VOLUME - IX, DEC 2020

Royal Care

- **Editor & Publisher**

Dr. K. Madeswaran

Chairman - Consultant Neuro & Spine Surgeon

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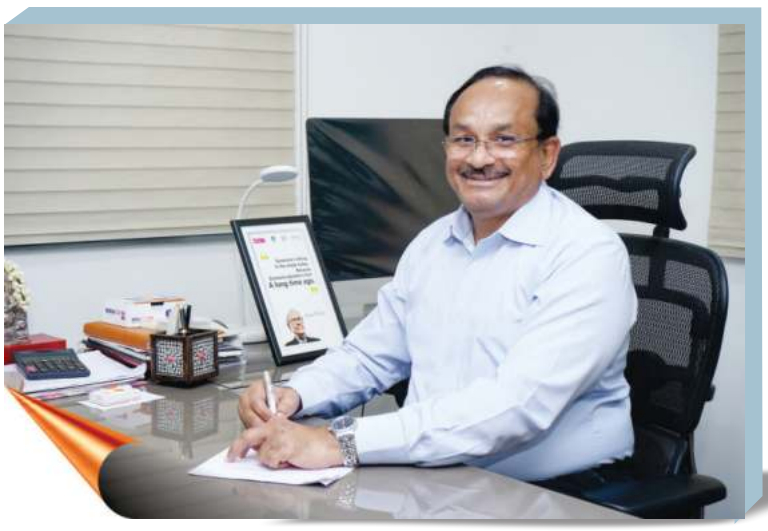
CHAIRMAN'S COLUMN



Year 2020 has taught us a lot of new things in life. First and foremost is that we have become self reliant.

Royalcare has made a mark during the pandemic by adopting new guidelines in safeguarding our employees, healthcare workers and we were successful in implementing it.

Happy to share that we have been recognised as a post graduate medical institute with approvals from National Board to start DNB (General Medicine), 3 years Post Graduate Program. We will be soon bringing in the DNB program in other specialities in the coming years.

October month being the breast awareness month, we are inaugurating the most advanced full field digital mammogram with 3D tomosynthesis and stereotactic biopsy .

Hopefully the worst part of the pandemic is coming to a close and the industrial sector is trying to be back on its feet with the worldwide economies are slowly on a recovery mode. Let us be confident that the new year 2021 brings us the much awaited healthier life, peace and growth.

Regards

Dr. K. Madeswaran

Founder Chairman

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Royal Care

From The EDITOR'S DESK

"To smile without condition,"
To talk without intention,
To give without Reason and
To care without any expectation
That is the beauty of medical profession ..

- Dr. Berger

Through the worst pandemic seen in our life time, the entire hospital staff have stood together in solidarity and worked with utmost sincerity and kindness towards all our patients and slowly we are returning back to normal state of functioning. We have established a clear name as one of the most ethical hospitals in the treatment of COVID 19 patients in the entire region.

We congratulate Dr.Arjun Srinivasan, Dr.Dinesh Chidambaram, Dr.S.Kalyanakumari, Dr.Kalaivani, Dr.Noorul Amin Shahid, Dr.V.R.Pattabhiraman, and Dr.M.N.Sivakumar for their various academic achievements that are mentioned later. Before the pandemic began, Various camps and health awareness campaigns were conducted by our hospital at various locations. Since the pandemic, it has been a sincere effort form the hospital to reach out to the community online and disseminate as much information as possible to the public.

TAVI was performed by our team of experts on a 81 year old lady which is one of the most complex procedures in cardiology and first of its type in such an aged person. We congratulate the team on this successful endevour.

The HBOT machine was inaugurated and is the first facility in our region to have this advanced equipment in the treatment of various conditions. The new facility for ERCP and Endoscopic procedures was also inaugurated for accurate diagnosis and management of patients.

In this much awaited edition, we have articles on Advanced Neurological Intervention, Cardiothoracic Surgery, Cosmetic Surgery, Interventional Radiology, Arthroscopy and other interesting patient cases in OMF surgery and nephrology. Some unique cases are also showcased in this edition. We welcome the new consultants who have joined Royal care Hospital and wish them success in their endeavours..

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Launch of

1ST of its kind

DRIVE Thru SCREENING Centre for COVID-19 Test

Safe !

Secured !!

Faster

The Coimbatore District Collector **Shri.K.Rajamani I.A.S.** has launched a Drive-thru Covid Screening facility at Royal Care Super Speciality Hospital, Neelambur main centre on 7th October 2020. The Screening RT-PCR test will be done by well trained professionals as per ICMR guidelines and Tamilnadu Govt.norms and processed in a state-of-the-art NABL approved facility of the Hospital.

Dr.K.Madeswaran, Chairman, Royal Care Super Speciality Hospital mentioned that this screening facility was launched in line with the District Administration's effort to increase the screening infrastructure for the Corona Virus. Since many people were concerned about the risk of getting exposed and inconvenience along with delay in sampling, a drive thru facility was created to conduct the test in a safe and secured manner in much lesser time. The facility will be very convenient because people do not have to enter the hospital and will not even need to get down from the car.

This facility can also be utilized for group testing. People can do the sampling and leave immediately while the test will be processed within the stipulated time and the results will be delivered to the patient in electronic format.

icmr

Approved RT-PCR Method

Results will be sent to your

- Test processed in State-of-the-art molecular lab
- No need to enter Hospital Premises.
- Minimal waiting
- Quick sample collection **Drive - Through Facility**

Coimbatore District Collector **Shri.K.Rajamani, I.A.S.** Inaugurating the facility

Addressed by **Shri.K.Rajamani, I.A.S.** Coimbatore District Collector

STROKE Advanced Care

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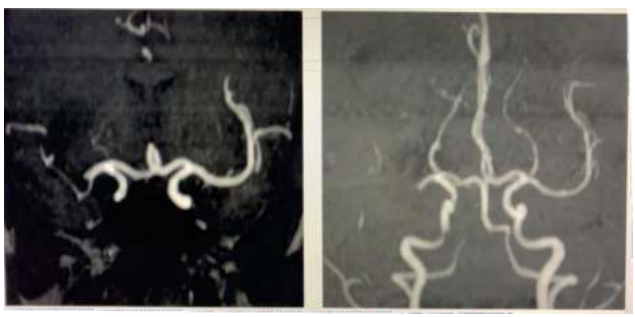
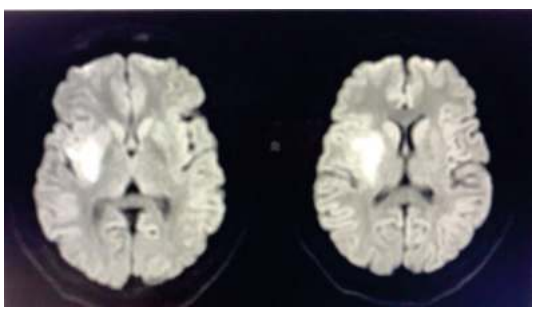
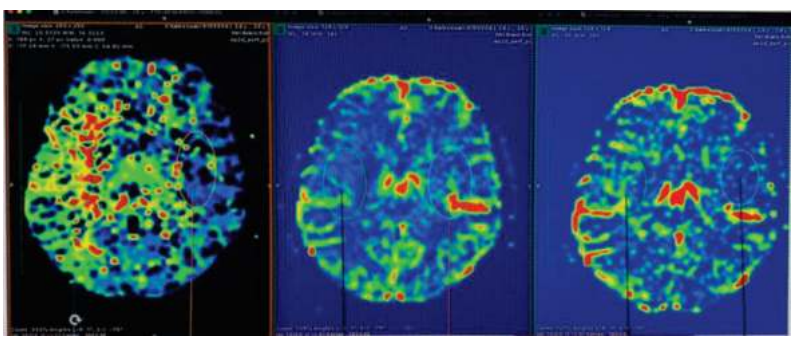
Royalcare Super Speciality Hospital provides advanced comprehensive stroke care round the clock.
A 25 year old young lady with left hemiplegia and right MCA occlusion 12 hours after onset.



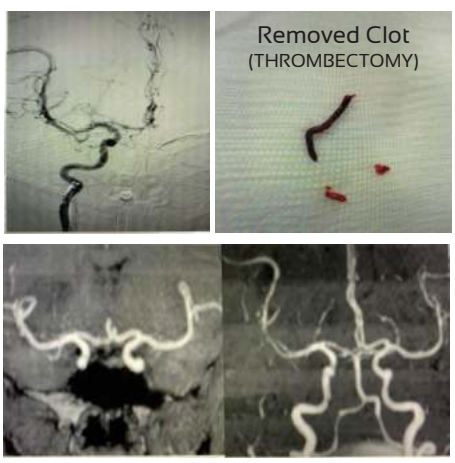
MRA showing occlusion of right MCA



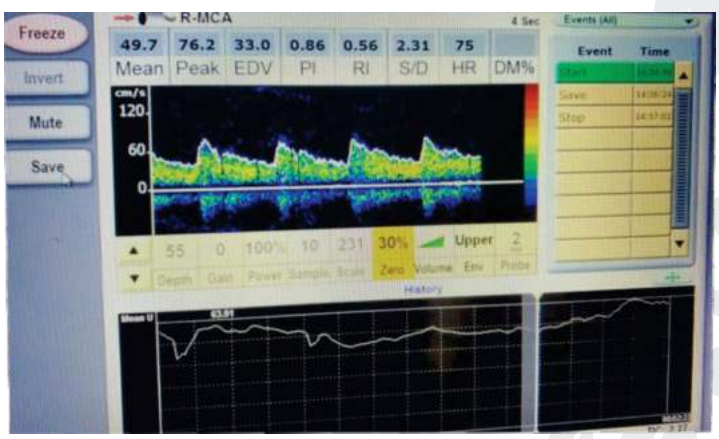
Diffusion MRI showing small to moderate size acute INFARCT



MRI Perfusion images showing large area of salvageable tissue at 12 hrs



Complete Recanalization



Normal grade 5 flow in right MCA

Tackling Three Complex Life Threatening Cardiac Conditions

Combined Transcatheter Aortic Valve Implantation+ Pacemaker+ Stenting (TAVI)

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81 year old lady had progressive dyspea for 2 years. She presented with recurrent syncope for 10 days. She had fall and sustained injuries to forehead. She had nocturnal chest pain for past 3 days and dyspnea NYHA IV for 2 days.

