CRUCIAL MATTERS OF THE HEART
Curing Congenital Cardiac Defect with Senning’s Operation

A HEADY CHALLENGE
Successful removal of Pheochromocytoma Tumour
FROM THE ED’S DESK

Dear Readers,

Our time perspective plays a key role in virtually every decision we make in day-to-day life. More so in healthcare as many times these perspectives help us in diverting a medical disaster. At BLK and Nanavati, we have been able to save precious lives because of timely and prompt intervention.

The cover story of this issue of Radiant Pulse is about the successful treatment of an infant with ‘Blue Baby Syndrome’ from Sudan. A team of doctors at BLK could provide the timely treatment using Senning’s Operation, enabling the baby to lead a normal life. Another interesting case is of an international patient from Ethiopia, heading home to take up her profession of teaching after getting treated of Brachial Plexus Tumour.

In this issue, we have also highlighted the importance of advanced MRI – neuroimaging technique ‘Diffusion Tensor Imaging’ for pre-operative plan. As a case that can remind us all of the importance of getting treated in well-established set-ups, you will also come across a story of a man with an infection caused by lack of sterilisation of medical tools during a previous surgery.

It is always a matter of great pride for us when our medical specialists are recognised for their contribution in their area of expertise. Recently, Dr. Deep Goel, Director, Minimal Access, Bariatric & Surgical Gastroenterology was felicitated as the ‘Rising Star in his Field’ at the Times Healthcare Achievers Award, 2017 – an initiative instituted by The Times of India group. Congratulations to Dr. Deep Goel and his team.

I must mention here that the feedbacks that we keep receiving give us new insights to improve this newsletter and we could not thank all of you enough for sharing your views and suggestions with us. You can continue to write to us at editorial@blkhospital.com.

Stay Healthy, Stay Happy!

Naresh Kapoor
Executive Director
Radiant Life Care
In Search of a Normal Gait
A Complex Case of Hip Surgery for Fractured Acetabulum

Dr. Pradeep Sharma
Director & Head
BLK Centre for Orthopaedics
Joint Reconstruction & Spine Surgery, BLK Super Specialty Hospital, New Delhi

Dr. Anuj Malhotra & Dr. Akshat Sharma
Consultants
BLK Centre for Orthopaedics
Joint Reconstruction & Spine Surgery, BLK Super Specialty Hospital, New Delhi

The acetabulum, which is a part of the hip joint, is responsible for supporting the weight of the body. In this case, a patient underwent surgery for a fractured acetabulum. The surgery involved an operation to reconstruct the acetabulum and hip joint.

THE CASE
An international patient was brought to BLK Centre for Orthopaedics, Joint Reconstruction & Spine Surgery with an old neglected fractured acetabulum and hip dislocation. The patient had a high-riding dislocation in the hip with a shortening of about 8 cm. There was an angular deformity at the upper femoral shaft and the acetabulum was disrupted and malunited. The patient was not a candidate for hip replacement due to bone deficiencies. Total Hip Replacement needs high level of understanding of biomechanics, soft tissue (abductor & sciatic nerve) handling and various highly skilled Osteotomies to correct severe deformities and reconstruct the hip.

THE PROCEDURE
The hip was exposed through the Lateral Liverpool Approach. The femoral head was identified. It had formed a pseudo acetabulum and was partly destroyed. A femoral neck osteotomy was done. The malunited fracture of the shaft was exposed and the bone at that level got malunited. On examination, there was a high riding dislocation in the hip with a shortening of about 8 cm. There was angular deformity at the upper femoral shaft and the acetabulum was disrupted and malunited. There was no neurovascular complication.

