at Santacruz

Mobile Medical Clinic

Lilavati Hospital and Research Centre

More than Healthcare, Human Care

SAVE AND EMPOWER GIRL CHILD

Doctors of Lilavati hospital feel that they need to play a significant role in protecting Girl Child from deliberate harm to ensuring her well-being, from conception to adulthood. They may as concept formers and advice givers play a major role in correcting the distorted views that parts of society have formed and are passing on to their future generations

Hence in April, 2012 in line with the urgent need to first create awareness of several concerns relating to girl children in Indian and then address them, Doctors and Management of Lilavati Hospital launched its most ambitious campaign, "SAVE AND EMPOWER GIRL CHILD". This initiative was aimed at bringing the treatment of girl child by individuals and society at par with the boy. The event was a great success with dignitaries from the various fields came in to support the noble cause and grace the occasion. Leading Fashion designer Manish Malhotra paid tribute to this cause with his spectacular fashion show.

This year on 5th Feb, Cineyug Group joined hands with Lilavati Hospital to show their solidarity in celebrating the girl child. The event highlighted Lilavati Hospital's efforts and achievements so far and the plans for the future whereby doctors and management of Lilavati Hospital has taken pledge to conduct free health checkup camps for 50,000 girl children.

At the onset of this year, On World International Girl's day we have screened 754 girl children at Lonavala for a Municipal school. The screening included Nutritional Anaemia, Rickets, Menorrhagia, Refractile errors and Dental caries etc.

HISTORY OF MODERN MEDICINE

Father of Modern Medicine

Howard Atwood Kelly, M.D.
(February 20, 1858 - January 12, 1943)

He was an **American gynecologist.** He was one of the "Big Four" founding professors at the **Johns Hopkins Hospital** in Baltimore, Maryland. Kelly is credited with establishing gynecology as a true specialty.

EPONYMS

HKelly's sign - If the ureter is teased with an artery forceps, it will contract like a snake or worm.

Kelly speculum - A rectal speculum tubular in shape and fitted with an obturator (disk) obturator.

Kelly clamp - Large haemostatic forceps; arguably among the most common and best known surgical instruments ever.

Kelly's stitch - Surgery for the bladder neck to correct stress incontinence of urine.

WILLIAM OSLER QUOTES

The philosophies of one age have become the absurdities of the next, and the foolishness of yesterday has become the wisdom of tomorrow.

He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all.

The value of experience is not in seeing much, but in seeing wisely.

The best preparation for tomorrow is to do today's work superbly well.

LATEST FEATHERS IN CAP...

Efforts and hard work put in by team Lilavati Hospital has resulted in various awards and accolades:

- *Hospital has been recognized as **"India's best Multi Speciality Hospital-Megapolis"** by ICICI Lombard and CNBC TV 18 **in India Healthcare awards 2013.***
- *Hospital has been recognized as **"India's best Multi Speciality Hospital-Metro"** by ICICI Lombard and CNBC TV 18 **in India Healthcare awards 2012.***

*In 2013; 'THE WEEK' magazine has rated Hospital as **'Number 1 Multispeciality Hospital in Mumbai'.***

- *Hospital has been rated amongst **'Top 10 Hospitals of India'** 2013 by 'THE WEEK' magazine.*

*Hospital is **Gold Winner** of **"Reader's Digest Trusted Brand Award 2012"** in category 'Speciality Hospital'.*

- *Hospital emerged as the **Runner-Up** in the category **India's Most Popular Maternity Hospital;** in the inaugural edition of **Child Best Awards 2013** by Child India Magazine*

- *Hospital is an official **ESMO (European Society for Medical Oncology) Asia CME Partner** Centre in Colorectal Cancer program in India.*
- *Quality Council of India (QCI) has accredited Lilavati Hospital & Research Centre with **NABH** in February 2011.*

In order to ensure that entire system is process driven and not person / individual driven; we at decided to get Lilavati Hospital NABH (National Accreditation Board for Hospitals and Healthcare Providers) Accredited.

NABH is need of the hour. It broadly focuses on Structure, Processes and Outcomes. NABH accreditation helps in enhancing Patient Satisfaction, Employee Satisfaction and Operational Efficiency by: ensuring ownership of clinical and non-clinical functions at all levels by suitably qualified and experienced professionals, ensuring that employees follow laid down policies and procedures and by monitoring key indicators for continual improvement.