ECG at admission showed complete heart block with HR – 35 bpm (Fig 1). Echocardiogram showed normal LV function, severe Aortic stenosis with mean gradient of 62 mm Hg (Fig 2). Troponin T hs - 35.5 pg/ml (0-14 pg/ml) elevated. Due to recurrent syncope and complete heart block she underwent Dual chamber permanent pacemaker implantation (Fig 1). Coronary angiogram showed 90% lesion in proximal RCA (Fig 3). Syncope settled after pacemaker implantation but chest pain worsened and no improvement in dyspnea. Due to old age and fragile body habitus she was not a candidate for open heart Aortic valve replacement surgery. To relieve her symptoms we suggested Transcatheter aortic valve replacement (TAVR) which is less invasive procedure.

CT aortogram was done for measuring size of the valve, calcification and to know femoral and iliac vessels. Amidst difficulties faced during lock down period our cardiac team performed TAVR . 31.5 mm Meril Myval taken through 14 F sheath inserted through right femoral artery (Fig 4). PCI to RCA done with 3*28 mm stent. Aortic valve mean gradient decreased from 62 mm Hg to 4 mm Hg. Femoral artery access site was closed percutaneously through Perclose Proglide suture mediated closure system thus avoiding any incision or surgery at groin. Procedure done under general anaesthesia and patient extubated within 6 hours. Patient symptoms improved dramatically and mobilised on next day of procedure. No further chest pain or dyspnea. She had mild hematoma in right groin postprocedure which improved. Discharged on postprocedure day 6 in stable condition. At 2 months follow up she is doing well without dyspnea or chest pain.

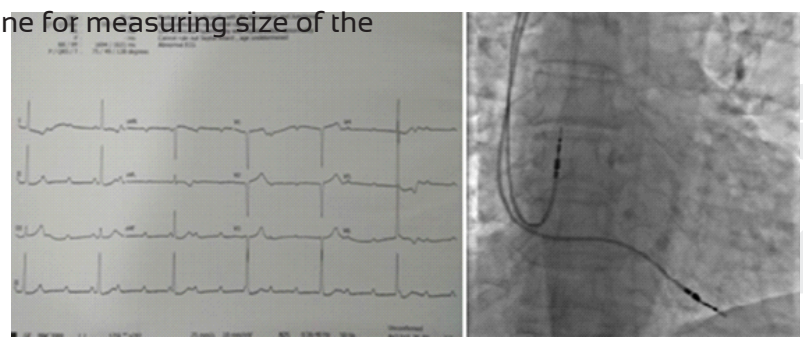

Figure 1 : ECG showing complete heart block. Permanent pacemaker implantation

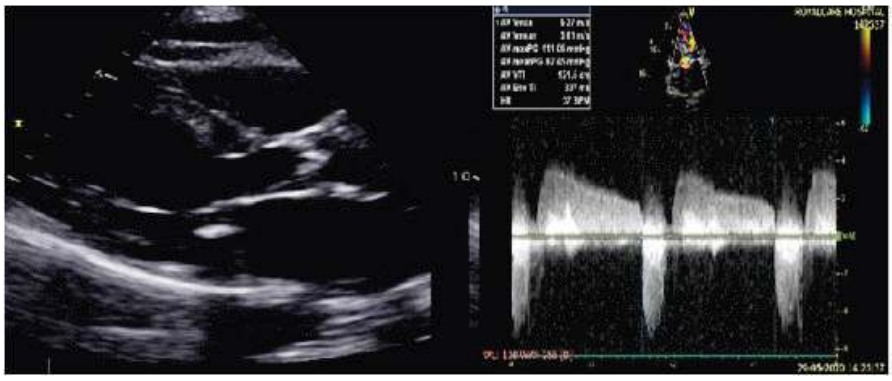

Figure 2 : Echocardiogram showing restricted aortic valve opening with severe AS in doppler

Figure 3 : Severe stenosis in right coronary artery. Before and after PCI

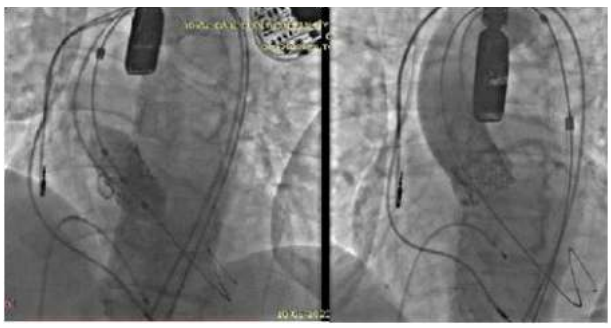

Figure 4 : Transcatheter aortic valve deployement

Figure 5 : Transoesophageal echo showing Aortic valve restriction before and new valve after procedure

Discussion:

Transcatheter Aortic valve implantation is indicated in patients with severe Aortic stenosis who are not fit for open heart surgery. It is done percutaneously through femoral artery. Bioprosthetic Valve is mounted on a balloon in Myval and it is taken through large sheath in right groin and deployed across the previous stenotic aortic valve. Traditionally Femoral artery is exposed by surgical incision and closed after sheath removal with surgical back up. With perclose suture mediated closure system femoral artery puncture site can be sutured without exposing the vessel. Entire procedure was done percutaneously thus avoiding risks and morbidities associated with open surgery in this subset of elderly patients.

In this case she had problems involving conduction system (Complete heart block), valve (Severe Aortic stenosis) and coronary artery (Tight RCA lesion). Each of these problems were serious and life threatening. All the three problems were tackled successfully with Pacemaker, transcatheter aortic valve replacement and angioplasty with stenting. Through advanced technologies and expertise, we in Royal Care hospital can tackle these complex problems in minimally invasive manner. Patients get immediate symptomatic relief. We are the third hospital in Coimbatore to do TAVR and first in Coimbatore to do Combined TAVR+ Pacemaker + stenting, thus tackling 3 life threatening conditions simultaneously.

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IMMUNOTHERAPY - *The Ray of Hope in* MOLECULAR ONCOLOGY

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In the fight against cancer, the trinity of Surgery, Radiation and Chemotherapy has long been the weapon as they go directly after cancer cells;

But Immunotherapy approaches the problem differently; ie., by reprogramming the hypnosis effect on our T-cells;

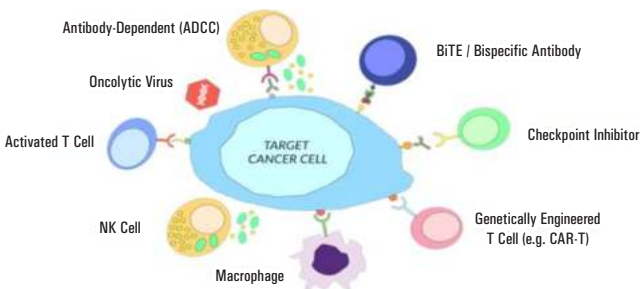
We are born with an internal defense system that is designed to fight off invaders; and the Tcells constitutes the most important part.

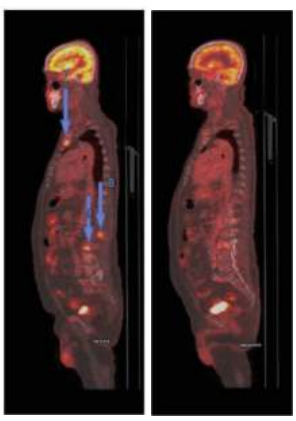
But, the cancer cells have ways to avoid destruction by having

- Genetic changes that makes them sneaky
- Have proteins to turn off immune reaction.

IMMUNOTHERAPY- Biological response modifier has encompassed several mechanisms such as

1. Immune checkpoint inhibitions
2. Monoclonal antibodies
3. T cell transfer therapy
4. Non specific immune stimulation





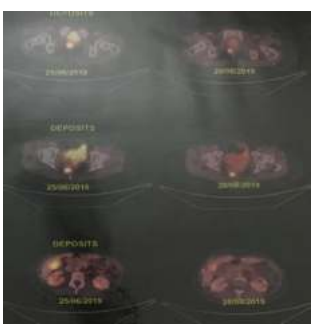
Another 70 year old male, Known case of HCC with metastasis and several co-morbididties is leading a smooth life with no non tolerable issues due to Pembrolizumab.

"In order to treat an aggressive cancer, you have to think outside the box"

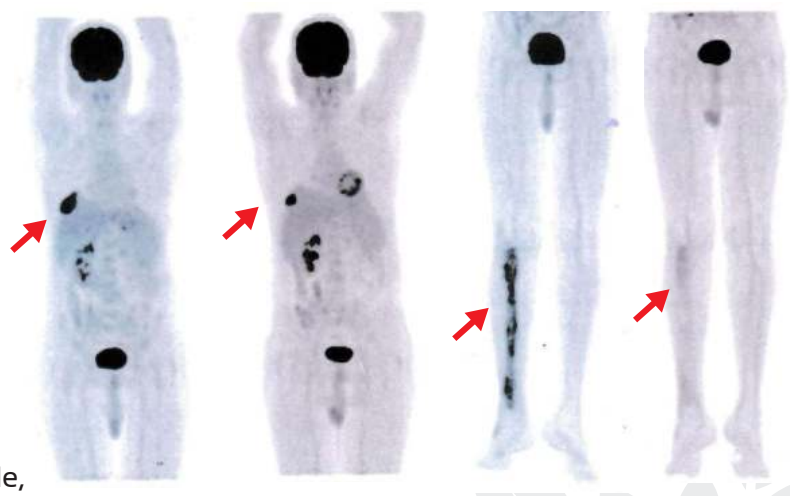
Although we haven't yet mastered all the cancer fighting capabilities, Immunotherapy is already helping to extend and save the lives of many patients with incurable and non treatable aggressive cancers.

