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THE EXCHANGE

Issue 45
December 2021

A Knowledge Sharing Initiative by Medanta

Bilateral Mastectomy with Simultaneous Bilateral Reconstruction of Breast

A double mastectomy - also known as a bilateral mastectomy - is a surgery in which both breasts are removed at the same time to remove cancer, or to reduce the risk of breast cancer in a woman who may be at high risk for the disease.

Breast reconstruction can be done at the same time as the mastectomy or at any later time. Choices for reconstruction include breast reconstruction using breast implants or what's known as Tissue Flap Surgery, which reconstructs the breast by using muscle, fat and skin taken from other parts of the body.

Case Study

A 49-year-old patient came to Medanta Breast Services OPD, Gurugram with complaints of right axillary lymph nodes since four years. Bilateral mammogram and USG breasts showed suspicious multifocal disease - BIRADs 4C.

CE-MRI breasts suggested subtle non-mass enhancement in right breast and MRI-4 area of clustered ill defined nodules in the outer half of the left breast. Right breast biopsy and right axillary lesion biopsy showed Invasive Lobular Carcinoma Grade 2 ER pos PR pos HER 2 Neg.

Vacuum assisted biopsy from left breast was done which also showed Invasive Lobular Carcinoma Grade 2. Whole body PET CT scan showed no distant metastasis.

Due to large area of involvement and multifocal disease, bilateral mastectomy was advised to the patient. Plastic surgery referral was sought for simultaneous reconstruction of both breasts. After discussing various reconstructive options the patient opted for bilateral DIEP- Deep Inferior Epigastric Perforator Flap Surgery.

The patient underwent bilateral mastectomy with sentinel lymph node biopsy (reported positive on both sides) followed by bilateral axillary dissection along with reconstruction - bilateral DIEP under general anaesthesia.

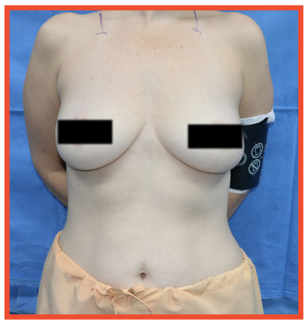
With DIEP Free Flaps, excess tissue from the patient's abdomen was used to reconstruct both the breasts by using microsurgical techniques. Commonly a unilateral breast reconstruction is done. However, in this case both breasts were reconstructed simultaneously which made it a complex procedure.

Post operatively the patient was stable and discharged after seven days.

Final histology showed m pT2 N2a disease on left side and m pT2 N3a disease on right side.

DEEP INFERIOR EPIGASTRIC PERFORATOR FREE FLAPS (DIEP)

DIEP flap based reconstruction is the gold standard for breast reconstruction and is commonly performed at Medanta with high success rates and patient satisfaction. This procedure entails taking extra skin and fat from the patient's tummy area and using it for breast reconstruction with the advantage of tummy tuck alongside. Most of the abdominal muscle is left in place and only skin and fat is taken to form the new breast mound along with its blood vessels. These vessels are then joined to the recipient vessels using microsurgical techniques.



Pre-Surgery

Post-Surgery

Adjuvant treatment

Patient received four cycles of anthracycline followed by weekly paclitaxel for 12 weeks followed by local radiotherapy.

Bilateral Chestwall + SCF-supraclavicular fossa radiotherapy (Tomotherapy) 5400cGy in 30 fractions to bilateral breast and 5040cGy in 28 fractions to bilateral supraclavicular area was given. Patient has been on tamoxifen for over three years.

