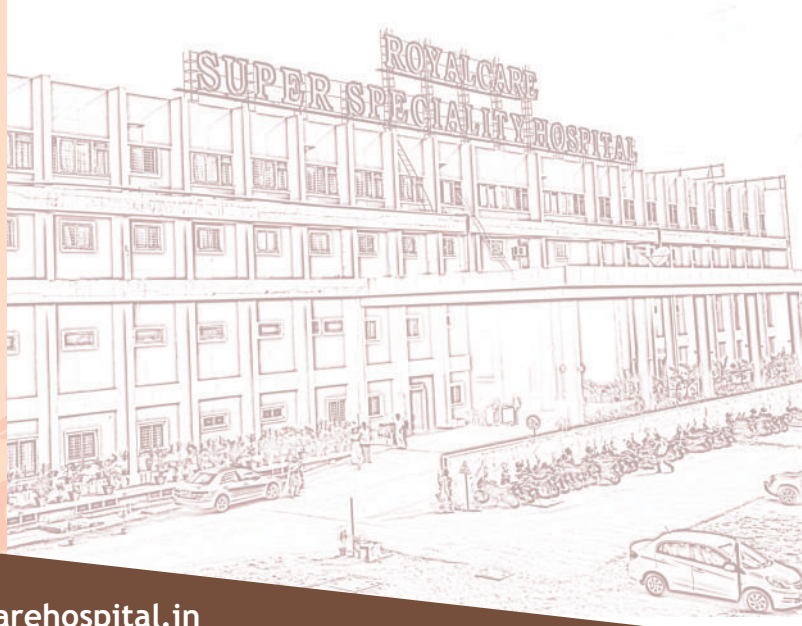
VOLUME - V, MAY 2019

Royal Care



CHAIRMAN'S COLUMN

Lots of collective efforts has been put into the growth of Royalcare and we have already started seeing the outcome which gives us more strength to strive much more harder.

As scheduled we have installed the Truebeam STX radiotherapy system and it will be of immense help to the needy onco patients in our community. Happy to share that Center for advanced pulmonary interventions(CAPI) has been established at Royalcare and a Poison center will be established soon in our premises. Many academic and social welfare activities are being organized by various departments to educate the medical fraternity as well as the common man.

I understand that a career in healthcare is more than just a job, it's a unique status where you make a difference in people's lives each and every day.

Regards

Dr. K. Madeswaran

Founder Chairman

From The Editor's Pen...

"Whatever you do, or dream you can, begin it.
Boldness has genius and power and magic in it. "
- Johann Wolfgang von Goethe

Royal Care

Every second brings a new beginning. True to those words, positive happenings are a plenty in this quarter of 2019 at Royal care. Inauguration of the first aid booth in railway station, launch of the first of its kind trauma ambulance enabled with real time data transfer to the ICU, inauguration of CAPI, to name a few.

Multiple workshops and seminars were conducted by various departments of the hospital which were eagerly attended and appreciated by the participants. Knowledge dissemination is one of the key ingredients in increasing awareness of the public and we take it very seriously. Applications for academic programs in DNB and critical care have been initiated from this academic year.

In this edition, we have articles on urology, cardiothoracic surgery and very interesting case report on spine surgery on a patient with bleeding diathesis. We congratulate Dr. Vijayan on his lecture as invited faculty and We welcome the new consultants across various medical fields who have joined the Royal care family.

"SAFE TRANSPORT SAVES LIVES"

"Real-Time data transfer from Ambulance to ICU"

Transport of critically ill patients is a difficult undertaking which can lead to several problems. Interhospital transfer of critically ill patients are associated with following challenges:

Most of the transfers involve paramedics accompanying the patients, who have difficulty in identifying and managing life threatening events.

From the ICU end there is difficulty in real time supervision and guidance of patient being transported by ambulance.

To overcome these difficulties, Royal Care Super Speciality Hospital introduced the Remote Monitoring System for the first time in South India.

This system shares data between the Ambulance and ICU. Patients vital parameters like pulse rate, blood pressure, oxygen levels and ECG are transmitted on a REAL TIME BASIS continuously from the ambulance to the ICU till they safely reach the hospital.

From the ICU end a dedicated team monitors the transmitted data and provides necessary and timely guidance for management of the patients.

This facility ensures patient safety during transfer and preparedness for further management by various clinical teams at the hospital.

The facility was launched on 16th March 2019 by **Mr. K. Periaiah IPS, Inspecter General of Police**, West Zone, Tamil Nadu, in the presence of **Mr. K.R.Krishnamurthy, Joint Transport Commissioner**, Coimbatore and **Mr. T.Balraj, RTO,** Coimbatore South.

Dr. K.Madeswaran, Chairman, RCSSH and **Dr.M.N.Sivakumar, Head, Institute of Critical Care Medicine, RCSSH** felicitated the guests.

ROYAL CARE'S ACCESS - DIAGNOSE - TREAT 2019

The Department of Pulmonary and Sleep Medicine at Royal Care Super Speciality Hospital, Neelambur conducted this first of a kind workshop on 3rd April 2019 at the hospital. The Chief faculty for the CME was Prof. Felix Herth, Chairman and Head Dept. of Pneumology and Critical Care Medicine, Thoraxklinik, University of Heidelberg, Heidelberg, Germany.

National faculty included the stalwarts of Interventional Pulmonology from across the country. The event was attended by over 60 delegates from all over the country.

The highlight of the CME was the Launch of Bronchoscopic Navigation for the first time in South India. The event showcased a Live case demonstration of Navigation Bronchoscopy for the first time in the country. This was followed by hands-on workshop on explanted animal lung models focusing on cutting edge interventional techniques such as navigation bronchoscopy, Cryo Trans-bronchial Lung Biopsy, Electrocautery and Bronchoscopic Thermal Vapour Ablation (BTVA).

The CME also commemorated the Inauguration of CAPI (Centre for Advanced Pulmonary Interventions) by Prof. Felix Herth. CAPI has been established at Royal Care with the intention of being pioneers in bringing the most up-to-date advancements in interventional techniques to India to provide most comprehensive patient care under one roof. During the inauguration, Chairman pledged the vision of establishing a state of the art training centre for interventional pulmonology at Royal Care.