THE RESULT
The recovery process was quite uneventful. The patient made a phenomenal progress and started walking around with equal limbs, coupled with diligent care and strict physiotherapy, the patient made a phenomenal progress and started walking around with equal limbs, stabile hips and normal gait after four years.
Crucial Matters of the Heart
Curing Congenital Cardiac Defect with Senning’s Operation

The incidence of heart defects at birth is approximately 20 to 30 in one thousand live births. About four cases out of these happen to be serious defects, requiring palliative or corrective surgery in the first few weeks to prevent death. Transposition of the great arteries or TGA is one such condition.

This congenital heart defect is due to abnormal development of the foetal heart during the first eight weeks of pregnancy. In TGA, the large vessels that carry blood from the heart to the lungs, and to the body are swapped i.e. they are connected improperly. In other words, the aorta is connected to the right ventricle, and the pulmonary artery is connected to the left ventricle — the opposite of a normal heart’s anatomy. In a normal heart, oxygen-poor (blue) blood returns to the right atrium from the body, travels to the right ventricle, then is pumped through the pulmonary artery into the lungs where it receives oxygen. Oxygen-rich (red) blood returns to the left atrium from the lungs, passes into the left ventricle, and then is pumped through the aorta out to the body.

The interventricular septum can be intact and the only mixing of oxygenated and deoxygenated blood, necessary to keep the baby alive, occurs through the Atrial Septal Defect and Patent Ductus Arteriosus. These sick babies need early diagnosis and complex surgery to switch the aorta and pulmonary arteries to their correct position within the first three weeks of life. If surgery is delayed, the left ventricle becomes progressively weaker and incapable of taking the load off the arterial system.

THE CASE
A baby, diagnosed with TGA in his native country Sudan, was brought to BLK Super Speciality Hospital since, surgery for this defect was not available in his country. By the time, the reports were sent to BLK and the patient travelled to India, he was four and a half months old. The diagnosis was confirmed on ECHO wherein it showed the left ventricle had weakened considerably and was no longer thought to be capable of pumping into the systemic circulation. A corrective Arterial Switch operation was out of question.

THE PROCEDURE
The second best option for the infant was an Atrial Switch or Senning’s Operation. In this ingenious operation, three incisions are made, two in the walls of the right and left atria, and one in the atrial septum. They are re-sutured in a way that superior vena cava (SVC) and inferior vena cava (IVC) blood is diverted into the left ventricle, the pulmonary artery and oxygenated pulmonary venous blood is diverted into the right ventricle and aorta.

The operation was done through a mid sternotomy. The patient was put on the heart lung machine and cooled to 28 degrees. The aorta was clamped and the heart was stopped. Both atria were opened and the atrial septum was divided. A synthetic gore-tex patch was used to redirect pulmonary venous blood through the left atrium incision into the right atrium and right ventricle and through it into the aorta. The remaining right atrial wall was used to create a baffl e to divert SVC – IVC blood into the left ventricle and pulmonary artery.

THE RESULT
The recovery of the child was uneventful. Cyanosis disappeared and the baby was discharged on the eighth post-operative day. During the follow-up, the child improved dramatically and gained weight within a fortnight, after which he was taken back home to Sudan for a healthy start all over again.

Dr. Sushant Srivastava
Director & Sr. Consultant
Cardiothoracic & Vascular Surgery
BLK Heart Centre
BLK Super Speciality Hospital, New Delhi

“Complex congenital heart disease requires precise early diagnosis and complex surgery. If timely surgery is done, the results can be gratifying.”
Bearing the Unbearable Pain
Successfully dealing with a case of Brachial Plexus Tumour

Primary Tumours of the brachial plexus are relatively rare, accounting for less than 5% of all Tumours in the arm. They are usually not associated with a neurologic deficit. The complex location of these Tumours surrounded by important vascular structures makes the resection challenging for surgeons.

THE CASE
A 44-year-old non-diabetic school teacher from Ethiopia was brought to BLK with progressively increasing pain over her right shoulder and right arm. She had been experiencing the pain for the past three years and it would intensify every time she raised her hand over her head. There was no history of sensory-motor deficits. She even had to give up her profession due to the pain. On examination, there was no palpable lump felt in her breasts. A lump was felt in the apex of right axilla. No sensorineuronal deficit was noted and her distal arterial pulsations were normal and symmetrical.