Dr. Rajeev Agarwal
Senior Director, Breast Services,
Medanta - Gurugram

Dr. Sanjay Mahendru
Associate Director,
Plastic, Aesthetic and
Reconstructive Surgery,
Medanta - Gurugram

In Focus

Pre-transplant Compatibility Algorithm for Live-related Donor Kidney Transplant

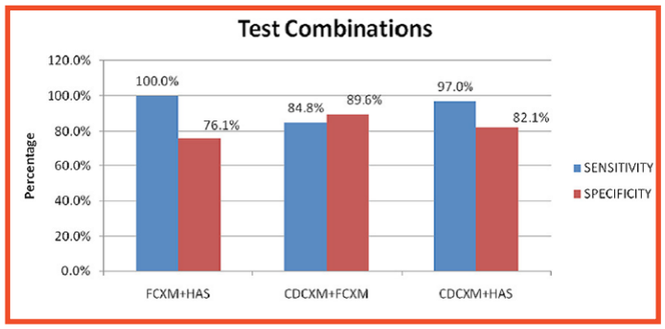
"First-of-its-kind" multi-centric study in Indian setting

There are several factors that affect graft and patient outcome after kidney transplant. These factors are age of donor, age of recipient, body mass index (BMI) and co-morbidity (for e.g., diabetes mellitus, hypertension) of recipient, waiting time on dialysis, cause of donor death (deceased donor transplant), cold ischemia time (deceased donor transplant), ABO blood group and pre-transplant compatibility test between recipient and donor. One of the most important factors is pre-transplant compatibility work-up, which includes several tests to find compatibility between the recipient and donor. These tests are human leukocyte antigen (HLA) typing, complement dependent cyto-toxicity cross-match (CDCXM), flow-cytometry cross-match (FCXM), anti-HLA antibody screening (HAS) testing and anti-HLA antibody identification (HAI) assay. Commonly used HAS is Luminex bead-based test and the commonly used HAI assay is Luminex based test called single antigen bead (SAB) that employs recombinant antigens. All these tests fall into two broad categories: cell-based tests and HLA bead-based (solid phase) tests. While CDCXM, FCXM are cell-based assays, HAS, and HAI are HLA bead-based assays.

Since no single test is always accurate and sensitive, two or more tests are used to increase the precision of evaluation. Different algorithms have been proposed by centers in Leiden, Basel, Vienna, Minnesota, etc. With an intention to develop an optimal algorithm for India, a multi-centric study was planned. This study

evaluated pre-transplant compatibility tests for live-donor kidney transplants. Three tests, complement dependent cyto-toxicity cross-match (CDCXM), flow-cytometry cross-match (FCXM) and anti-HLA antibody screening (HAS) were performed and confirmed by the anti-HLA antibody identification (HAI) assay in a multi-centric trial (three transplant centers) in India.

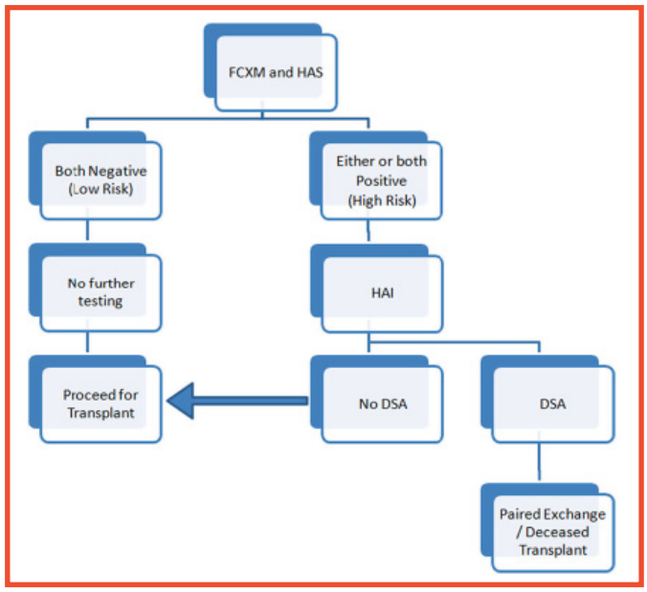
All prospective recipients (and their potential donors) underwent HLA typing as well as CDCXM, FCXM and HAS assays. In addition, HAI {single antigen bead assay; (SAB)} was done for all recipients to identify possible anti-HLA antibodies. In a virtual cross-match (VXM), antibody specificity was mapped to donor HLA type to determine donor-specific antibodies (DSA). Only patients without DSA were cleared for the transplant. Alternatively, patients with DSA were offered an exchange in the kidney paired donation (KPD) program. The screening results (CDCXM, FCXM, and HAS) were analyzed, individually as well as in combination of screening assays (CDCXM+HAS, CDCXM+FCXM, and FCXM+HAS) and the results were compared with those from the HAI test.