With the more precised and personalised immunotherapy,

I have been able to demonstrate the benefits in many patients and the notable ones as follows



A 53 Year old female, Known case of Anal canal melanoma with metastasis, where no role of chemotherapy / surgery has achieved a stable status with X cycles of Inj. Nivolumab.



Since immunotherapy trains the immune system to remember cancer cells "Imunomemory" results in longer lasting potentiallity benefits which is revealed by, a pt of LRCC with lower limb metastasis has been saved from the need of amputation and is leading a better quality of life with nivolumab.

Currently, researches going on to determine which patients are likely to respond to treatment and is leading to new strategies to expand the number of patients who may potentially benefit from treatment with Immunotherapy.

" If you change the way you look at things, The things you look at changes"

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Writer's cramps

Before and after EMG guided Botulinum injection

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Consultant Neurologist &
Neuro Sonologist

EMG guided Botolinum toxin is a boon to patients with dystonia. Here is presented one such patient with remarkable recovery.

28 year old gentle man not able to hold the pen and write. Severe Flexion dystonia of the forearm muscles.

Two weeks later, Now able to hold the pen and write neatly.

Effect has persisted for more than one year.

EMG guided Botolium Toxin being given to the forearm muscles.

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Revive, Rehabilitate and Rejuvenate with

Hyper Baric Oxygen Therapy

Royal Care Super Specialty Hospital has introduced Hyperbaric oxygen therapy (HBOT) with modular rectangular chamber for the first time in Coimbatore and entire western Tamilnadu. It was inaugurated by our Chairman, Dr.K.Madeswaran on 21st August 2020 in the Department of Physical Medicine and Rehabilitation.

Hyperbaric Oxygen Therapy (HBOT) is a treatment in which the patient, under medical supervision, breathes 100% oxygen inside a treatment chamber that is specially pressurized to be at higher than the normal atmospheric pressure (which is 1 ATA).

Oxygen is normally bound to only haemoglobin in the red blood cells and carried to various tissues through blood. Breathing 100% oxygen at increased atmospheric pressure like in deep sea pressure (of more than 1.5 ATA) causes oxygen to be dissolved in our blood plasma and increases its availability 3 times more than normal to our body's tissues.

Hyperbaric oxygen therapy has a number of potential positive effects on the body with its Hyper-oxygenation causing angiogenesis, antibiotic synergy, antimicrobial activity against anaerobic bacteria, immune stimulation, toxin reduction, anti inflammatory effect, anti edema effect, stem cell release, fibroblast proliferation, osteogenesis and nitrogen bubble reduction in decompression sickness.

Royal Care Super Specialty hospital has procured the state-of-the art rectangular multiplace chamber manufactured by Tekna, reputed in the US market for more than 20 years and has various certifications and safety clearances from US based agencies like US FDA 510(K), ASME(U), PVHO-1, NFPA-99 and NB.

HBOT is used as an augmentative treatment in the following conditions :

- Diabetic foot ulcers
- Acute Thermal burns
- Crush injuries
- Compromised skin grafts and flaps
- Refractory osteomyelitis
- Post Radiation necrotic wounds
- Carbon monoxide poisoning
- Central retinal artery occlusion
- Idiopathic sensorineural hearing loss
- Decompression sickness
- Stroke rehabilitation
- Brain injury recovery
- Cerebral palsy
- Alzheimers disease
- Rheumatoid arthritis
- Fibromyalgia / Myofascial pain
- Insomnia / Chronic fatigue syndrome
- Irritable bowel syndrome
- Erectile dysfunction/ Infertility
- Sports injuries/ Wellness

Patients are assessed thoroughly by our Physical Medicine and Rehabilitation (PMR) Consultants to check the fitness of the patients and to plan the treatment. The number of HBOT sessions, the duration of treatment and other parameters will be prescribed by the PMR consultants depending on the condition to be treated. Our expert consultants and staff will ensure the treatment process is made safe and effective with excellent therapeutic benefit and overall a gratifying experience.

To know more, please contact :
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Department of Physical Medicine and Rehabilitation

Dr. S. Noorul Amin Shahid
MBBS, MD, DPMR, DSEM(UK)

Dr. Priyavadhana.R
MBBS, MD, DNB(PMR), DPMR

Advanced Orbital and Facial Trauma Surgeries at Royal care

Dr. Suresh G MDS.,
Fellow in Cleft & Craniofacial Surgery (Smile Train)
Consultant Oral & Maxillofacial
Surgeon & Implantologist.

Introduction :

Management and reconstruction of the facial skeleton in craniomaxillofacial trauma continues to be a challenge and requires accurate restoration of the three-dimensional (3D) anatomic relationships during surgery. [1-3] Visual assessment during surgery is difficult and inaccurate due to the presence of soft-tissue swelling, avulsive defects, and comminuted and displaced structures. Intraoperative computed tomography (CT) has gained popularity in craniomaxillofacial trauma surgery over the past decade and is now utilized by many centers. Computer-aided surgery was initially designed for neurosurgery, later being utilized in oral and maxillofacial surgery due to the level of accuracy.[4] Preoperatively, patient's CT and magnetic resonance imaging (MRI) can be taken and interpreted to see the surgical site and associated anatomical structures.

Computer-assisted surgery can assist the surgical team preoperatively or navigation during surgery. Preoperatively, 3D models and images are used to help the surgeon to determine the placement of implants.

Injuries to the bony orbit are common among patients sustaining craniomaxillofacial trauma. The external orbital framework is disrupted in several different types of facial fractures (e.g. ZMC, frontal bone, Le Fort III). The integrity of the internal orbit can likewise be disrupted, either in isolation or as a component of complex midfacial or upper facial injury. The orbital skeleton provides support for the globe and ocular adnexa and houses neurovascular structures critical to normal visual sensory function. While disruption of the orbital framework can compromise these structures, such injuries are, fortunately, rare. Conversely, surgical management of orbital skeletal injuries is fraught with potential peril, as dissection, bony mobilization, or placement of intra-orbital hardware may damage the globe or critical neurovascular structures.

In this regard, advances in computer imaging have enhanced the surgeon's ability to safely dissect the internal orbit, have allowed for the design and manufacture of standard implants for orbital reconstruction, planning for correction of secondary deformities, quantitative assessment of fracture reduction and volume restoration, and have improved the ability to visualize, in real-time, the orbital anatomy during dissection.

Intra-operative imaging is routinely used in orthopedic surgery and neurosurgery to assess fracture repair in real-time. This has been particularly true for spinal surgery and hand surgery, in which fluoroscopy has become a routine method to assess fracture reduction and/or fixation intra-operatively. This allows the surgeon to evaluate the repair and make immediate changes in the operative management. Intra-operative imaging is not utilized as frequently in facial fracture repair, but is used in facilities that have the appropriate capability and resources.

In this article we present a patient with traumatic brain injury and facial bone fractures, who underwent facial bone reconstruction primarily with virtual surgical planning (VSP), pre- bent implants on 3D printed model, scarless surgical access- transconjunctival approach (Fig 1 and 2), intra operative 3D imaging, reconfirmed with post-operative images at Royalcare Superspeciality Hospital, Neelambur, Coimbatore which is the standard of care in managing such complex facial bone fractures in the western world.

Fig 1: Transconjunctival incision with lateral canthotomy and inferior cantholysis to approach infra orbital rim and orbital floor.

Fig 2: Suturing of lateral canthus and transconjunctival incision closure and existing laceration used to expose supraorbital rim and lateral orbital wall

Fig 3: Severely comminuted Right Supra orbital rim and lateral orbital wall approached via existing laceration and reconstructed with pre-bent Titanium plates and screws.

Case Presentation :

A 19 year old male with alleged history of road traffic accident, riding two wheeler without wearing helmet sustained severe traumatic brain injury and facial bone fracture involving right Fronto-orbito-zygomatico-maxillary complex with severe comminution of supra orbital and infra orbital rim, lateral wall of orbit, and blow out fracture of orbital roof and floor with herniation of orbital content and restricition of globe movement and right traumatic optic neuropathy (TON). He initially underwent fronto-temporo-parietal (FTP) decompressivecraniectomy and percutaneous tracheostomy and was taken for facial and orbital reconstruction (Fig 3,4 and 5) 14 days after injury. It was planned for computer assisted surgery planning (virtual surgical planning), followed by 3D printing of virtually planned model, implants were pre-bent in the printed 3D model and surgery executed as planned with intra operative imaging to confirm positioning of orbital mesh using O-Arm (Medtronics)

Fig 4: Comminuted right zygomatic buttress reduced and fixed by Keen's vestibular approach using pre-bent Titanium Implants and screws.

Fig 5: Severely comminuted infra orbital rim and orbital rim approached by Transconjunctival incision and fixed with pre-bent titanium plate for rim and titanium mesh for orbital floor reconstruction.

Fig 6: Pre op, intra op and post op pictures showing normal facial symmetry and restored Right Malar prominence.

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Virtual surgical planning (VSP) :

The orbit is very often affected by injuries which can leave patients not only with esthetic deficits, but also with functional impairments if reconstruction is inadequate. Computer- assisted surgery helps to achieve predictable outcomes in reconstruction. CT scan of facial bone was taken pre-operatively in 0.6mm cuts and DICOM images were used for computer assisted surgical planning with the help of 3rd party service provider (Osteo 3D). Orbitozygomatic fracture was repaired utilizing virtual planning to establish the appropriate position of the right zygoma. To accomplish this, the left zygoma complex was digitally rendered from a 3D CT reconstruction and subsequently mirrored and placed onto the right midface. The reconstituted virtual position of the zygoma served as a template and was then used to guide intra-operative positioning of the displaced fracture segments (Fig 7). Virtual planning also allowed for visualization of the sizable orbital floor defect and its reconstruction using an anatomical plate- preformed titanium mesh using the mirrored normal side orbital floor as template (Fig 8). Similarly VSP was also done for reconstruction of FTP craniectomy defect using mirrored image from left/normal side as template to be used in future for cranioplasty.