SERVICES

MEDICAL

Anesthesiology
Audiology and Speech therapy
Cardiology
Chest Medicine
Chronic Pain management
Dental
Dermo Cosmetology
Diabetology & Endocrinology
Gastroenterology
Haematology
Hair Transplant
Internal Medicine
Infectious diseases
Nephrology
Neurology
Head and Migraine Clinic
Psychiatry / Psychology / Neuropsychology
Medicine Oncology
Pediatrics
Rheumatology
Sleep Medicine

LABORATORY SERVICES

Pathology
Microbiology
Histopathology
Blood Bank

CRITICAL CARE

Intensive Care Unit (ICU)
Intensive Cardiac Unit (ICCU)
Surgical Intensive Care Unit (SICU)
Paediatric Intensive Care Unit (PICU)
Neo-Natal Intensive Care Unit (NICU)
Paralysis & Stroke Unit

SURGICAL

Bariatric Surgery
Cardiothoracic Surgery
Colorectal Surgery
ENT and Head & Neck Surgery
Gastro Intestinal Surgery
General Surgery
Gynecology, Obstetrics & IVF
Transplant: Corneal & Kidney
Minimal Invasive Surgery (Laproscopic Surgery)
Neuro Surgery
Spine Surgery
Onco Surgery
Ophthalmology
Orthopedics, Sports Medicine
Pediatric Surgery
Plastic & Reconstruction Surgery
Urology, Andrology
Vascular Surgery

DIAGNOSTICS

Imaging Services
CT
MRI
X-ray
BMD
OPG
Sonography (USG)
Mammography
Nuclear Medicine
Interventional Radiology

24 HRS SERVICES

Ambulance
Emergency
Pharmacy

DOCTORS ASSOCIATED WITH LILAVATI HOSPITAL

Andrologist
Dr. Shah Rupin S.

Anaesthesiologist
Dr. Mascarenhas Oswald
Dr. Merchant Ami
Dr. Barot Hemangini
Dr. Bakshi Vaibhavi
Dr. Budhakar Shashank
Dr. Gandhi Nisha
Dr. Gaiwal Sucheta
Dr. Gawankar Prakash
Dr. Kharwadkar Madhuri
Dr. Kulkarni Satish K.
Dr. Mahajan Anjula
Dr. Khatri Bhimsen
Dr. Shah Falguni

Audiology & Speech Therapists
Dr. Bhan Satyan
Dr. Gorawara Pooja
Dr. Parulkar Bakul
Dr. Patadia Rajesh

Cardiovascular Surgeons
Dr. Bhattacharya S.
Dr. Jaiswal O. H.
Dr. Kaushal Pandey
Dr. Kumar Pavan
Dr. Rachmale G. N.
Dr. Nand Kumar
Dr. Mehra Arun P.
Dr. Shetty Mohan
Dr. Joshi Suresh
Dr. Honnekeri Sandeep T.
Dr. Hamdulay Z.

Cardiologists
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Dr. Bang Vijay
Dr. Dargad Ramesh R.
Dr. Gokhale Nitin S.
Dr. Hemant Kumar
Dr. Jhala Darshan
Dr. Kothari Snehal N.
Dr. Lokhandwala Yash
Dr. Mehan Vivek
Dr. Mehta Ashwin B.
Dr. Merchant S. A.
Dr. Menon Ajit R.
Dr. Nabar Ashish
Dr. Punjabi Ashok H.
Dr. Samuel K. Mathew
Dr. Sanzgiri P. S.
Dr. Shah Chetan
Dr. Sharma Anil K.
Dr. Suratkal Vidya
Dr. Vijan Suresh
Dr. Vyas Pradeep R.
Dr. Vora Amit
Dr. Vaishnav Sudhir
Dr. Mehta Haresh G.

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Dr. Prabhudesai P. P.
Dr. Parkar Jalil D.
Dr. Rang Suresh V.
Dr. Chhajed Prashant

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Dr. Deshpande Dilip
Dr. Gala Dhimant
Dr. Joshi P. D.
Dr. Khatavkar Arun
Dr. Kamdar Rajesh J.
Dr. Parulkar B. P.
Dr. Parulkar Darshan

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Dr. Deshmukh Manoj
Dr. Kulkarni Makrand
Dr. Mehta Mona
Dr. Ingule Amol
Dr. Chauhan Sonal
Dr. Sobti Shyam K.

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Dr. Oberai Chetan
Dr. Mehta Nimesh
Dr. Parasramani S. G.

Diabetologists
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Dr. Panikar Vijay

ENT Surgeons
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Dr. Kapadia Sanjay P.
Dr. Pusalkar A.
Dr. Parasram Kamal S.

Gastro Surgeons
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Dr. Kulkarni D. R.
Dr. Mehta Hitesh
Dr. Varty Paresh
Dr. Wagle Prasad K.
Dr. Zaveri Jayesh P.

Gastroenterologists
Dr. Barve Jayant S.
Dr. Gupta Ravi
Dr. Kanakia Raju R.
Dr. Khanna Sanjeev
Dr. Phadke Aniruddha Y.
Dr. Parikh Samir S.
Dr. Shah Saumil K.

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Dr. Mehta Narendra
Dr. Shastri Satyanand B.
Dr. Shetty Sadanand V.
Dr. Trivedi Narendra

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Dr. Coelho Kiran S.
Dr. Dhanu Ranjana V.
Dr. Dhanu Vilas R.
Dr. Nanavati Murari S.
Dr. Pai Rishma D.
Dr. Palshetkar Nandita
Dr. Pai Hrishikesh
Dr. Shah Cherry C.
Dr. Goyal Swarna

Haematology Clinical
Dr. Agarwal M. B.
Dr. Bhave Abhay

Headache & Migraine Clinic
Dr. Ravishankar K.