CAPI is committed to training pulmonologists from across the world in various aspects of interventional pulmonology by offering short/ long term observerships and innovative training modules.

VENTRICULAR SEPTAL RUPTURE – REPARATIVE SURGERY

"The Strongest Hearts have the most Scars"- Jeff Hood

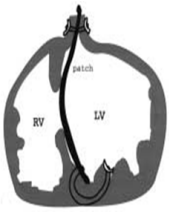
Dr. S. Krishna Kishor
MS, DNB(CTVS)
Consultant Cardiothoracic Surgeon

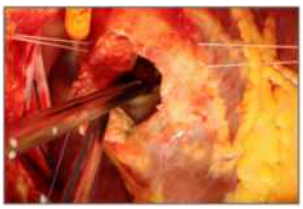
Summary : A 53 year old gentleman had sudden onset angina few days prior to visiting Royal care hospital. He had primary medical care elsewhere and came to seek Cardiac opinion as he was developing breathlessness which was progressively worsening.

On arrival at the ER he was restless, with systemic desaturation and raised JVP and tachycardia. Clinical examination and a bedside echo revealed a ventricular septal rupture (VSR) of the mid and posterior ventricular septum with a Left to right shunt and failing right ventricle. His biochemical parameters were deranged suggesting azotaemia and heart failure. EKG revealed a fully evolved inferior wall MI.

As he was unstable coronary angiogram was deferred for a day and was medically optimized. The next day he was taken up for coronary angiogram with Intra aortic balloon pump support , and was found to have severe triple vessel disease needing CABG and VSR repair.

The surgical team took over soon after angiogram and proceeded as an emergent procedure due to unstable hemodynamics. On Induction his CVP was 22 mm Hg and systemic saturation of 84%. He had three bypass grafts with Left internal Mammary artery and saphenous veins under standard Arrest in moderate hypothermia. The left ventricle was opened on the inferior surface and the rupture was repaired using a bovine pericardial patch adapting the exclusion technique. He was weaned off Cardiopulmonary bypass with inotropes and shifted to CTICU. Upon complete recovery he was discharged on day 7. On follow up he has no residual shunt with improved biventricular function.





Insight on VSR

- First described by Latham 1845
- First successful repair – Dr Denton Cooley 1956
- Initial days repair was attempted late after fibrosis of edges
- Early surgical repair – 1-11 days – Allen & Wood Wark
- Incidence – 1-2% of MI
- Accounts for 5% of early post MI deaths
- Occurs between 4- 21 days after MI with transmural infarct
- Age 44- 81 , mean 62.5yrs
- Acute Anterior and Inferior infarcts
- Slippage of myocytes after transmural infarct allows blood to dissect through myocardium
- Hyaline degeneration , fragmentation and enzymatic digestion also leads to VSR
- Classified into simple and complex
  - ~ Simple – through and through defect
  - ~ Complex – Serpinginous tract
- Multiple defects may be seen in 5-11%
- 25% die within 24 hrs of infarct with VSR
- 50% by 1 week
- 65% by 2 weeks
- 80% by 4 weeks
- Anecdotal reports of spontaneous closure
- Anterior VSR 60% (Apical 20%)
- Posterior VSR 40%
- Posterior VSR may be associated with MR

ARTHROSCOPIC / MINI-OPEN SUPERIOR CAPSULAR RECONSTRUCTION(SCR)

An advanced technique for irrepairable massive rotator cuff tear of shoulder joint - A case report

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

Introduction :

Shoulder joint stability is provided by balanced force couples contributed by intact rotator cuff in both coronal and transverse plane, during wide range of movements. In massive posterosuperior (supraspinatus and infraspinatus) rotator cuff tears, this balanced force couple is lost leading to proximal migration of proximal humerus impinging against the acromion due to unapposed action of delotid muscle during overhead activities. If it is not addressed, it will result in cuff tear arthropathy invariably.

Chronic large to massive rotator cuff tears are challenging for complete repair because of the development of tendon retraction with inelasticity, muscle atrophy and fatty infiltration. There is no established procedure to achieve complete repair due to factors that preclude repair are degradation of a torn tendon, muscle atrophy, and fatty infiltration, and a high rate of post-operative re-tear. Various surgical treatments have been developed like debridement and subacromial decompression, partial repair, tendon transfer, and reverse total shoulder arthroplasty.

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

Case report :

65 years male patient came to outpatient department with presenting complaints of progressive pain over right shoulder for the past 3 months. Patient gives history of fall on his right shoulder 1 year back. He had difficulty in performing overhead activities and difficulty in activities of daily living like combing hair,wearing shirt and eating food. Initial examination revealed markedly limited ROM and decreased abductor/external rotator muscle strength. Visually discernible atrophy of the supraspinatus and infraspinatus muscles were observed.

Shoulder Examination :

Special Tests	Right	Left
NEERS	+	-
HAWKINS	+	-
EMPTY CAN	+	-
FULL CAN	+	-
ER LAG SIGN	+	-
GERBERS	+	-
BELLY PRESS	+	-
ARM DROP	+	-
SPEED	+	-

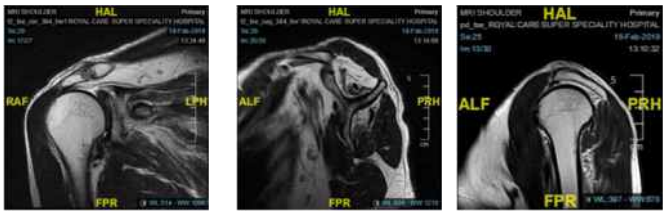
Range of Movement	Right	Left
Total elevation	70°	180°
Internal rotation	T 12	T 7
External rotation	45°	90°
Abduction	45°	160°
Extension	45°	60°

Investigations:

The plain x-ray findings were normal. Due to persistent pain and limited ROM of the right shoulder, plain magnetic resonance imaging (MRI)was performed which revealed a massive rotator cuff tear (supraspinatus and infraspinatus muscles) which were withdrawn back to the glenoid fossa, diagnosed as severe atrophy and grade III fatty infiltration on the Goutallier classification with occupational ratio less than 30 percent was observed. The subscapularis muscle was intact.