3D Model:

Virtually planned, reduced and aligned fracture segments on 3D CT image was printed as 3D model (Fig 9) made of bio-plastic material made out of corn starch, using a custom built printer with Fused Deposition Modeling (FDM) fabrication technique by a third party service provider (Osteo 3d). The printed 3D model was used as a guide on which titanium implants were pre-bent before actual surgery and used on table after sterilization. The 3D model was also ETOed and used as a template to reduce and align the fracture fragments on table to predetermined or anatomical position saving theater time.

Intra operative 3D imaging :

Today, intraoperative three-dimensional (3D) imaging is an important element in the workflow of computer-assisted orbital surgery. Clinical and radiological diagnosis by means of computed tomography is followed by preoperative computer-assisted planning to define and simulates the desired outcome of reconstruction. In difficult cases, intraoperative navigation helps in the implementation of procedure plans at the site of surgery.

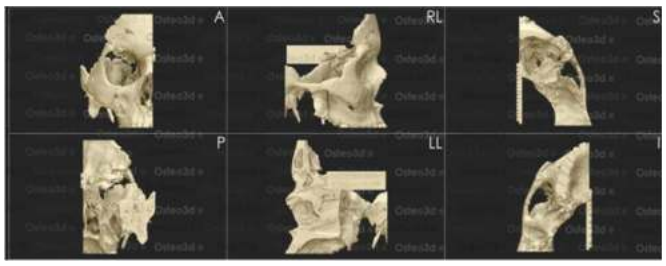

Fig 7: Virtually planned, reduced and aligned fracture segments to reconstruct orbital rims, wall and zygomatico-maxillary complex.

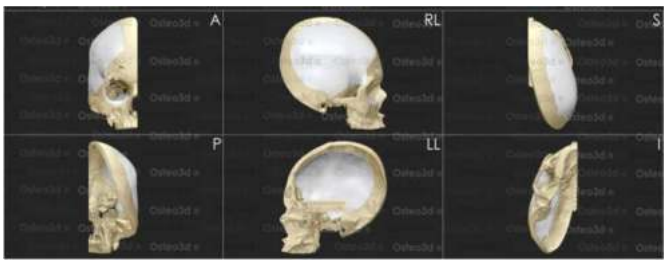

Fig 8: Virutual planning for orbital floor reconstruction and for future cranial defect reconstruction (shown in white) mirrored from normal /unfractured side (left side in this patient).

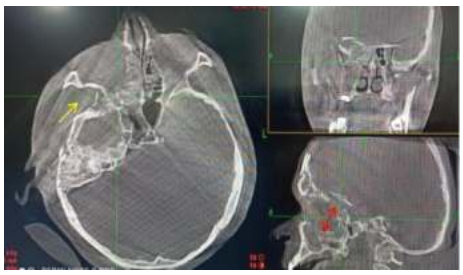

Fig 11: 3D intra op imaging with O-Arm prior to surgery shows displaced spheno-zygomatic suture (yellow arrow) and blow out orbital floor and roof fracture (red arrow) with herniation of orbital contents and fat.

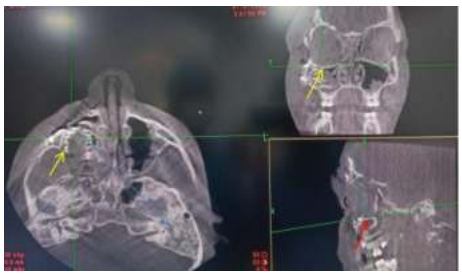

Fig 12: Intra op image with titanium mesh in position to reconstruct orbital floor shown as yellow arrow. Red arrow shows posterior most edge of titanium mesh not resting in correct position – posterior ledge.

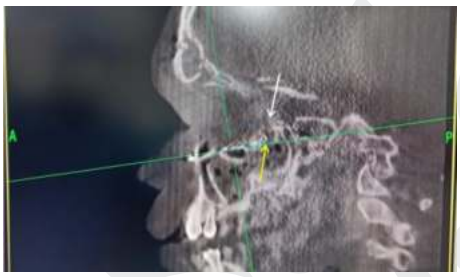

Fig 13: Intra op O-Arm image in sagittal view shows posterior most edge of titanium mesh- shown by yellow arrow resting on sphenoidal ledge- shown as white arrow (always available as stable point) after correction and sinusoidal shape of orbital floor restored.

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Intraoperative 3D imaging then allows an intraoperative final control to be made and the outcome of the surgery to be validated. Today, this is preferably done using 3D C-arm devices based on conebeam computed tomography. They help to avoid malpositioning of bone fragments and/or inserted implants assuring the quality of complex operations and reducing the number of secondary interventions necessary.

At our institution, we use the O-arm Surgical Imaging System by Medtronic, a portable computed tomography (CT) scanner that can provide high quality axial and reconstructed coronal and sagittal images of bony anatomy within seconds (Fig:10). These images provide a three-dimensional view of the anatomy that cannot be attained with standard two-dimensional fluoroscopy or radiographs. In addition, studies have shown that the O-arm delivers significantly less radiation than a standard maxillofacial CT scan.

Fig 9: 3D model with pre-bent implants in position

Fig 10: 3D CT images Pre op, Intra op, and Post op.

Discussion:

The zygoma is a quadrangular-shaped bone that provides a lateral and anterior projection of the central part of the face. It articulates with the frontal, temporal, maxillary, and sphenoid bone at the zygomaticofrontal, zygomaticotemporal, ZMC, and zygomaticosphenoid sutures. The Zygomaticosphenoid suture and Zygomatic arch are the key landmarks for the verification of anatomic reduction. Clinicians should understand that the zygoma forms major portions of the orbital floor and lateral wall, and therefore, all fractures of the ZMC involve the orbit. Treatment goals of ZMC fracture are restoration of facial projection and facial symmetry as well as restoration of orbital volume, globe position, and shape of the palpebral fissure. Intraoperatively, it is difficult to fully visualize all key areas of reduction in a complex ZMC fracture. The intraoperative O-arm™ provides a sense of security in managing complex craniomaxillofacial trauma cases; in that it provides valuable imaging intraoperatively that may prevent the need for "take-back revision surgery [5].

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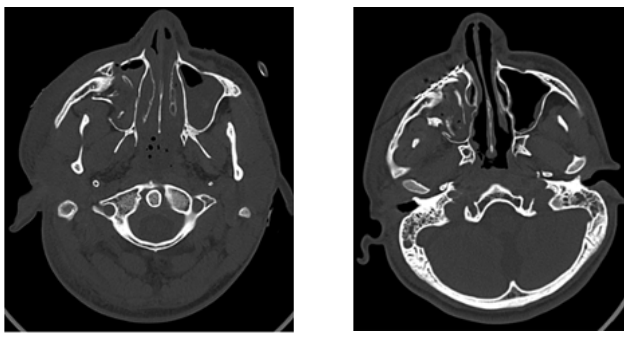

Fig 14: Pre op and Post op CT Axial view showing reconstructed zygomatic prominence

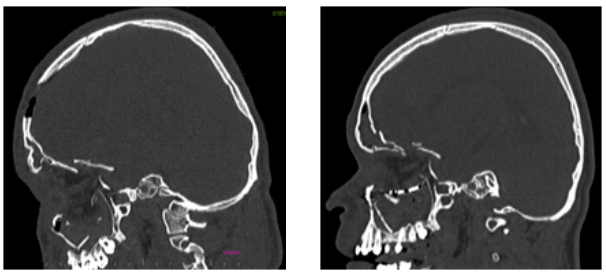

Fig 15: pre op and post op CT sagittal view with titanium mesh for orbital floor reconstruction

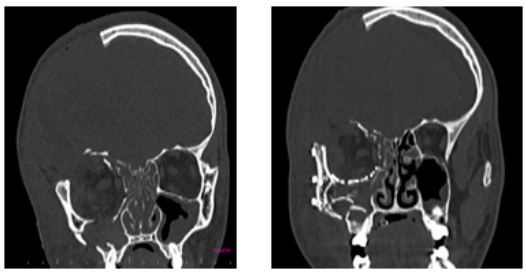

Fig 16: Pre op and Post op CT Coronal view with titanium mesh for orbital floor reconstruction

Conclusion:

Advances in computer technology and imaging have improved the accessibility and efficacy of orbital reconstruction for defects involving the bony orbit. Due to the complex shape of the internal orbit, proximity of critical soft tissue structures, and small margins of error, the orbital skeleton is an ideal anatomic region for virtual planning and real-time intra-operative navigation. Utilization of this technology has the potential to improve the surgical treatment of common problems, make challenging clinical cases more accessible and predictable, and has enormous utility as an adjunct [6].

The use of intraoperative imaging allows the surgeon to make real-time changes in operative management ranging from orbital plate repositioning to deciding whether to proceed with orbital floor exploration. This not only allows for immediate optimization of repair, but may also decrease the need for revision procedures, reducing patient morbidity and improving patient outcomes.

Acknowledgement:

I would like to thank **Dr.C.Senthil Kumar** (Consultant Plastic and Cosmetic Surgeon), **Dr.N.Senthil Kumar** (Head Radiology), **Dr.R.K.Sabarieswaran** (Consultant Anaesthesiologist), OT staffs and O-Arm technicians for their involvement and help.

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REDUCTION MAMMOPLASTY

A Cocktail of Reconstructive and Aesthetic Plastic Surgery...

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Breasts are a modified sweat gland, which are adapted as mammary glands doing exocrine secretion of milk. The modernisation and its influence on fashion and social world are creating tangible effects upon women to conceive the idea of an 'Ideal shape'.

Women who have larger breasts suffer from major psychological problems and are a focus of unwanted bullying in public, do not fit into normal clothes and also find it difficult to take part in outdoor activities. They also suffer from chronic shoulder, back and breast pain.

Reduction Mammoplasty, a solution to the problem, is a procedure in which a volumetric reduction of the breast is done. In the process it also improves the shape of the breast and repositions the nipple areola complex to higher up.