No evidence of any suspicious malignant mass lesion/ architectural distortion was seen in her right breast during Mammography. Ultrasound of axilla showed an oval shaped, heteroechoic with central echogenicity measuring 5.33 x 4.95 x 4.04 cm in size in the right axilla. MR neck and axilla also revealed a well marginated oval shaped heterogeneously enhancing lesion along the course of the right brachial plexus in the axillary region measuring about 43 x 49 x 61 mm. The lesion was displacing the axillary artery and veins inferiorly. Medially, the lesion was abutting the thoracic wall.

THE PROCEDURE
The patient underwent surgery of the right brachial plexus region with excision of the mass arising from the lateral cord of brachial plexus under general anaesthesia without a muscle relaxant. Solid mass was seen arising from the lateral cord of brachial plexus measuring about 5 x 4 cm, firm in consistency with nerve fibers splaying around it without any gross invasion. The clavicle and muscles were divided, proximal and distal control of axillary vessels was done. The muscles were sutured back and clavicle plating was done after excision of mass. The final HPE was Neurofibroma.

THE RESULT
The patient did not have any sensory deficit in her right upper limb post-operative. She had normal palmar flexion movements and pincer grasp with slight weakness in dorsiflexion at wrist and metacarpophalangeal joints. The patient went home happily, pain-free and ready to resume her teaching profession.

A Heady Challenge
Successful removal of Pheochromocytoma Tumour

THE CASE
A 62-year-old, non-diabetic lady with fluctuating blood pressure, visited Nanavati Super Speciality Hospital, with complaints of palpitation, sweating and headache for the past two months. On investigation, her cardiac workup was negative. Sonography abdomen and pelvis, showed mass in left adrenal gland. CT scan showed 6.5 cm x 5 cm mass arising from the adrenal gland. Left kidney was not involved. There was suspicion of Pheochromocytoma from the CT scan findings. Her blood pressure readings were high and fluctuating (180/100 mm Hg). Urinary VMA showed high value (40) as was her plasma metanephrine levels. Considering clinical examination and investigations, a surgery was planned and the patient was put on alpha blockers to control fluctuating blood pressure for ten days.

THE PROCEDURE
The surgery took the approach from the left renal incision (cutting through the 11th rib). During induction, the blood pressure was within normal limits. During surgery, though, when the Tumour was approached for dissection, blood pressure started fluctuating (from 180/100 to 300/170 mm Hg). Dissection around the Tumour was very carefully done to avoid the Tumour to the best possible extent. As the Tumour was completely removed, blood pressure levels started falling down and were well-managed by the Anaesthetist and Cardiologist.

THE RESULT
Post surgery the patient was kept in the ICU for a day for proper monitoring. Her post-operative period was uneventful and her blood pressure was well maintained. Palpitation, sweating and headache were also not observed during this period. Histopathology report revealed Benign Pheochromocytoma. The patient was safely discharged on seventh post-operative day.
Imaging has grown much beyond its morphologic aspect to providing functional and physiologic details. With current non-invasive MRI techniques, one may assess the Tumour grade, suggest the best possible surgical approach, prognosticate as well as perform post treatment follow-ups to see for treatment response, residue and possible recurrence.

Where on one hand non-contrast sequences like Arterial Spin Labelling used to assess tumour blood flow have the advantage of being non-invasive, sensitive, cost effective and repeatable, sequences like Diffusion Tensor Imaging provide further insight to Tumour characteristic and help in pre-operative planning.

Diffusion Tensor Imaging (DTI) provides superior visualisation and quantification of Tumour involvement in relation to various white matter tracts. It can delineate tract invasion and displacement. These not only helps to discriminate between diffuse and focal brain stem Tumours, grade these masses but also to guide the best path to be followed during surgical biopsies and excisions. It has been quite well established in supratentorial masses but with the present state-of-the-art imaging techniques, we can achieve considerable level of sensitivity for brain stem lesions as well.