X-Ray

MRI



Diagnosis:

With clinical examination and investigations, diagnosis of massive retracted cuff tear was made, with grade III fatty infiltration and severe atrophy.

Plan of management:

This patient has massive irrepairable posterosuperior rotator cuff tear. Treatment options available are tendon transfer, superior capsular reconstruction and reverse shoulder arthroplasty. Reverse shoulder arthroplasty is reserved for patients more than 70 years with significant glenohumeral arthritis. Tendon transfers can relieve shoulder pain, but muscle strength in elevation and external roation cannot be restored adequately.

Hence superior capsular reconstruction with fascia lata harvest from patient's thigh was planned for this patient considering his age, degree of atrophy and fatty infiltration.

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 subscapularis was found to be intact. Then anterior portal is 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. The size of the superior capsular defect was measured using a probe as a rough guide.

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 harvested fascia lata of about 10x4 cm.Graft was folded twice and stitched to keep it from unfurling.(graft size after folding: 5 cm mediolaterally and 4 cm anteroposteriorly)

Massive irrepairable rotator cuff tear

Fascia lata 10 x 4 cm-harvest

Bony bed over superior glenoidand rotator cuff footprint on the greater tuberosity was prepared. Two 5mm titanium suture anchors were inserted on 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 attachedto 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.

Glenoid & foot print anchors

Postop protocol:

Patient is advised to use abduction sling till 6 weeks due to poor bone quality and put on passive ROM exercises for 4 weeks. Active ROM exercises were started after 1 month. During the follow up patient is symptomatically better and doing well without any pain. Muscle training exercises are to be started after 2 months.

Conclusion:

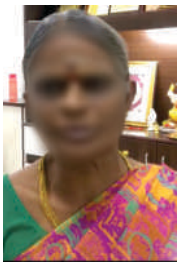
Arthroscopic/mini-open superior capsular reconstruction restores superior glenohumeral stability and function of shoulder joint with irreparable rotator cuff tears. This reconstruction technique is a reliable and useful alternative treatment for irrepairable posterosuperior rotator cuff tears with severe fatty degeneration and atrophy in selected patients in experienced hands.

THE NEUROLOGY DEPARTMENT AT ROYAL CARE SUPER SPECIALITY HOSPITAL SPECILALIZED IN EMG GUIDED BOTULINUM INJECTIONS

Dr. K.Vijayan
MD, DNB, DM (Neuro), ASN (USA)
Consultant Neurologist & Neuro Sonologist

Before Injection

EMG guided Injection



After Injection

56 year old Ms. Selvi came with severe involuntory neck movements for the past 2years. On examination she had Severe Cervical dystonia. 300 units of Botulinum Toxin was injected into the ipsilateral splenius capitis, semispinalis capitis and contralateral sterna cleidomastoid muscle under EMG guidance. There was marked reduction in dystonia 2 weeks post injection.

Congratulations ! !

Dr. K.Vijayan

"Invited Speaker / Faculty at the NEUROSONOLOGY Workshop conducted during the 13th Indian National Stroke Conference at Ahmedabad March 2019"

Inauguration of First Aid Assistance Booth @ Coimbatore Railway Station

De-Addiction Awareness Talk Programme at LRT Company by Dr. P. Krishnananda

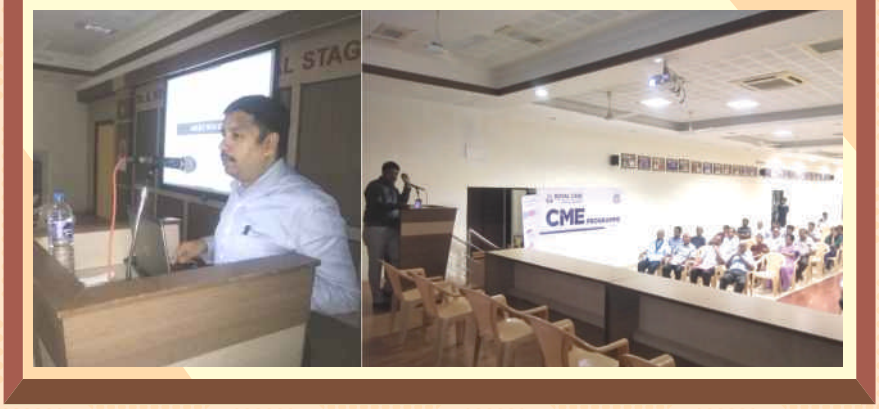
Cancer Awareness Talk Programme
At Shanthi Gears Company Limited by
Dr. N. Sudhakar, Dr. Arunandhi Chelvan & Dr. A. C. Sureshkumar

National Neuro Conference
at Trichy

Cme Programme At Ooty by Dr. Sandip Chandrasekar, Dr. Ravikumar

World Womens Day Health
Awareness Talk Programme
at Zee School by Dr. Mallikai Selvaraj

World Womens Day Health Awareness Talk Programme Government Middle School by Dr. Kalyanakumari



CME Programme at Pollachi
Dr. M.N. Sivakumar & Dr. S. Lakshmikanth Charan

Dr. S. Kalyanakumari - Invited Speaker for the Republic day Pattimandram at Vijay Super TV on Jan 21st on behalf of Royal Care

Neonatolology Resuscitation Workshop

World Hearing Day Consultation Camp - Dr. P. Chokkalingam

CME Programme IMA Palakkad by
Dr. Premalatha & Dr. C. Dinesh

MIS SPINE SURGERY ON BLEEDING DISORDER PATIENT TREATED BY SPINE SURGEON

Dr. M. Sudhakaran
MS (Ortho), DNB (Ortho), MNAMS, MRCS (Edin), FNB (Spine Surgery)
Fellow Endoscopy Spine Surgery (Endorsed by IITTSS)
Consultant Orthopaedic Spine Surgeon and Spine Endoscopist

Sub: Minimally Invasive Spine surgery (MIS) was performed on a congenital bleeding disorder lady Successfully.

47 years old lady from Erode had Road Traffic Accident (RTA) and she was admitted in Royal Care Super Speciality Hospital. She was found to have deficiency of clotting factors 1&7 which are essential for control of bleeding.