PATIENT PROFILES

Teenagers - Giant virginal hypertrophy is a condition in which young girls around puberty develop massive breasts which are out of proportion to the rest of their body

Women after childbearing - These patients are usually interested more in correction of the post-lactation ptosis, also desire fullness in the empty upper breast pole and relief from symptoms due to heavy breasts

Women after menopause - These patients are ones looking for a breast reduction to relieve the symptoms related to large and heavy breasts rather than aesthetic causes.

OBJECTIVE

Ideal breast reduction procedures should produce a youthful and natural form of breasts. It has to appear symmetrical, nipple and areola are translocated to an appropriate location. The function of the breast is not to be compromised. Ideally, the scars should be less conspicuous.

Procedure

To make it simple, the procedure can be considered as two different steps, even though they are not mutually exclusive.

First, the skin resection pattern (envelope or the skin covering the breast tissue) and then the core parenchymal tissue reduction. The skin reduction strives to produce better shape and less visible scars.

The parenchymal reduction aims at relocating the nipple and areola complex with a viable blood flow and sensation. Which means that the nipple and areola are carried upon as flap based on a known blood flow pattern. Importantly it reduces the overall mass of the breast.

There are a plethora of options for each of the procedure. Each one has undergone various technical refinements to yield more predictable and reproducible aesthetic results.

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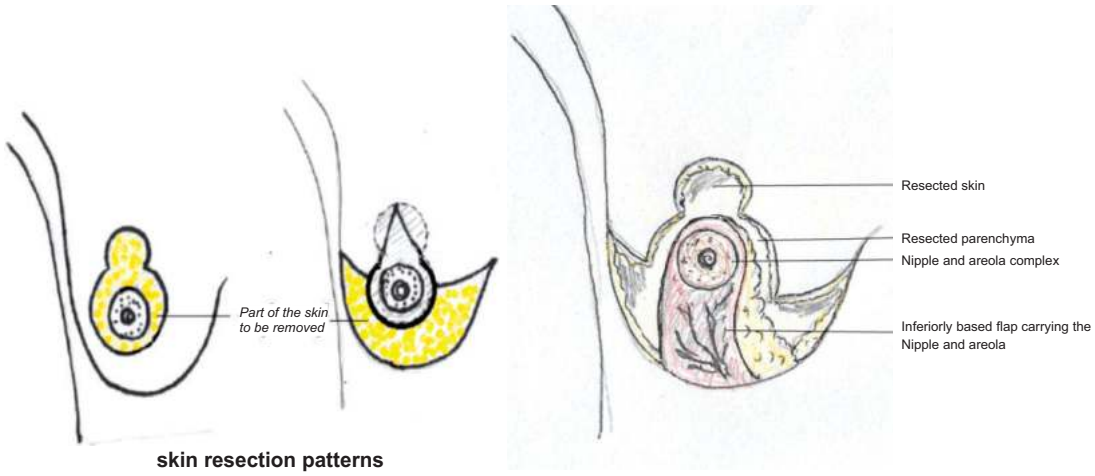

skin resection patterns

Inverted T resection (wise pattern)

This is best suited for very large breasts and patients who have massive weight loss with skin excess. The final scar appears inverted T. It could be combined with any type of pedicles. Since the skin from above moves down and hold the weight of the remaining parenchymal tissue, it is under some tension holding the shape.

Vertical resection

The skin excision forms a oval shape and the scar ends up as vertical and it is short. The vertical resection pattern uses the pillars of remaining breast parenchyma to shape the skin and to hold the breast up.

Pedicle.

It is the flap that carries the nipple and areola over a known pattern of blood flow. It could be superior or inferior or medial and or any combination such as supero - medial. Inferior pedicle is simple to perform. However, it tends to bottom out or form pseudo ptosis.

Which one to choose and why?

If it is a small breast and the resection is likely to be less than 500 gms then procedure of choice would be a vertical scar reduction with a superior pedicle or medial pedicle

If it is very large breast and the resection is likely to be more than 1500gms then the procedure of choice would be inferior pedicle technique with a inverted T scar.

Nonetheless, there are no hard and fast rules. When one starts getting more and more predictable results with one particular technique and one could adapt that to suit the majority of cases. But it is important to master other techniques as well.

Most surgeons now prefer superio- medial pedicle as the blood flow is robust, ease of rotating the flap and preservation of the sensation of the nipple. More importantly the long term result in holding up the shape is better.

Conclusion

Breast reduction is a procedure, which is a perfect marriage between plastic surgery and aesthetic surgery. It has evolved tremendously over the years due to the continuous and ongoing quest to achieve the objective of reducing the breast size, improving breast shape and relocating the nipple areola complex, at the same time minimizing the scars, preserving lactation and maintaining innervation to the nipple-areola complex.

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GLIMPSE

Maha Kumbabishekam of **Sri Vaithyanatha Eswarar Temple** at **Royal Care Premises** on Feb 5, 2020

Royal Care Blood Bank celebrates completion of 10,000th blood donation on 14.03.2020

West Zone Meet Medical Conference at IMA Hall Coimbatore 26.01.2020.

Health Awareness Talk Program at BPCL company on 17.03.2020 by **Dr.Krishnananda**

"Royal Runners " Runners group of Royalcare Hospital had a 10 km virtual marathon on August 29

Medical camp with KPR College at **Govt. High School,** Rasipalayam on 16.02.2020

Health Awareness Talk Program at Nirmala College on 12.03.2020 by **Dr.Devi.Gayathri -** City Unit

31st Week Road Safety Awareness Campaign & Medical Camp at Kaniyur Toll Plaza on 22.01.2020

CME Program with IMA at Mettupalayam by **Dr.M.N.Sivakumar** & **Dr.S.Lakshmikanth Charan** On 22 Feb 2020

Ray of Hope For CHRONIC KIDNEY DISEASE PATIENTS

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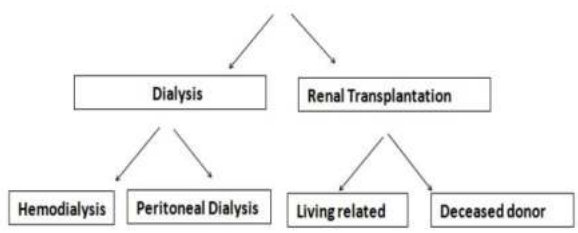
The responsibility for maintaining the composition of the blood in respect to other constituents devolves largely upon the kidneys. It is no exaggeration to say that the composition of the blood is determined not by what the mouth ingests but by what the kidneys keep; they are the master chemists of our internal environment, which, so to speak, they synthesize in reverse.

—Homer Smith, Renal physiologist

Chronic Kidney Disease - Problem Statement

There is a high prevalence of chronic kidney disease in India. The emergence of the problem starts from low birth weight due to maternal malnutrition, nutritional deficiencies, environmental contamination, indiscriminate use of known and unknown nephrotoxicants added with the growing burden of diabetes mellitus and hypertension related kidney disease. The exact number & burden of ESRD in India is not known and most people requiring renal replacement therapy (RRT) die due to inaccessible care.

Treatment modalities in ESRD patients



Hemodialysis

In hospital hemodialysis is the most common mode of RRT in India. The number of dialysis centres has vastly increased in India over the last decade. Yet mortality due to ESRD has not greatly decreased.

Improving survival in hemodialysis

There are a few well known factors and some emerging trends in improving survival in patients undergoing hemodialysis

A. Incremental dialysis

Thrice weekly dialysis is the norm when one is being initiated on RRT for ESRD. If there is significant residual renal function twice weekly dialysis can be initiated with careful follow up. There are even a small group of patients who do well with once weekly dialysis. Incremental dialysis tends to preserve existing residual renal function and will prevent long term dialysis related complications.

B. Water quality in dialysis

All patients undergoing Hemodialysis deserves to be dialysed with ultrapure water which by itself increases the quality of life and survival. Added to this ozone treatment of product water (micro plasma oxidation) which is practised in very few centre across the world, enhances microbiological purity.

C. Infection control

Cross infection has been a problem in dialysis centres due to increasing number of patients. Adherence to universal precautions and regular screening will decrease the burden to a great extent. Single use of dialysers and consumables rather than reuse if possible is an effective way to prevent cross contamination.

D. Supportive medications

Hypertension control, Correction of anemia, metabolic acidosis and bone mineral abnormalities are of paramount importance in patients undergoing RRT. Appropriate drugs as per guidelines need to be used to improve survival

E. Other factors

1. Improving nutrition and avoidance of protein energy wasting with adequate nutritional supplementation.

2. Control of fluid balance.
3. Maintaining adequacy of hemodialysis
4. Addressing co-morbid conditions appropriately.
5. Initiating dialysis through arterio venous fistula implying early preparation for RRT when the GFR is below 20 ml/min/m2.
6. Patient Compliance and motivation.

With these measures quality of life and survival can be enhanced in ESRD patients those who do not have the option of renal transplantation

Renal Transplantation :

The first successful kidney transplant was a living donor transplant.

Joseph Murray and his team at the Peter Bent Brigham Hospital, Boston, USA performed it on 23rd December, 1954 between identical twins. Since this historic event kidney transplantation has progressed from an experimental procedure to preferred treatment for End Stage Renal Disease (ESRD). Renal transplant offers longer survival, better quality of life at lower cost than dialysis.

Factors for successful renal transplant program

Given the over all high rates of success in kidney transplantation, it is important to look beyond graft and patient survival for other worthy measures of quality.

A. Comprehensive multi disciplinary care :

Having multi disciplinary care available within the transplant program give patients a sense of well-coordinated, excellent care. The transplant program should treat the whole patient, and not just the kidney by having direct access within the hospital to various allied health professionals (eg, dieticians, social workers, and psychologists)

B. Team work :

A dedicated team is of utmost importance for a successful Renal Transplant outcome.

- Transplant Nephrologist.
- Transplant Urologist.
- Vascular Surgeon.
- Transplant Co-Ordinator.
- Intensivist.

C. Ancillary departments

A successful kidney transplant program is only possible if all the departments of the hospital has latest diagnostic and therapeutic facilities including laboratory, radiology and others matching international standards.