This was well-projected with a recently performed MRI on a two year old girl who was experiencing imbalance while walking, making her prone to frequent falls. A 3.9 x 3.7 x 3.1 cm sized, heterogenous mixed signal intensity, predominantly T2 hyper-intense, well-defined lesion was detected with its epicentre in her right half of pons and an exophytic component extending into the right cerebella-pontine angle cistern. The lesion was hypo-refused on Arterial Spin Labelling as well as DSC perfusion.

Diffusion Tensor Imaging clearly depicted the relation of this pontine mass lesion with the adjoining white matter tracts. The mass was seen displacing these tracts changing their colour hues rather than destroying them. The corticospinal tracts, was seen displaced along its right lateral margin, whereas the right middle cerebellar peduncle and central tegmental tract were seen effaced along its right lateral margin. No major white matter tract was identified along the posterior aspect of the lesion, thereby making this approach suitable for surgery. On histopathology this pontine mass turned out to be WHO Grade I, localised pontine pilocytic astrocytoma.

Given the present advanced imaging techniques, Tumour imaging protocols must include advanced sequences like Arterial Spin Labelling, DSC perfusion, 3D BRAVO, Neuronavigation, MR spectros-copy as well as Diffusion Tensor Imaging to provide all possible morphologic as well as functional details, besides routine morphologic sequences like T1WI, T2WI, DWI, SWAN and FLAIR.

**The Case**
A 39-year old healed (burned out) Rheumatoid Arthritis patient came to Nanavati Super Speciality Hospital, with bilateral 90 degree bony fused knee joints. There was no movement in both the knees while her spine, both hips and ankles were mobile. She also had associated hand deformities. Other than this, there was no significant co-morbidities. She was wheelchair bound for eleven years. Her X-ray showed bilateral bony continuity of femur with tibia (knee joint).

**The Procedure**
In pre-operative planning, the blood vessels, nerves and the bony fusion mass was dissected and safely resected at the joint line. Since there was flexion / extension gap mismatch of more than 10 mm, Nexgen Rotating Hinge TKR (Zimmer USA) was implanted which corrected the deformity from 90 degree to 30 degree on the operation table. Expertise in handling such cases led the team of doctors to wait, as such residual deformities can be gradually corrected using a splint. In this case, the residual 30 degree of flexion deformity was progressively corrected to full correction in over four weeks using push knee splint. On successfully correcting one knee, the other knee was operated after an interval of six weeks, resulting in bilateral straight knee.

**The Result**
Four years post operation the patient has excellent mobility, stability and function. She has gained 0 to 110 painless stable active movements. Now she can walk, climb stairs, sit on chair and get up unaided independently. After eleven years of wheelchair-bound life, she has started to walk independently.
EVENTS AND ACTIVITIES

BLK Event Calendar

The Times of India in collaboration with Medium Healthcare Consulting hosted the Times Healthcare Achievers Awards 2017 at a glittering ceremony held at the Taj Palace Hotel, New Delhi. The event was held to recognise and felicitate renowned healthcare personalities in Delhi & NCR. The evaluation of the awards was made with extensive data and weightage was given to Patient Feedback, Clinical Research, Innovations, Individual Education and Achievements of the Doctors. According to Dr. Mahendra Bhandari, Chairman of the Jury, over 325 nominations were received out of which only 90 doctors were selected.

Dr. Deep Goel, Director, Minimal Access, Bariatric and Surgical Gastroenterology, BLK Centre for Digestive & Liver Diseases was the sole winner in the Rising Star Category in the field of GI Surgery and Bariatric Surgery.

Employee Recognition

The Obstetrics & Gynaecology Department received the ‘Certificate of Honour’ from the Delhi State Health Mission, Department of Health and Family Welfare for Excellent Performance in Tubal Occlusion and IUCD Insertion in Central District (2016-17).