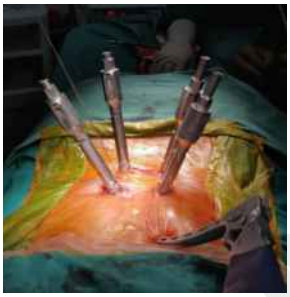
She had profuse blood loss due to a puncture wound (800 ML blood loss approximately) before reaching Royal Care Hospital.

There are 13 clotting Factors required to arrest bleeding. Usually there will be deficiency of only one clotting factor in a rare cases. But this lady had congenital deficiency of two factors 1 & 7, which is a rare phenomenon.

She had Normal delivery 20 years back in a renowned hospital in Coimbatore where she had massive blood loss.(Requiring almost 10 units of blood transfusion)

She was admitted with Fracture (Burst fracture L1) with compression on Nerves going to both legs. Normally any open Spine surgery has approximately 700ml blood loss for operation. But this patient has 5 times increased chance of blood loss due to the bleeding disorder. So she can bleed to death if operated.

To avoid this in Royal Care Hospital Dr.M. Sudhakaran, MIS (Minimally Invasive) Spine Surgeon had decided to do MIS Spine surgery (Percutaneous fracture fixation) for her. She had blood loss of approximately 20ml which is less significant. More importantly the patient required no blood transfusion for the entire procedure and post operative time. She was mobilised and allowed to walk within three days and went home happily. Till date there is no published record world wide on any spine surgeries done for such patient and this is a successful surgery done for the first time.



AUTISM IS NOT TRAGEDY, IGNORANCE IS TRAGEDY

Dr. Mallikai Selvaraj
MBBS, DCH, PGDN
Developmental Peadiatrician

What is autism spectrum disorder (ASD)?
Autism spectrum disorder is a developmental disorder (or condition) which affects child's social interaction, communication, interest and behavior. As autism is a spectrum disorder, each person with autism has a distinct set of strengths and challenges. The ways in which people with autism learn, think and problem-solve can range from highly skilled to severely challenged. Not all children with ASD or slow to speak in fact some begin speaking quite early, but may have an unusual quaint way of talking. A person with a ASD does not always understand the rules of normal social interaction, may have difficulty in making friends and may have a love for routines.

What causes ASD?
Scientists know that genetics are one of the risk factors. Autism is associated with a combination of genetic and environmental factors. There's not one "autism gene" that's at work. For the children who have genetic predisposition when exposed to non conducive environment may develop ASD.

Characteristics of ASD
The characteristics of ASD range in severity and vary from individual to individual.
There are 2 common characteristics:

- Difficulties with social communication and interaction – autistic people may find it hard to join in conversations or make friends
- Repetitive behavior, routines and activities – such as fixed daily routines and repetitive body movements.

People with ASD may also be under- or oversensitive to certain sounds, lights, touch, taste, smell and body awareness known as sensory sensitivity. These characteristics are present over time and have a noticeable effect on daily life.
If you are concerned about your child interaction or communication you may seek advice from your pediatrician who can then refer your child to specialist services, where a range of professionals will see your child and speak with you about your concerns.

Red Flags

- No social smile by 6 months
- No babble by 12 months
- No gesture by 12 months
- No single word by 16 months
- No pretend play by 18 months
- No two-word phrases by 24 months

Loses language skills or social skills at any age

The assessment may include the following :
Interviews with yourself and our observation of your child.

- Details of pregnancy birth and development
- Physical examination
- Specific ASD assessments.

Professionals Involved Include

- Developmental paediatrician
- Mental health specialists, such as a psychologist and psychiatrist
- Occupational therapist
- Speech and language therapist
- Learning disability specialist (if appropriate).

Once a diagnosis is made on the profile of your child's needs is clearer, most of the intervention is geared towards ensuring that your child is educated in a suitable school or is suitably supported in a mainstream school where difficult behaviour may be appropriately managed. Gaining an understanding of the diagnosis and how it affects the child and also the learning strategies to cope with an any problems that may be encountered is a vital component for parents of a child newly diagnosed with ASD. It seems like a normal topic these days in the society though it comes with a pain seeing your child with autism. But the good news is that those with autism is as good as achieving success in their areas like any individual. Though it is not confirmed, the tech giant, Bill Gates, has symptoms of autism. His way of avoiding eye contact with people, short monotone speeches suggest high possibilities of autism. However, when success is his, who bothers about autism. As a parent or a well intentioned guardian, you'll have to be willingly involved in the growth of your child.

TRUE BEAM STX

Dr. T. Sujit, MBBS, DMRT, DNB
Consultant Radiation Oncologist

A Linear Accelerator or LINAC is a device which artificially produces ionising radiation, which maybe photons (high energy x-rays) or electrons. These photons and electrons are used to target cancer in various parts of the body.

TrueBeam STx is an advanced linear accelerator and radiosurgery treatment system that allows doctors to target hard-to-reach tumors. The TrueBeam can treat any solid cancer, but its special qualities may be of particular advantage with certain types of cancers like lung cancer, brain cancer, spinal cord tumors, liver cancer, pancreatic cancer, prostate cancer and many recurrent and inoperable tumors.

The TrueBeam STx can deliver various techniques of radiation therapy like 3D Conformal Radiation Therapy (3DCRT), very precise radiation therapy techniques like Intensity Modulated Radiation Therapy (IMRT) and Volumetric Arc Therapy (VMAT), Image Guided Radiation Therapy (IGRT) and also very high intensity, highly focussed radiation techniques like Stereotactic Radio-Surgery (SRS) and Stereotactic Radiation Therapy (SRT). With on-board imaging facilities like cone-beam CT (CBCT) and Kv Imaging (KVI), it is now possible to track the tumor movements even during respiration and accurately target the tumor, while saving the normal tissues. The Linear Accelerator is also equipped with multiple Electron energies to treat superficial tumors.