D. Reducing infection risk

Cleanliness of the hospital starting from operation rooms to general area is very important and proper protocols should be followed in dealing with already immunosuppressed renal transplant recipients. Needless to mention that a good infection control team is essential for this program.

E. Quick response to complications

Periodic assessment with clinical evaluation and other ancillary laboratory tests will pick up complications earlier and thereby will increase the patient and renal allograft survival.

What are the complications of Living donor Nephrectomy

Major complication of nephrectomy are very rare around 0.2%. The long-term risk can be assessed precisely because of the careful follow-up of thousands of renal donors and extensive information available from other unilaterally nephrectomized patients. In Swedish experience 85% of donors were alive after 20 years of follow up where as the expected survival rate was 66%, suggesting donor survival is even better than that of the general population primarily due to health care follow up.

Conclusion

Access to renal replacement therapy has vastly increased over the last two decades though still inadequate. Careful patient evaluation and choosing appropriate RRT modality which suits the particular patient is important in patient survival and reducing the care giver burden.

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Combined CARDIAC SURGERIES

Optimising The Outcome

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Abstract : Increase in the life span, has resulted in increased need to perform complex procedures on the heart. This is challenging for any surgical unit as the mortality of combined Coronary artery bypass grafting (CABG) and valve replacement is higher than individual procedure. Presenting our unit experience on combined procedures in the last two months (June, July 2020) and discussing the measures to manage the challenges.

Introduction : Preoperative work up for cardiac surgery on a patient above 40 years, warrants coronary angiogram. This is mandated by the evidence that mortality and long-term survival are adversely affected if coronary stenosis of 70% and above are not addressed. (1) Mortality rate in combined coronary artery bypass grafting (CABG) and valve replacements are much higher than individual surgery. (2). Independent predictors of mortality includes age above 70years, history of previous neurological events, previous myocardial infarction, more than one valve replacement, and need for intra-aortic balloon pump. (3). Of the 13 surgeries done by our unit, during last two months , 3 (23%) were combined procedures. We intend to analyse thesecases and discuss the challenges in managing combined procedures and reasons for increased mortality, with an aim to develop a protocol to reduce the adverse outcome.

Case reports:

Patient 1: 76 years old male, presented with history of transient loss of consciousness, lasting for about 10 minutes. He recovered from this with no residual weakness. No demonstrable organic lesion was seen in the magnetic resonance scan of brain taken. EEG showed changes with possibility of seizure activity. Investigations revealed severe Aortic stenosis and moderate to severe mitral regurgitation. Coronary angiogram revealed triple vessel disease. Hence planned for CABG with replacement of both mitral and aortic valves. With three independent risk factors,(age, neurological episode, double valve involvement) he was considered as having a higher risk than usual combined procedures.

Patient 2: 66yrs old male, diabetic with chronic obstructive airway disease and biopsy proved abdominal tuberculosis, taking anti tuberculous drugs presented with pulmonary oedema. He had Class III to Class IV breathlessness since 3 months. Investigations revealed severe mitral regurgitation with coronary artery triple vessel disease. He underwent CABG with mitral valve replacement. With associated restrictive airway disease he also had higher risk for the surgery.

Patient 3:

A 55 years old lady presented with angina. She had an ejection systolic murmur and echo cardiogram revealed severe aortic stenosis with gradient over 100mm of Hg. Investigations revealed associated double vessel disease with tight left main ostial stenosis. She underwent CABG with aortic valve replacement as an urgent procedure. Of the three patients she had the least, risk factor but for the left main component.

Operative procedure: The monitoring and anaesthesia steps were followed as in any major cardiac surgery. Classical median sternotomy was performed and harvested left internal mammary artery and the saphenous vein grafts. Sub sequently cardiopulmonary bypass was initiated by cannulating the Aorta, superior and inferior vena cava in first two patients and right atrial cannulation for the third patient who didn't need mitral valve replacement. Aorta was clamped and cardioplegia was initiated with retrograde infusion of Del Nido cardioplegia and once aortotomy was performed antegrade infusion was done through the coronary ostia and cardiac arrest achieved. Subsequent steps were followed as usual completing coronary anastomosis, mitral and aortic replacement in that order.

All patients needed multiple coronary grafts. Mitral valve was replaced by subtotal preservation of valvular apparatus. The aortic valve in patient 1 was tricuspid and in patient 3 was bicuspid. Proximal anastomosis of the SVG grafts were done on cross clamp in first patient. Further closure was in the routine way. First patient needed temporary ventricular pacing and moderate ionotropic support. Coming off cardiopulmonary bypass was uneventful in all three patients.

Post operative period :
The laboratory results are given in Tables 1,2,3.

TABLE 1 : Data of patient 1

	Pre-op	1 pod	2 pod	3pod	4th POD	5TH POD	8TH POD
Total WBC count	8,100	19,400	36,200	34,300	28,400	20,200	14,600
Blood Urea	40	47	101	163	183	146	122
S. Creatinine	1.2	1.5	2.1	2.7	2.4	1.4	1.1
EGFR	59	45	30	22	25	49	60
Potassium	5.3	4.1	4.3	4	3.8	3.8	3.3
Procalcitonin		95.78			50.29		

TABLE 2 : Data of Patient 2

	Pre-op	1 POD	2nd POD	3rd POD	4th POD
Total WBC count	18,300	28,500	17,100	24,000	19,000
Blood Urea	34	55	52	65	36
S. Creatinine	1.5	1.7	1.3	1.2	0.6
EGFR	48	41	57	>60	>60
Potassium	4.7	4.5	4.4	4.0	4.0
Procalcitonin		67.21			11.75

TABLE 3 : Data of patient 3.
As there was no immediate acidosis or fall in urine output Procalcitonin not send.

	Pre-op	1 POD	2ND POD
Total WBC count	7,100	11,600	8,900
Blood Urea	22	25	29
S. Creatinine	0.7	0.8	0.7
EGFR	>60	>60	>60
Potassium	4.7	4.8	4.2
Procalcitonin	--	--	--

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TABLE 4 : Post operative period of three patients

	PATIENT 1	PATIENT 2	PATIENT 3
Blood Pressure Inside OT	Initally borderline 80- 100mm of Hg	 Stable	Stable
ICU	Maintained above 100	Stable > 130mm of Hg	Stable
IONOTROPES	Nor adrenaline Adrenaline Dopamine Moderate doses	Minimal Nor adrenaline Dopamine	Minimal Nor adrenaline
Nitroglycerin	++	++	++
Ventilation	Weaned on 2nd POD	Weaned on 2nd POD	Extubated Ist POD
Blood Gas Analysis	Immediate post op acidosis with lactate at 12 meq then reduced to normal PH and then alkalosis from2nd POD	Maintained within normal range	Normal
Urine output	Started decreasing from 7hrs post operatively and Went into oliguria by I POD , then recovered in 24 hours	Mild reduction in 12 hrs but recovered in 24 hours	Normal
Neurological status	Normal	Normal	Normal
Post operative event	Persistent Left Pleural drainage. Intercostal drain retained for 2 weeks	Persistent Left Pleural drain Intercostal drain retained for 1 week	Uneventful
Final outcome	Good . Patient dischargd Asymptomatically.	Good . Patient dischargd Asymptomatically.	Good . Patient dischargd Asymptomatically.

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Patient 1 showed features of inflammatory response by raised procalcitonin, higher WBC counts and deranged renal parameters in immediate post-operative period. Hence in 12 hours started on regime of hydrocortisone, Vitamin C and thiamine (HAT)along with other routine supportive measures. Being an older patient and in view of two prosthetic valve implantations as sepsis cannot be ruled out, higher antibiotics Meropenem and Teicoplanin combination was started.

Clinically patient improved from oliguric status, within a day. The ionotropes too could be weaned off quickly. The total count,procalcitonin and the serum creatinine levels came down .

Second patient also had raised procalcitonin and reduced urine output with marginal rise in renal parameters transiently. Hence he too was started on HAT regime.

Except for persistent drainage from left pleural drain, for the first two patients the recovery was uneventful for all patients .

DISCUSSIONS:

Long term survival benefit is documented if coronary revascularisation is combined with valve replacements, when coronary occlusion is above 70%. This fact has made coronary angiogram mandatory in all patients needing valve replacement surgery above 40 years. With increasing life span the number of patients needing combined cardiac procedures are also increasing. Though long term survival improves with combined procedures, the immediate operative mortality is found to be higher. Mortality of CABG combined with double valve replacement is more compared to single valve replacement. Results of doing valve replacement surgically and addressing the coronary disease by non surgical intervention has not been promising. (4) It has been seen, age above 70 years, previous myocardial infarction, previous neurological events, smoking need for intra aortic balloon pump and double valve replacements are independent risk factors for combined procedures.

The causes for increased mortality can be enumerated as 1. Effect of multiple pathology in heart. 2. Excessive inflammatory and compliment system stimulation leading to generation of super oxide radicals due to prolonged extra corporeal circulation. 3. Sepsis due to prolonged exposure 4. Multi organ dysfunction secondary to inflammatory response and sepsis 5. Immune responses, including transfusion related acute lung injury (TRALI) secondary to multiple blood transfusions .

Planning for reduction of mortality in these surgeries, involves addressing the enumerated causes. 1. Plan meticulous surgical technique 2. Perfusion technique modification with use of centrifugal pumps and haemofiltration. 3. Use of blood components instead of whole blood. 4. Myocardial protection with properly administered cardioplegia and left ventricular venting whenever necessary. 5. Trans oesophageal echocardiogram to rule out any correctable significant residual defect 6. Vigilant postoperative protocol to detect sepsis and inflammatory response by monitoring total blood count, renal function test, procalcitonin and look out for features of acidosis.