Sensitivity and specificity of combination of tests (CDCXM+HAS, FCXM+HAS and CDCXM+FCXM)

Out of 100 patients, 69 were male and 31 were female; 85 recipients (85%) underwent a kidney transplant. The sensitivity of CDCXM was only 12.1% and the specificity of CDCXM was 100%; whereas the sensitivity of FCXM was 84.8% and the specificity of FCXM was 89.6%. The sensitivity and specificity of class I HAS was 88.2% and 84.3%, respectively. The sensitivity and specificity class II HAS was 88.0% and 80.0%, respectively. However, when both class I/II HAS were tested together, the sensitivity increased to 97.0% and the specificity to 82.1%. Similarly, the sensitivity of combined FCXM+HAS had the sensitivity of 100% and the specificity of 76.1%; CDCXM+FCXM had the sensitivity of 84.8% and the specificity of 89.6% and CDCXM+HAS assays reached 97% with the specificity of 82.1%.

This was first-of-its-kind study, where results showed that the algorithm of FCXM with HAS produced the best sensitivity of 100%. The specificity of 76.1% indicate that the combined FCXM+HAS assays may detect up to 24.9% false positive results. The study suggests that these false-positives may be easily resolved by performing the virtual crossmatch based on HAI (SAB) results. In the reflex testing algorithmic approach only 49% patients needed HAI (SAB). Finally, the results suggested that the CDCXM assay may be discontinued in pre-transplant workup owing to its very low sensitivity (12.1%).



Suggested algorithm for DSA testing for recipients with potential living donor

This algorithm can be adopted by any transplant immunology laboratory in India. The best part is that this algorithm does not miss any incompatibility and still does not cost much to the patient, since less than half the patients would require HAI test.

Dr. Aseem Kumar Tiwari

Director, Laboratory Medicine, Pathology and Blood Bank, Medanta - Gurugram

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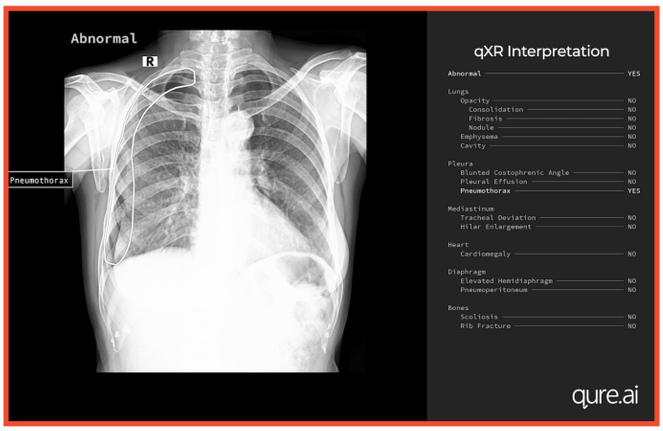
Tech-Byte

Medanta Introduces AI-enabled X-ray to Improve the Diagnosis of Chest Ailments

Medanta has partnered with Qure.ai, a leading artificial intelligence solutions provider for enhancing and improving the efficacy of X-ray analysis for chest ailments. The high-end software solution called qXR minimizes the risk of missing even the most minor chest abnormalities. Aided by artificial intelligence, this enables doctors to arrive at more accurate diagnosis.

X-rays remain the most common non-invasive tests to detect chest ailments, and qXR offers an automated interpretation of chest X-rays that facilitate better diagnosis and treatment. qXR classifies X-rays into normal or abnormal. The abnormal findings are described, and highlighted on the scan. The AI solution can detect 30 distinct abnormalities from the lungs, pleura, heart, bones and the diaphragm. qXR can also analyse multiple scans from the same patient sequentially and create a progression report to detect changes in lesions over time.