Nanavati Hospital celebrates Independence Day in Bangladesh

Nanavati Super Speciality Hospital organised a Free OPD Camp at Hepta Healthcare in Rajshahi, Bangladesh from 15th - 17th August, wherein Dr. Rajan Shah, Director & Head, Department of Neurosurgery, Dr. Salil Shirodkar, Sr. Consultant, Heart Centre, and Dr. Suruchi Desai, Sr. Consultant, Department of Obstetrics & Gynaecology, saw over 275 patients over a period of three days.

Nanavati Hospital launches OPD in Surat

Nanavati Super Speciality Hospital inaugurated its first Satellite Clinic in Surat, Gujarat at Baba Hospital. Liver, Spine and Pain Management OPD was conducted on the inaugural day by Dr. Sanjay Singh Negi, Director, HPB Surgery & Liver Transplant, BLK Super Speciality Hospital, New Delhi; Dr. Mihir Bapat, Director Institute of Spine Surgery and Dr. Nana Morkane, Sr. Consultant, Pain Management from Nanavati. Around 85 patients were screened during this OPD.

Vande Mataram

On 15th August, the entire nation rejoiced its 70 years of Independence. Nanavati Hospital participated in this spirit by organising a ‘Theme Competition’. Security and Nursing department paid their homage through a special performance during flag hosting.

BLK Event Calendar

The Obstetrics & Gynaecology Department received the ‘Certificate of Honour’ from the Delhi State Health Mission, Department of Health and Family Welfare for Excellent Performance in Tubal Occlusion and IUCD Insertion in Central District (2016-17).

Employee Recognition

Left to Right:
Mr. Jins Thomas (Nurse of the Month), Ms. Pavitra Thakur (Contractual Worker of the Month), Mr. Yogesh Wadhawan (General Manager, Human Resources) Mr. Abhay Pratap (GDA of the Month) and Mr. Pankaj Singh (Employee of the Month).

Nanavati Hospital celebrates Independence Day in Bangladesh

Nanavati Super Speciality Hospital organised a Free OPD Camp at Hepta Healthcare in Rajshahi, Bangladesh from 15th - 17th August, wherein Dr. Rajan Shah, Director & Head, Department of Neurosurgery, Dr. Salil Shirodkar, Sr. Consultant, Heart Centre, and Dr. Suruchi Desai, Sr. Consultant, Department of Obstetrics & Gynaecology, saw over 275 patients over a period of three days.

Nanavati Hospital launches OPD in Surat

Nanavati Super Speciality Hospital inaugurated its first Satellite Clinic in Surat, Gujarat at Baba Hospital. Liver, Spine and Pain Management OPD was conducted on the inaugural day by Dr. Sanjay Singh Negi, Director, HPB Surgery & Liver Transplant, BLK Super Speciality Hospital, New Delhi; Dr. Mihir Bapat, Director Institute of Spine Surgery and Dr. Nana Morkane, Sr. Consultant, Pain Management from Nanavati. Around 85 patients were screened during this OPD.

Vande Mataram

On 15th August, the entire nation rejoiced its 70 years of Independence. Nanavati Hospital participated in this spirit by organising a ‘Theme Competition’. Security and Nursing department paid their homage through a special performance during flag hosting.

BLK Event Calendar

The Obstetrics & Gynaecology Department received the ‘Certificate of Honour’ from the Delhi State Health Mission, Department of Health and Family Welfare for Excellent Performance in Tubal Occlusion and IUCD Insertion in Central District (2016-17).

Employee Recognition

Left to Right:
Mr. Jins Thomas (Nurse of the Month), Ms. Pavitra Thakur (Contractual Worker of the Month), Mr. Yogesh Wadhawan (General Manager, Human Resources) Mr. Abhay Pratap (GDA of the Month) and Mr. Pankaj Singh (Employee of the Month).