Imaging technology that sees the tumor and adjusts patient position

The TrueBeam machine uses cutting-edge imaging technology to capture images of the tumor, even when it moves during the natural breathing patterns. TrueBeam's on-board imaging system captures CT scans and fluoroscopy, images to help physicians ensure that the patient's tumor and normal organs are positioned with millimeter accuracy, and that motion is properly controlled. It uses these images to confirm that the radiation beams are always targeting the tumor and not missing it. Imaging is also used to verify the exactness of patient and tumor positioning without any day-to-day variation or variation in bowel gas and bladder filling. These are the main features of IGRT or Image Guided Radiation Therapy.

Volumetric Modulated Arc Therapy (RapidArc) for intricate sculpting of the radiation dose

Because tumors aren't perfectly round, TrueBeam STx can alter the shape of the radiation beam to match the shape of the tumor. This decreases the amount of radiation to healthy tissue that surrounds the tumor, thereby reducing the severity of side effects. It is also possible to deliver a differential dose of radiation within the same tumor volume.

Respiratory gating that virtually freezes tumor motion caused by breathing

The Respiratory Gating feature of TrueBeam STx is especially good for tumors in the chest and abdomen because it adjusts for movements in tumors, which are nudged in various directions with each breath. With respiratory gating, the TrueBeam sends out radiation only when the tumor is within the beam's line of delivery. In combination with the TrueBeam's on-board imaging, the effect is a much higher degree of protection for healthy tissue adjacent to the cancer resulting in lesser side effects.

Flattening filter free (FFF) mode for ultra-fast treatment.

SABR, also known as stereotactic radiosurgery (SRS) or stereotactic body radiation therapy (SBRT), is a type of cancer therapy in which very precisely focused beams of radiation target the tumor. The beams are as exact as a scalpel, but accomplish tumor destruction without any incisions. High Intensity Mode of TrueBeam STx rapidly delivers hypofractionated SRS and SBRT treatments resulting in reduced treatment times and better patient comfort. IMRT treatments which used to take 20 minutes can now be delivered in less than 5 minutes. SRS which used to consume a couple of hours can be completed in much shorter time.

The TrueBeam's capabilities mean physicians can have more confidence in the accuracy of treatment

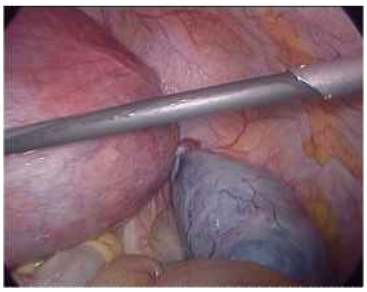
- More accurate radiation targeting and tracking of tumors, especially in hard-to-reach areas.
- Improved effectiveness of radiation treatment.
- Shorter treatment times.
- Fewer complications and side effects.
- More treatment options for people who aren't eligible for traditional surgery.

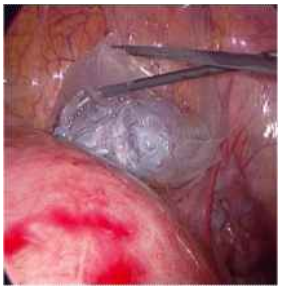
LAPAROSCOPY IN PREGNANCY
A case of twisted ovarian cyst complicating pregnancy

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

Pregnancy poses challenges in the diagnosis and surgical management of acute abdomen for several reasons. Almost 2%of pregnant women will undergo non obstetric abdominal surgery. Most common surgical emergencies include appendicitis ,ruptured corpus luteal cyst, torsion ovarian cyst, cholecystitis. In the past open approach is the method of choice in these patients. Laparoscopic surgery was felt most dangerous, infact contraindicated for many years. Since 1990 laparoscopy has become the standared of care for pregnant women who present with acute surgical emergency. There are many advantages in laparoscopy compared to open approach.

28years female G2 P1L1, Previous LSCS, booked elsewhere, at 22 weeks of gestation admitted with complaints of severe lower abdominal pain on the right side associated with vomiting. No history of bleeding pv or leaking pv. Fetal movements well appreciated. On examination patient was afebrile, had tachycardia with pulse rate of 120/min, blood pressure of 100/60, respiratory rate of 16/min. Per abdomen examination revealed severe tenderness and gaurding. Ultarsound done showed 8*6 cm cyst with increased echogencity. Torsion was confirmed by whirlpool sign on doppler study. She was taken for emergency laparoscopy. On laparoscopy the entire right adnexa found replaced with a gangrenous cyst measuring about 6*8 cm twisted around its axis 3 times. Ovarian detorsion done. Since there was no obvious evidence of resumption of vascularity even after the waiting period of 20 minutes salphingo oopherectomy proceeded with. specimen retrieved in endobag via umblical port.Histopathology revealed dermoid cyst. Pregnancy continued till term and elective LSCS was done.Both mother and baby are doing well.





Adnexal torsion is an uncommon cause of surgical emergency during pregnancy, incidence being around 5/10000. Torsion most commonly occurs during first trimester, as the enlarging uterus compresses the ovarian pedicle and restricts its mobility, the incidence of torsion is relatively low during late pregnancy. The predisposing factors for ovarian torsion include increasing size of the cyst, free mobility, long vascular pedicle and change of position of ovarian cyst by rotation of growing pregnant uterus .In cases of ART, ovarian stimulation indirectly increases the risk of torsion by increasing the size of ovary. Torsion ovary more commonly encountered on right side than left side due to the presence of sigmoid colon which limits the space for adnexal mobility.

Usually patients present with severe pain and palpable pelvic mass lesion. Nausea, vomiting in pregnancy and nonspecific pain of normal obstetric patients poses challenges in making diagnosis. Expanding uterus which displace other intra abdominal organs makes physical examination difficult .It is crucial to diagnose ovarian torsion at the earliest to preserve ovary. Ultrasound with power doppler is useful in diagnosing torsion. MRI can be done whenever indicated. The role of tumour markers and inflammatory markers like CA-125, CRP, IL-6 is limited. ***The first and second trimester scan should always include evaluation of adnexae.*** Xrays should be avoided, exposure of conceptus more than 5mgy increases the risk of spontaneous abortion, major malformations during early pregnancy and haematological malignancies in late pregnancy.