> "Medanta strives to deliver world-class healthcare through its high-end medical equipment and superior infrastructure. State-of-the-art technology is an essential aspect of healthcare delivery. Advancement of our X-Ray capabilities, empowered by Qure.ai illustrates that clinical excellence is embedded in our culture."

Dr. Naresh Trehan
Chairman and Managing Director - Medanta

The qXR solution will enhance Medanta's chest X-ray capabilities. The seamless set-up of the algorithm in the solution enables increasing productivity and improving the accuracy of medical diagnoses.

Medanta@Work

Enhancing Access to Healthcare

Medanta sets up 15 Neighbourhood Clinics in Gurugram

Traditionally hospitals have always been the centre of healthcare delivery. Whether it be a basic treatment or a specialized surgery, hospitals have mostly remained the first preference for treatment. However, in the past few years, this trend has started to shift. Healthcare providers have become more inclined to make medical care available at patient's doorsteps, and Medanta is at the forefrunt of driving this shift.

To ensure that quality healthcare was made accessible to all the patients in a safe and convenient environment amidst the peak of COVID-19 pandemic, Medanta began a remote care program

in the RWAs of Gurugram. These neighbourhood clinics ensured availability of world-class healthcare services to individuals, families, groups and the community. 15 of such clinics now operational in Gurugram, create better access point to healthcare by providing the residents with virtual consultations with Medanta's super specialist doctors, nursing & paramedic staff, high-end medical equipment and support for medical emergency.

"Realising the importance of future-ready and resilient healthcare infrastructure, we introduced this initiative last year when the pandemic had just begun.Since then, we have collaborated and introduced multiple neighbourhood clinics. Each milestone is an important one for us. We look forward to providing the best of our medical services to maximum patients. This initiative is a significant step towards ensuring the wellness of the residents of Gurugram."

Mr. Pankaj Sahni
CEO, Medanta

These clinics are currently present in 15 RWAs of Gurugram including - The World Spa, Orchid Petal, DLF Aralias, Central Park resorts, DLF Crest, Uppal Southend, Ireo Skyon, Ireo Victory Valley, Close North (Nirvana), Ireo Uptown, M3M golf estate, Central Park Flower Valley, Park view city 1, IVY Apartments and townships like Ardee city. More such neighbourhood clinics are in the process of being set up.

Kudos

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CONGRATULATIONS

Dr. Arvinder Singh Soin
(Chairman, Institute of Liver Transplantation and Regenerative Medicine, Medanta, Gurugram)

on being recognised as an
Eminent Transplant Professional by NOTTO

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Welcome Onboard

JAY PRABHA MEDANTA SUPER SPECIALITY HOSPITAL, PATNA

Dr. Pramod Kumar
Director & HOD, Cardiology

Cardiologist with over 29 years of experience and expertise in transradial intervention, complex pacemaker implantation, primary angioplasty in acute heart attack and heart failure management. Pioneered transradial intervention in North India. Conferred upon Bihar Lifetime Achievement Award by Cardiological Society of India

Dr. Mukund Prasad
Director & HOD, Neurosurgery

Neurosurgeon with over 20 years of experience and expertise in brain tumor surgeries, endoscopic brain surgeries and skull base surgeries. Pioneered vascular neurosurgery and complex brain tumor surgery in Bihar

Dr. Sanjoy Kumar
Director, GI Surgery, GI Oncology & Bariatric Surgery

Surgeon with over 25 years of experience and expertise in gastrointestinal surgery, therapeutic endoscopy, colorectal surgery, hernia surgery and hepatobiliary surgery. Performed over 25,000 gastrointestinal surgeries using laparoscopic & open techniques, and maximum number of bile duct surgeries in the state. Pioneered laparoscopic diaphragmatic hernia repair in Bihar