Paul K Marikk had brought out the concept of managing sepsis in a novel way considering sepsis as an inflammatory disease, mediated by host immune system.(6) Calvano et al had demonstrated before that bacterial endotoxins can alter the expression of 3714 genes in blood leukocytes. (7) Inflammatory response will be exaggerated in combined procedures due to prolonged extracorporeal circulation. These inflammatory responses can have deleterious effects on endothelium, microvascular circulation and myocardium. Many of the ill effects are produced by the multiple reactive oxygen species (ROS) like hydrogen peroxide, super oxide, hypochloric acid, peroxynitrites etc. Our body has its own ROS defence systems, but it becomes overwhelmed in case of severe inflammatory response, leading to damages of endothelium, mitochondrial dysfunction and can lead to multiorgan dysfunction. Though complex biomarkers like Isoprostanes, may be available in future to identify this situation, as of now, our routine post operative tests can reveal features of sepsis or inflammatory response. An analysis of WBC count, procalcitonin, serum lactate and

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blood gas analysis for acidosis can throw light into the probable exaggerated inflammatory response and sepsis.

When a patient who has good haemodynamics after surgery with good urine output, warm peripheries and no residual defect in echocardiogram, deteriorates then our fingers should point to systemic inflammatory response. The combination of hydrocortisone, ascorbic acid and thiamine is found to act at multiple levels of host response to infectious agent and restore the dysregulated host immune system, neutralize the oxidants and restore the mitochondrial function.

Review of literature gives excellent results when this regime is started early on with first signs of trouble. The doses being hydrocortisone 100 mg IV 6th hourly, Ascorbic acid 50mg/kg intra venously in divided doses, to a maximum of 5gms and Thiamine 200 to 400 mg intravenously 12th hourly.

This regime was started in Patient 1 and 2 with early signs of renal involvement and rising inflammatory markers. Both patients recovered fast from the deranged parameters.

Conclusion:

The fact that 23% of cases done were combined procedures points to the fact that the number of combined procedures are on the rise. Since the mortality of combined procedures so far documented being higher we have to develop strategies to reduce the mortality. This study points out that carefully planned meticulous surgical and myocardial protection techniques combined with post surgical echocardiographic evaluation of the result followed by vigilant post operative monitoring and intervening with novel anti inflammatory regimes can effectively tackle the low output syndrome from going into multi organ dysfunction. This holds much promise to reduce the mortality in combined cardiac procedures to the level of individual surgical procedures.

Limitation:

The number of patients covered in this paper is low to support the HAT regime as a guideline, but when the observations matches with other studies done with greater number of patients, these findings holds promise.

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Superior Capsular Reconstruction for SHOULDER with an Irreparable Massive Posterosuperior Rotator Cuff Tear - A Case Report

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Abstract:
A 65 year old gentleman presented with complaints of progressive pain over right shoulder for the past six months following fall onto his right shoulder one year back. He was diagnosed with massive retracted irreparable posterosuperior rotator cuff tear, for which superior capsular reconstruction with fascia lata autograft was performed. At 9 months follow up, patient has normal range of shoulder movements without any pain.

Keywords : Superior capsular reconstruction, Fascia lata graft

Introduction

Balanced force couples contributed by intact rotator cuff provides the glenohumeral stability in both coronal [1] and transverse [2] plane, during wide range of movements. In massive posterosuperior (supraspinatus and infraspinatus) rotator cuff tears, this balanced force couple is lost, leading to drop in joint reaction force [3] ending up in proximal migration of proximal humerus impinging against the acromion. This occurs due to unapposed action of delotid muscle during overhead activities and if it is not addressed in time, it will invariably result in cuff tear arthropathy.

Despite advances in surgical techniques chronic retracted tears are not always repairable due to poor elasticity [4], degenerative fatty infiltration [5] and muscle atrophy. Even if repaired, such tears have high chances of re-tear. Treatment options for such conditions includes physiotherapy (anterior deltoid strengthening exercises) debridement with subacromial decompression [6,7], partial repair [8,9] and tendon transfer [10,11,12]. Most of these procedures relieve shoulder pain but none of them failed to restore muscle strength during elevation and external rotation. Reverse shoulder arthroplasty [13] is indicated for patients older than 70 years.

This report describes a case of irreparable massive rotator cuff tear successfully treated by mini-open superior capsular reconstruction(SCR), to restore superior stability of the shoulder joint with a favourable post-operative outcome.

Case report

A 65 years old, right hand dominant gentleman came to outpatient department with presenting complaints of progressive pain over right shoulder for the past 6 months. Patient gives history of fall on his right shoulder 1 year back. He has difficulty in overhead activities and difficulty in activities of daily living like combing hair, wearing shirt and eating food. Physical findings on initial examination were markedly resticted shoulder range of movements and decreased abductor/external rotator muscle strength were observed. Atrophy of the supraspinatus and infraspinatus muscles were observed. Preoperative UCLA score was 8/35.

Shoulder examination

On evaluation, x-ray findings showed proximal migration of the humeral head without much arthritis. Magnetic resonance imaging (MRI) was performed which revealed a massive rotator cuff

tear (supraspinatus and infraspinatus muscles), which was retracted far behind the glenoid fossa with severe atrophy and grade III fatty infiltration (Goutalier classification) with occupational ratio less than 30 percent. The subscapularis muscle was intact. Thus a diagnosis of massive retracted cuff tear, Patte type 5 was made, with Goutalier grade III fatty infiltration and severe atrophy with poor occupational ratio (<30%), without glenohumeral arthritis (Hamada type 2). Considering the chronicity and massively retarcted posterosuperior rotator cuff tear, patient's persistent discomfort, surgery was elected. Miniopen superior capsular reconstruction with fascia lata autograft was performed.

Surgical technique

Shoulder arthroscopy was started with the patient in beach chair position under general anaesthesia. Posterior portal was established for initial assessment of the glenohumeral joint. Intraarticular arthroscopy revealed autoloss of biceps tendon and an intact subscapularis. Then anterior portal was established through the rotator interval and clearance done. Bursal scopy revealed subacromial bursitis.Lateral and anterolateral portals were created to complete subacromial decompression. Cuff tissue was not visualised at all as it was withdrawn far behind the glenoid fossa, hence the tear was considered irrepairable. Right thigh was prepared for the harvest of fascia lata. Skin incision was made over the lateral thigh around the greater trochanter of the femur and 10 x 4 cm fascia lata was harvested. Then graft was folded twice and stitched to keep it from unfurling (graft size after folding: 5 cm mediolaterally and 4 cm anteroposteriorly).

Bony bed over the superior glenoid and rotator cuff footprint on the greater tuberosity was prepared. Two 5mm titanium suture anchors were inserted onto the superior glenoid of the right shoulder. Free sutures were passed onto the medial and lateral end of the graft outside the shoulder, using a suture shuttle (scorpion). By mini-open approach the graft was inserted into the subacromial space through the lateral incision and then medial side of the fascia lata is attached to the superior glenoid and the knots were tied one by one. Lateral side of the fascia lata was attached to the rotator cuff footprint on the greater tuberosity by using the double row suture bridge technique. Finally, side-to-side sutures were added between the graft and the infraspinatus tendon to improve force coupling in the shoulder joint.

Post operatively patient was advised to use abduction sling till six weeks due to poor bone quality and put on passive ROM exercises till the end of first month. Active ROM exercises were started after one month.

Patient was symptomatically better and doing well without any pain. Muscle training exercises started after two months. At 9 months follow up patient had normal range of shoulder movements without pain. He was doing his activities of daily living without any difficulties. Postoperative UCLA score was 31/35.

Discussion

There are various treatment options for symptomatic patients with massive irreparable rotator cuff tears, but there is no consensus. Mihata et al [14] described superior capsular reconstruction(SCR) using fasica lata autograft from patients thigh, a new surgical technique for irreparable rotator cuff tear to improve superior stability by restoring the balanced force couples across the shoulder joint. Hirahara et al [15] and Burkhart et al [16] modified this technique using acellular dermal allograft instead of fascia lata autograft and concluded that SCR is a joint preserving surgery and a good alternative to reverse shoulder arthroplasty in patients with massive irreparable rotator cuff tears. Regarding anatomy of the superior capsule, it is a thin layer of interwoven collagen [17] attached to the undersurface of supraspinatus and infraspinatus, extending from the glenoid medially to humeral head laterally, there by resisting superior translation of humeral head.

In a biomechanical study Ishihara et al [18] demonstrated the role of superior capsule, in which tear, in the superior capsule significantly increased anterior translation, whereas defect in the superior capsule significantly increased glenohumeral translation in all directions and increased contact pressure between humeral

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head and coraco acromial arch, compared to the intact superior capsule. Thus superior capsule acts as an hammock overlying the shoulder joint to prevent the humeral head from making contact with undersurface of acromion. Regarding graft thickness, Mihata et al [19] conducted a biomechanical cadaveric study and concluded that 8 mm thick fascia lata graft attached in 15 to 45° abduction restored shoulder joint stability.

Mihata et al [20] compared fascia lata autograft versus acellular human dermal allograft to assess the ability to restore superior stability and concluded that fascia lata graft resored superior glenohumeral stability, subacromial contact pressure and superior glenohumeral joint force whereas dermal allograft partially restored superior glenohumeral stability. Mihata et al [21] showed that acromioplasty along with SCR reduces subacromial contact area thereby postoperative rates of graft abrasion was avoided. Posterior side to side suturing [22] of the graft to residual infraspinatus tendon improved superior stability of the shoulder joint.

Conclusion

In summary arthroscopic/mini-open superior capsular reconstruction is a joint preserving surgery, reliable and useful alternative treatment to reverse shoulder replacement in patients with irreparable rotator cuff tears with severe fatty degeneration and atrophy in selected patients. SCR improves the function of shoulder joint by restoring superior glenohumeral stability. Normal muscle strength is restored and pain is relieved.

Pseudoparalysis is reversed as stable fulcrum is created. SCR with fascia lata graft is costeffective and durable reconstruction modality in selected patients with good functional outcomes.