Laparoscopy can be done in all trimesters though it needs surgical expertise, most preferred in second trimester because implantation of pregnancy is more secure. Inherent risk of abortion and preterm labour should be explained to the patient. ***Laparoscopy has many advantages over open approach in pregnant patients including smaller incision, decreased pain , rapid recovery, early mobilization ,short hospital stay, few hernia, deceased risk of venous thromboembolism***

associated with pregnancy. The need for less narcotics and NSAID'S for pain control decreases fetal depression and chances of foetal malformation.

While operating a pregnant patient physiological changes of pregnancy should be taken into consideration to make the surgical procedure safe for both mother and the foetus. There is increase in tidal volume, increase in resting ventilation, increased O2consumption which leads to respiratory alkalosis .As the uterus enlarges ,maternal organs are displaced upwards, towards term the majority of the GI tract and other internal organs may be found above the costal margin. There will be elevation of diaphragm by maximum 4cm.Uterine compression on IVC decreases venous return resulting in 30% reduction in cardiac output that causes supine hypotension syndrome. The most important aspect of laparoscopy in pregnancy is the position and intra abdominal pressure during surgery. Dorsal supine position and left lateral tilt when gestational age is more than 20 weeks is preferred to avoid maternal hypotension.

As the placental circulation lacks auto regulation hypoxia, hypercarbia, hypotension and hypertension should be avoided. General anaesthesia is preferred over spinal because of the risk of hypotension. Pre-oxygenation is must. Sudden trendelenburg position should be avoided to minimize heamodynamic variation. Nitrous oxide should not be used for the fear of teratogenic effect. Lighter plane of anaesthesia is not advisible. Nitroglycerin is used to treat hypertension and it also act as tocolytic. Titrated doses of ephedrine is used for hypotension. Fluid overload should be avoided.

Intra abdominal pressure should be less than 12mmhg to avoid deleterious effect to the fetus. CO_2 pneumoperitoneun induces fetal acidosis and maternal tachycardia, hypertension, hypercapnia in animal models, as of now no data in human fetuses available. Port placement depends on the gestational age. Both open and closed entry can be used. Trocar placement should be altered according to the uterine size. Initial entry at palmar 's point would be safe during pregnancy as in other high risk patients. Ports should be placed with at most care to avoid the chances of injury to the gravid uterus.

The size of incision and the force of entry should be optimal. Electro surgical instruments and other hand instruments should be handled with care. Uterine manupulation should be avoided. Specimen retrieval is done in endobag via umbilical port and in third trimester through epigastric port.

Prophylaxis for VTE with SCD both during intra operative and post operative period along with early ambulation is recommended .

In the past, it was believed that ovarian untwisting may lead to release of toxic substance or formation of emboli. ***At present there are good evidences to support the conservative management with laparoscopic detorsion with little short term and long term morbidity even in cases where ovary appears dark purple or black. This is very useful in young patients with or without oopheropexy.*** The role of oopheropexy is unknown and it is difficult in pregnant patients because of anatomical displacement of ovary .Cystectomy at the time of detorsion is often risky due to friable nature of the tissue.Elective cystectomy can be done after 2-3 weeks to allow for odema and congestion to resolve. Few cases reports on ultrasound guided trans abdominal aspiration and repositioning of ovaries have been published.

If histopathology proved to be corpus luteal cyst progesterone support to be given up to 16 weeks of gestation. The risk of repeated torsion in subsequent pregnancy is unknown despite this 5% of individual will have subsequent torsion on the ipsilateral side during their life time.

Monitoring the fetus during intra operative and post operative period and monitoring the signs of preterm labour is important. Drugs to prevent preterm labour to be individualized.

It has been proved beyond doubt that laparoscopy is well tolerated by both mother and fetus with minimal adverse effect in all trimesters in the hands of expert surgeon

EXPERIENCE IN MANAGEMENT OF OESOPHAGEAL PERFORATIONS AT A TERTIARY REFERRAL CENTRE IN INDIA

Dept of Surgical Gastroenterology & HPB Surgery, Royal Care Hospital Coimbatore

Dr. Akash Selvathangam
MBBS, MS(Gen Surg).,
Registrar - Surgical Gastroentrology

Dr. N.Vignesh
MBBS, MS(Gen Surg), DNB, FIAGES.,
Registrar - Surgical Gastroentrology

Dr. A. Sandip Chandrasekar
MS, M.Ch (SGE), DNB (SGE), FALS (Bariatric)
Consultant Surgical Gastro, Advanced Laparoscopic, HPB, GI, Oncology & Bariatric Surgeon

Dr. S. Paulvannan
MS,DNB FRCS(Glasg), FRCS (Gen.Surg.)
CCST HPB Fellow (Cambridge, UK)
Consultant Surgical Gastro, Advanced Laparoscopic HPB & GI Onco Surgeon

Abstract

Oesophageal perforation is a surgical emergency and potentially life threatening clinical situation. Several factors including the difficulty of assessing the oesophagus, lack of strong serosal layer, unusual blood supply and proximity of vital structures contribute to high morbidity and mortality rate of atleast 20%. In addition, the diversity of clinical symptoms and signs combined with lack of individual experience may impede rapid identification of this rare but a potentially hazardous condition.

Accordingly, delayed diagnostic work-up may hinder timely and appropriate treatment with a negative effect on patient outcome.

Aim

To analyse the management of oesophageal perforations at a tertiary referral centre in India.

Materials and Methods

Retrospective analysis of prospectively collected data of 13 cases of oesophageal perforations managed in tertiary referral unit between Jan 2013 and Jan 2019. Each case was reviewed for the cause of injury, clinical presentation, time of presentation, methods of management, multiple operations and outcomes. All patients underwent treatment in the same unit.

Results

Average age was 42(23-65)years with M:F ratio of 6:4. Duration of presentation ranges from 6hours – 7 days. 7 cases had delayed presentation (>24hrs) among them 3 cases presented with shock. CECT with oral gastrograffin was done in all cases. All cases received broad spectrum antibiotics and antifungals. Primary procedure varied depending on the time of presentation, patient's general condition, cause of injury and operative findings. Additional procedure involves decortication in 5 and right lower lobectomy in 1. Feeding jejunostomy was done in all cases during primary procedure. All patients were managed in ICU with ventilatory support and ionotropes involving multidisciplinary team. Once recovered, oral gastrograffin was done based on clinical situation prior to starting them on liquid diet. T-tubes were removed between 6-8 weeks postoperatively. Follow-up period ranged from 7 – 900 days. Duration of hospital stay ranged from 12-52 days.