Dr. Jyotish Chandra Pandey
Director, Critical Care & Anaesthesiology

Anesthesiologist and critical care expert with over 26 years of experience. Pioneered awake fiberoptic intubation, continuous epidural pain management and percutaneous tracheostomy in Bihar. Felicitated with Dainik Jagran Best Anesthesiologist Award, Bihar in 2018 and Times ICON Bihar Award in 2019

Dr. Ajay Kumar Sinha
Sr. Consultant, Cardiology

Cardiologist with expertise in invasive & non-invasive cardiac procedures and pacemaker implantation

Dr. Vijay Kumar
Sr. Consultant, Cardiology

Cardiologist with expertise in cardiac catheterizations, ECHO & TEE

Dr. Ashuvi Kunjan Agay
Sr. Consultant, Neurosurgery

Neurosurgeon with expertise in head injury and brain & spinal tumor surgeries

Dr. Amit Kumar
Sr. Consultant, Oncology

Medical and Hemato-oncologist with expertise in chemotherapy, immunotherapy, precision medicine and stem cell transplant

Dr. Amrendra Amar
Sr. Consultant, Medical Oncology

Medical oncologist experienced in treating GI, liver, lung, prostate, breast, head & neck malignancies. Expert in immunotherapy and targeted therapy

Dr. Suraj Kumar
Sr. Consultant, Nephrology

Nephrologist with over 10 years of experience and expertise in renal transplants, kidney diseases, infection related to immunosuppression, and critical care in nephrology

Dr. Om Prakash Narayan Arya
Consultant, Cardiology

Cardiologist with expertise in interventional & non-interventional cardiology, echocardiography, and coronary & peripheral angioplasty

Dr. Pawan Kumar Singh
Consultant, Cardiology

Cardiologist with expertise in primary & complex angioplasty, adult and pediatric non-invasive & interventional cardiology procedures

Dr. Shamshad Alam
Consultant, Interventional Cardiology

Interventional cardiologist with expertise in primary & complex percutaneous coronary interventions, pacemakers & AICD implantation, and peripheral vascular embolization

Dr. Shraddha Ranjan
Consultant, Cardiology

Cardiologist with expertise in clinical & preventive cardiology

Dr. Bipin Kumar Jha
Consultant, Gastrointestinal Surgery

Gastrointestinal surgeon with expertise in laparoscopic colorectal surgery and upper & lower GI endoscopic procedures

Dr. Rishi Kishore
Consultant, Nephrology

Nephrologist with expertise in performing renal transplants, dialysis, continuous ambulatory peritoneal dialysis and interventions such as kidney biopsy & tunnel catheter insertion

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MEDANTA - GURUGRAM

Dr. Vivek Singh

Director, Pulmonology & Transplant Pulmonology

Transplant pulmonologist with 21 years of experience and expertise in pulmonology & lung transplants. Performed over 200 lung transplants

MEDANTA - RANCHI

Dr. Milan Kundu

Associate Director, Cardiothoracic & Vascular Surgery

Cardiovascular thoracic surgeon with 17 years of experience and expertise in minimally invasive cardiac surgeries and cardiac transplants. Performed over 5000 cardiac surgeries

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American Association of Cardiologists of Indian Origin (AACIO)

SPECIAL AWARD

presented to

Naresh Trehan, M.D.

for

Outstanding Contributions as Indian Father of Cardiac Surgery

November 14, 2021

Navin C. Nanda, M.D.
Chairman, AACIO Board of Directors and Awards Committee

Vishal Gupta, M.D.
President
AACIO

Congratulations

Dr. Naresh Trehan

(Chairman & MD, Medanta)

On being recognized for his outstanding contributions as **Indian Father of Cardiac Surgery** by the *American Association of Cardiologists of Indian Origin (AACIO)*

For **EMERGENCY** DIAL **1068**

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Medanta - Patna

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Medanta - Ranchi

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Tel: 0651 7123 100

Medanta - Indore

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Gurugram | Delhi | Lucknow | Patna | Indore | Ranchi | Noida*