Table 1: A- special tests

SPECIAL TESTS	RIGHT	LEFT
Neers	+	-
Hawkins	+	-
Empty Can	+	-
Full Can	+	-
ER Lag Sign	+	-
Gerbers	-	-
Belly Press	-	-
Arm Drop	+	-
Speed	+	-

Table 1: B Showing range of movements

RANGE OF MOVEMENT	RIGHT	LEFT
Total elevation	70°	180°
Internal rotation	L 5	T 12
External rotation	30°	70°
Abduction	45°	180°
Extension	45°	60°

Table 2: Postoperative range of movements

RANGE OF MOVEMENT	RIGHT	LEFT
Total elevation	160°	180°
Internal rotation	T 12	T 12
External rotation	60°	70°
Abduction	160°	180°
Extension	60°	60°

Fig. 1 X ray shows proximal migration without much glenohumeral arthritis (Hamada classification-type2)

(MRI)

Fig. 2A Showing retaction more than 5 cms

Fig. 2B Massive posterosuperior tear

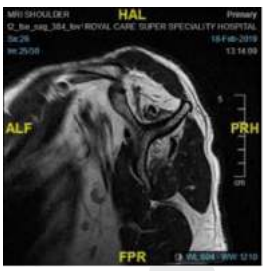

Fig. 2C Severe atrophy

Fig. 3 Showing fascia lata 10 x 4 cm - harvest

Fig. 4 Immediate postoperative X-ray showing Glenoid & foot print anchors

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Fig. 5 Shows clinical images of postoperative movements

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Congrats

Dr.V.R.Pattabhi Raman MD, DNB, (Resp. Dis).,

Consultant in Interventional Pulmonology & Sleep Medicine

Guest Speaker and Hands-on Workshop Trainer in Bangladesh Association For Bronchology And Interventional Pulmonology (BABIP)

Dr. Arjun Srinivasan MD, DM (Pulm & Crit. Care).,

Consultant in Interventional Pulmonology & Sleep Medicine

Presenting Medical Poster in American College of Chest Physicians at New Orleans, Louisiana.

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Dr. M. N. Sivakumar MBBS, DA, DNB, IDCCM, EDIC, FICCM.,

Consultant Intensivist

Head - Institute of Critical Care Medicine

Awarded a fellowship (FICCM) by the Indian College of Critical Care Medicine at Hyderabad.

Dr. Dinesh Chidambaram MS Ortho., FOTS (Ganga)., FASM (Arthroscopy)., Shoulder Fellow (Japan)

Consultant Trauma & Arthroscopy Surgeon

Presenting Medical Poster in Asia Pacific Orthopaedic Association at Bangkok, Thailand. He was selected as one among the twelve finalist's in entire pacific region.

Congrats

Dr.K.Raguraja Prakash

MRCS, DNB(Surg), FMAS, CNMT(USA), M.Ch(Neuro).,
Consultant Neuro Surgeon

for his second article being published in World Neuro Surgery Journal.

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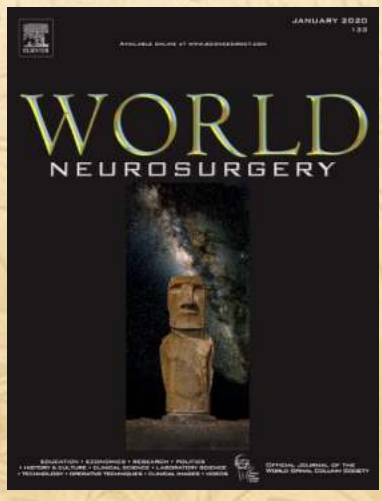

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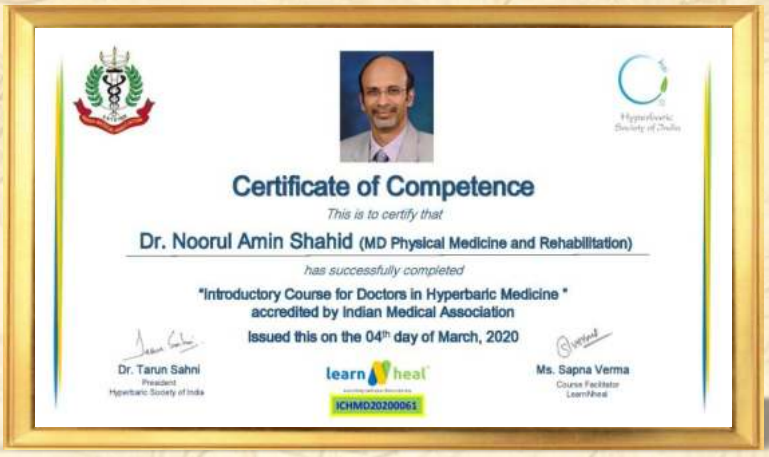

Congrats

Dr. S. Kalyanakumari

MD(OG), Dip.Gyn.Endoscopy(Ger), MBA.,
Consultant Gynaecologist & Laparoscopic Surgeon

has been conferred with the degree of Master in the Biotechnology of Human Assisted Reproduction and Embryology. She has completed the curriculum organized by the Valencian Institute of Infertility (IVF), coordinated by the University Business Foundation of the University of Valencia, ADEIT, during the academic year 2018-2019.

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Dr.S.Kalaivani

MS(OG), DNB(OG), MNAMS, MRCOG.,
Consultant Obstetrician and Gynaecologist

Completed MRCOG degree
(Member of Royal College of Obstetrics and Gynaecologist)

Royal College of Obstetricians & Gynaecologists

Dr. Mallikai Selvaraj MBBS, DCH, PGD-DN.,

Consultant Developmental Paediatrician

has successfully completed the Autism Intervention Training Program (AITP 2020) Level 1 at Ummeed Child Development Center - Training Facility

Dr. V. Arul Selvan, MD, DM (Neuro), MRCP (UK), CCST, FRCP (London & Edin).,
Consultant Neurologist

Completed his DM Neurology from Institute of Neurology at Madras Medical College, Chennai in 1996 and he achieved MRCP at Royal college of Physicians London in 1998, also he obtained FRCP (Edinburgh) in 2006 and FRCP (London) in 2008. He was a Consultant Neurologist at KMCH hospital, Coimbatore before joining our Royal Care Super Speciality Hospital.

Dr. Mohanakrishnan L, M.S, M.ch.,
Consultant Cardiothoracic & Vascular Surgeon

Completed MBBS at Stanly medical college, Chennai in 1981. He did M.S.(Gen.Surgery) at Madurai Medical College, Madurai in 1985. Also he achieved M.Ch. (Thoracic Surgery) at Madras medical college, Chennai in 1988. He was a Director of Cardiothoracic & Vascular surgery at Velammal medical college and hospital before joining our Royal Care Super Speciality Hospital.

Dr. Vijayakumar K, M.S, M.ch.,
Consultant Cardiothoracic Surgeon

Completed MBBS at Govt. Medical college, Trivandrum,Kerala in 1986. He did MS. General Surgery at Govt Medical college, Kerala in 1990. also he achieved Mch -Cardiovascular & Thoracic surgery at Govt. Medical College, Calicut in 1994. He was working as a Consultant Cardiac Surgeon at Velammal Medical College and Hospital, Madurai. Now he joined as a Consultant Cardiothoracic Surgeon at Our Royal Care Super Speciality Hospital.

Dr. Jaleel Ahmed, B.Sc., MBBS., DCH, MRSH (LON), FNNF (Fellowship in Neonatology).,
Consultant Paediatrician and Neonatologist - **City Unit**

Dr.Jaleel has completed his UG, PG at Coimbatore Medical College during 1976 to 1981 and 1983 to 1985. He has more than 30 years of experience in Pediatric & Neonatal Medicine. He was a Chief Pediatrician and Neonatologist at Sri Ramakrishna Hospital in coimbatore before joining our Royal Care Super Speciality Hospital.

Dr. M. Karunakaran, MD, FRCR, EDiR.,
Consultant Radiologist

Completed MBBS at Stanley Medical College, Chennai in 2003. And he achieved MD. Radiodiagnosis at Assam Medical College Dibrugarh, Assam in 2010. Also he achieved FRCR at Royal College of Radiology fellowship in 2017. Subsequently he has completed EDiR at Vienna in 2018. He was a Chief Consultant Radiologist at K G Hospital, Coimbatore before joining our Royal Care Super Speciality Hospital.

Dr. Dayanand Jairaj, MBBS, MS, M.Ch (Plastic Surgery)
Consultant Plastic, Reconstructive & Aesthetic Surgeon

Dr Dayanand has completed his MBBS and MS in General Surgery from Fr.Muller Institute of Medical Sciences in 2006 and 2010 respectively. Following this he did his M.Ch in Plastic Surgery from Amritha Institute of Medical Sciences in Cochin from where he passed out in 2014. He has a special interest in Microsurgical reconstruction following oncological resections and trauma and in Aesthetic surgery and was holding a post as Consultant at Dr Rela Hospital and Research Centre in Chennai before joining Royal Care Super Speciality Hospital.

Dr. Ram G Arun, MBBS, MD, (Anaesthesia & Critical Care), IDCCM.,
Consultant Intensivist

Completed MBBS from Meenakshi medical college, Kanchipuram in 2011. and MD Anaesthesiology and Critical Care from Sri Siddhartha Medical College, Tumkur, Karnataka in 2016. He worked as a consultant intensivist in multi speciality hospital in Coimbatore before joining our Royal Care Super Speciality Hospital.

Dr. Divya Anburaj, MBBS, DNB(Emergency Medicine).,
Consultant Emergency Physician

Dr. Divya has completed her MBBS from Dr.Panjabrao Memorial Deshmukh Medical College - Amravati, Maharastra in 2016. Also she has achieved DNB in Emergency Medicine from Rajah Muthiah Medical College And Hospital - Chidambaram. And now she joined as a Consultant Emergency Physician at our Royal Care Hospital.

Dr.G.Nivedita, MBBS, MS Ophthalmology.,
Consultant Ophthalmologist

Dr.G.Nivedita has completed MBBS from Stanley Medical college Chennai in the year 2007-2013. Also she achieved MS Ophthalmology from Aravind Eye Hospital Madurai from 2014 - 2017. She was Medical Officer at Aravind Eye Hospital before joining our Royal Care.

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