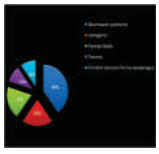


Fig 1 : Etiology of Oesophageal Perforations

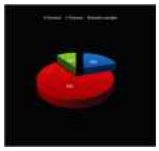


Fig 2 : Site of Perforation

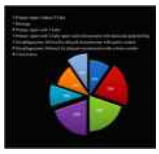


Fig.3: Primary Procedure

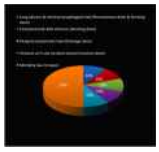


Fig.4: Morbidity & Mortality

Fig.5: Oral Gastrograffin Swallow Showing Leak Gastric Conduit Reconstruction

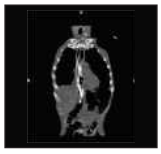


Fig.6: Oral Gastrograffin Showing No Leak in Post - OP

Discussion

Oesophageal perforation represents a diagnostic and therapeutic challenge in spite of the increased clinical experience and improvement in imaging and surgical technique. Intrathoracic perforations carry a poor prognosis due to rapid contamination ofthe mediastinum. Diagnosis of oesophageal perforation is challenging owing to a nonspecific and varied clinical presentation, hence high index of suspicion is needed.

Once suspected, patients should be evaluated promptly. CECT with oral gastrograffin is the investigation of choice. The sensitivity and specificity of CECT in detecting mediastinits secondary to oesophageal perforation can reach 100%, even in early clinical presentation. CECT confirmed the diagnosis in all our cases. 40% of our patients had spontaneous perforation.

Contrary to the literature, all the spontaneous perforation were involving right lateral wall of lower thoracic oesophagus.

The primary objectives in treating oesophageal perforations include early diagnosis, prevention of further contamination, eradication of infection, restoration of oesophageal integrity and establishment of nutritional support. Management is individualized according to cause of perforation, time of presentation, patient's general condition and operative findings as shown in Table 1.

Despite effective management, early and late complications are very high especially in patients with delayed presentation.

Reported mortality for treated oesophageal perforation is 10-25% when initiated within 24 hours of perforation.

Pate et al reported on 34 cases over a 30 years period with an overall mortality of 41% and without significance difference between early or late diagnosed patients.

In the experience of Wright et al a clear difference was observed in mortality rate of patients treated before or after a period of 24 hours (0 vs 31%).

S Wahed et al studied 101 cases of oesophageal perforations over a period of 10 years and reported mortality of 28% of which 81% was among those who had thoracic oesophageal perforation.

Morbidity of 40% and 10% mortality was noted in our series and only in those who had delayed presentation. The morbidity and mortality from our series of 10 patients is better than reported in the literature. Additional procedures were done in those who had delayed presentation except one who had empyema and underwent decortication on 7th POD.

Fig.7: Thoracic Oesophageal Perforation

Fig.8 : Freshened Thoracic Oesophageal Edges

Fig.9 : Primary Repair with T-Tube & intercostal Pedicled Flap

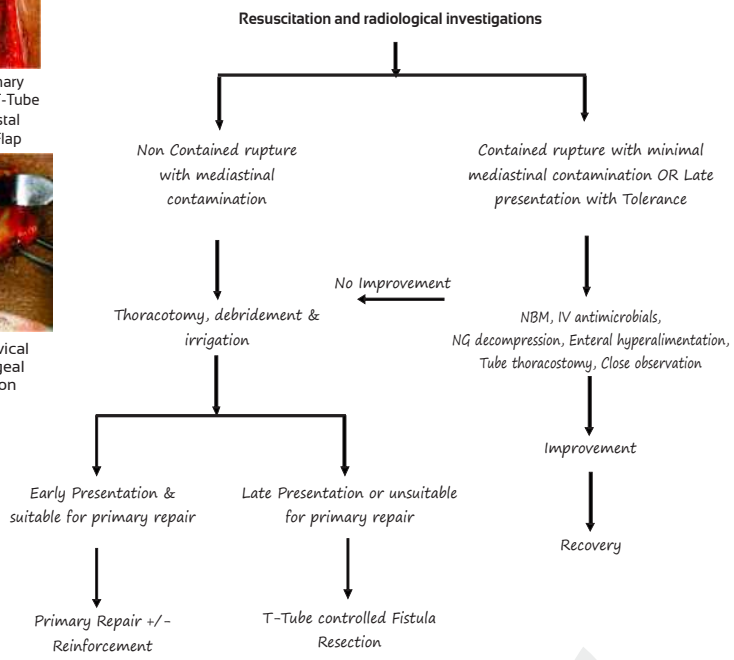
Fig.10: Cervical Oesophageal Perforation

Criteria to decide surgical vs non- surgical management and management algorithm based on the therapeutic strategies outlined by the literature8 is demonstrated in Box-2 and Algorithm:1

Conclusion

Oesophageal perforations remains a diagnostic and therapeutic challenge. Early recognition and initiation of treatment are mandatory in order to achieve satisfactory results. Significant mortality and morbidity occurs in patients presenting late. Excellent results can be achieved with early diagnosis and appropriate surgical management in a specialised unit with a multi disciplinary team approach.

Algorithm 1 : Spontaneous rupture of oesophagus



BOX 1: Initial resuscitaiton in oesophageal perforations	BOX 2: Criteria for non operative management
Airway control and supplementary oxygen	Contained perforation
Early anaesthetic involvement	Free drainage of contrast back into oesophagus
Large bore IV access and IVF resuscitation	No symptoms and signs of mediastinitis
Central venous access, arterial line monitoring and ionotropic supports if needed	No evidence of solid food contamination of pleural / mediastinal cavities
Urethral catheterisation and fluid balance monitoring	Controlled perforation
Broad spectrum antibiotics and antifungal agents	No underlying oesophageal disease
IV antisecretory agents	No septic shock
Strict NBM	Availability of intensive observation and access to multi disciplinary care
Large bore ICD	Low threshold for aggressive intervention

Royal Care Welcomes ...