Infectious Diseases Consultant
Dr. Nagvekar Vasant C.

Intensivist
Dr. Vas Conrad Rui
Dr. Ansari Abdul
Dr. Jiandani Prakash

Lilavati Hospital and Research Centre

More than Healthcare, Human Care

DOCTORS ASSOCIATED WITH LILAVATI HOSPITAL

Interventional Radiologists
Dr. Sheth Rahul
Dr. Warawdekar Gireesh
Dr. Limaye Uday S.

Joint Replacement Surgeons
Dr. Maniar Rajesh N.

Nephrologists
Dr. Mehta Hemant J.
Dr. Shah Arun
Dr. Suratkal L. H.
Dr. Upadhyaya Kirti L.

Neurologists
Dr. Chauhan Vinay
Dr. Sirsat Ashok M.
Dr. D'souza Cheryl
Dr. Dalal P. M.
Dr. Vyas Ajay

Neuropsychologist
Dr. Panjwani Siddika

Neuro Surgeons
Dr. Ramani P. S.
Dr. Goel Atul
Dr. Dange Nitin
Dr. Shah Rajan

Nuclear Medicine
Dr. Lele R. D.
Dr. Luthra Karuna

Oncologists
Dr. R. Gopal
Dr. Smruti B. K.
Dr. Pendharkar Dinesh

Oncosurgeons
Dr. Deshpande Ramakant K.
Dr. Jagannath P.
Dr. Parikh Deepak
Dr. Sharma Sanjay
Dr. Shah Rajiv C.

Ophthalmology
Dr. Agrawal Vinay
Dr. D'souza Ryan
Dr. Mehta Salil
Dr. Nadkarni Shivram
Dr. Nagvekar Sandip S.
Dr. Shah Manish
Dr. Vaidya Ashish R.
Dr. Mehta Himanshu

Orthopaedic Surgeons
Dr. Agrawal Vinod
Dr. Archik Shreedhar
Dr. Chaddha Ram
Dr. D'silva Domnic F.
Dr. Desai Sanjay S.
Dr. Deshmukh Niranjan
Dr. Garude Sanjay
Dr. Joshi Anant
Dr. Mukhi Shyam R.
Dr. Nadkarni Dilip
Dr. Padgaonkar Milind
Dr. Panjwani Jawahar S.
Dr. Vengsarkar Nirad S.
Dr. Vatchha Sharookh P.
Dr. Warrier Sudhir
Dr. Thakkar C. J.

Pathologists
Dr. Chavan Nitin
Dr. Dhunjibhoy Ketayun R.
Dr. George Asha Mary
Dr. Rangwalla Fatema
Dr. Mehta Kashvi
Dr. Saraswat Shubhangi
Dr. Tampi Chandralekha

Paediatric Surgeons
Dr. Johari Ashok (Ortho)
Dr. Karmarkar Santosh J.
Dr. Redkar Rajeev G.

Paediatricians
Dr. Ali Uma
Dr. Avasthi Bhupendra
Dr. Chittal Ravindra
Dr. Gupta Priyam
Dr. Kanakia Swati R.
Dr. Lokeshwar M. R.
Dr. Mehta Kamini
Dr. Shah Krishnakumar N.
Dr. Sharma Shobha
Dr. Ugra Deepak

Paediatric Neurology
Dr. Shah K. N.

Pain Management
Dr. Baheti Dwarkadas
Dr. Jain Jitendra

Physicians / Internal Medicine
Dr. Ballani A. G.
Dr Bandukwala S. M.
Dr. Nair C. C.
Dr. Dalvi Sunil G.
Dr. Jadwani J. P.
Dr. Gidwani Vinod N.
Dr. Medhekar Tushar P.
Dr. Shimpi Shrikant

Plastic Surgeons
Dr. Kumta Samir
Dr. Pandya Narendra
Dr. Purohit Shrirang

Psychiatrist
Dr. Deshmukh D. K.
Dr. Shah Bharat R.
Dr. Vahia Vihang N.

Psychologist
Dr. Chulani Varkha

Physician / Rheumatologist
Dr. Sangha Milan
Dr. Kalke Shubhada

Physiotherapist
Dr. Garude Heena

Spine Surgeon
Dr. Bhojraj Shekhar
Dr. Mohite Sheetal

Urologists
Dr. Pathak Hemant R.
Dr. Raina Shailesh
Dr. Sanghvi Nayan
Dr. Shah Sharad R.
Dr. Vaze Ajit M.
Dr. Raja Dilip

Urological Laparoscopic Surgeon
Dr. Ramani Anup

Vascular Surgeons
Dr. Patel Pankaj
Dr. Pai Paresh