Dr. T. Sujit, MBBS, DMRT, DNB
Consultant Radiation Oncologist

Completed MBBS from Govt. Stanley Medical College & Hospital, Chennai in 2000. He has achieved DMRT from Madras Medical College & Govt.General Hospital Chennai, in 2004 and subsequently obtained DNB (Radiotherapy) from G.Kuppuswamy Naidu Memorial Hospital, Coimbatore in the year 2007. He was a Head of Radiation Oncology in G.Viswanathan hospital Trichy.

Dr. S. Krupa Shankar, MD (Gen Med), DM (Onco), MHSc
Consultant Medical Oncologist

Completed MBBS from VMKVMC, Salem (TN Dr MGR Medical University) in 2008. He obtained MD General Medicine from PSG IMSR Coimbatore (TN Dr MGR Medical University) in 2013. And he Achieved DM Medical Oncology from Adyar Cancer Research Institute, Chennai (TN Dr MGR Medical University) in the year 2018.

Dr. E. R. Padmanaban, MBBS, MD(Gen Med), DCH
Consultant In Master Health

Completed MBBS from Madras Medical College in 1973. He obtained MD General Medicine from Stanley Medical College in 1992. and he achieve DCH fro the Institute of Paediatrics & Children Hospital, Chennai in the year 1994. He was worked as a Senior Medical Officer, General Physician at Govt. Stanley Medical College Hospital from the period of 1985-2008. He was also doing private Practice as Pediatrician since 2009 -2017 before joining our Royal Care.

Dr.G. Vijay Shanmugam, MBBS, MD (General Medicine), DM (Neurology).
Associate Consultant Neurologist

Completed MBBS from PSG Institute of Medical Sciences and Research Centre, Coimbatore in 2010,
He has obtained MD General Medicine from PIMS Pondicherry in 2014, He also was an Assistant Professor in General Medicine for six months in PIMS Pondicherry.
He was a Medical Registrar in Vijaya Heart Foundation, Chennai for one year. He also hold DM Neurology from SRM Chennai in 2018. Now he joined as a Associate Consultant Neurologist.

Dr.C. Arun Mozhi Varman, MBBS, MS (Gen Surg), F.MAS, DMAS, FICBS
Consultant General and Laparoscopic Surgeon - City Unit

Completed MBBS in 2009 and MS (Gen Surg) in 2013 both from Rajah Muthiah Medical Collage. He has obtained fellowship and diploma in minimal access surgery with fellowship of Interventional College of Robotic Surgeons, from World Laparoscopy Hospital. He has worked as a Senior Registrar in G. Kuppuswamy Naidu Memorial Hospital in the Department of Surgical Oncology for 3.5 Years.

Dr. Vadivel .S, MBBS, DNB (Med), MNAMS, DM (Neurology) PDF (Stroke & Interventional Neurology)
Consultant Interventional Neurologist - City Unit

Completed MBBS in 2006 From Thoothukudi Medical College and DNB (General Medicine) in 2011 from National board of examinations. He also holds DM (Neurology) From Madras Medical Collage. He has obtained Post Doctoral Fellowship in Stroke and Interventional Neurology from Rasagiri Hospital, Cochin. He worked as Consultant Neurologist at KMCH group of hospital.

Dr. Selvi Paulvannan, MBBS, DCH (UK)
Consultant Paediatrician - City Unit

Completed MBBS in 1989 from Thanjavur Medical Collage, Thanjavur. Trained in United Kingdom and obtained DCH in 2004 from Royal collage & Paediatrics and Child Health, London.

ROYAL CARE

making life better

ROYAL CARE SUPER SPECIALITY HOSPITAL LTD.

1/520, L&T Road, Neelambur, Coimbatore - 641 062.
Tel : 0422 - 222 7000

CITY UNIT :
372 F, Dr. Nanjappa Road, Coimbatore - 641 018
Ph : 0422 - 400 1000, 22 33 000

VELLALORE CENTRE :
RCSSH and CNRT 20,
KIN Medical Centre,
Podanur Road, Coimbatore - 641 111.

E-mail : contact@royalcare.hospital

24 hrs SERVICES

- Laboratory Medicine
- Blood Bank
- Pharmacy
- Ambulance & Trauma Care

24x7 Trauma Care
91434 91434
0422 - 222 7 444

DEPARTMENTS

- Accident & Emergency
- Anesthesiology & Pain Clinic
- Cardiology & Interventional Cardiology
- Cardiothoracic Surgery
- Critical Care Medicine
- Dermatology
- Dental & Maxillofacial Surgery
- Endocrinology
- Endogynecology (Laparascopy)
- ENT, Head & Neck Surgery
- General & Laparoscopic Surgery
- Fertility Care Clinic
- Internal Medicine & Diabetology
- Interventional Pulmonology
- Interventional Radiology
- Master Health Checkup
- Medical Gastroenterology
- Medical Oncology
- Minimally invasive spine surgery
- Nephrology
- Neurology
- Neurosurgery
- Nuclear Medicine
- Obstetrics & Gynecology
- Orthopaedic & Trauma Surgery
- Ophthalmology
- Plastic, Reconstructive & Cosmetic Surgery
- Physical Medicine and Rehabilitation
- Paediatric & Neonatal Surgery
- Psychiatry & Mental Health
- Radiology & Imaging Sciences
- Radiation Oncology
- Rheumatology
- Surgical Endocrinology
- Surgical Gastroenterology
- Surgical Oncology
- Urology
- Vascular Surgery

RCH / 023

www.royalcarehospital.in

If Undelivered please return to

Book - Post

ROYAL CARE
making life better

ROYAL CARE SUPER SPECIALITY HOSPITAL LTD.
1/520, L&T Road, Neelambur, Coimbatore - 641 062.
Tel : 0422 - 222 7000

CITY UNIT :
372 F, Dr. Nanjappa Road, Coimbatore - 641 018
Ph : 0422 - 400 1000, 22 33 000

VELLALORE CENTRE :
RCSSH and CNRT 20, KIN Medical Centre,
Podanur Road, Coimbatore - 641 111.