

# DocConnect

Professional Writings by Medical Practitioners, Max Super Speciality Hospital, Saket

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## Surgery saves baby born with defective food pipe



**Dr. Anurag Krishna**

Department of Paediatric Surgery  
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Hooked to an oxygen cylinder, this 20 days old baby braved a 19 hour train journey from Madhubani, Bihar to Delhi. Apoorv was born with a rare congenital defect wherein his oesophagus (food pipe) and trachea (wind pipe) were connected. Due to this, Apoorv would nearly choke every time he was fed.

With doctors in Patna unable to diagnose the problem, Apoorv's parents decided to get their first born treated in Delhi. "As he was refusing feeds, his condition deteriorated. Doctors in Patna couldn't diagnose the problem. By the time we decided to bring him to Delhi, his condition had deteriorated. He was put on oxygen support and intravenous glucose," Maithili, Apoorv's mother, said.



Doctors at Max Healthcare, where he underwent a surgery, say that Apoorv was suffering from a range of congenital disorder. "This is uncommon congenital defect usually seen in one in 3,000-4,000 newborns. Normally, such patients are diagnosed within the first 12 days of life and need emergency surgery. But, in Apoorv's case, it went undetected for almost 20 days," Dr. Anurag Krishna, Director, Paediatric Surgery, said.

The disorder is called Tracheo-Oesophageal Fistula. In this, Dr. Krishna said, "there is abnormal connection between the foodpipe and windpipe". "In Apoorv's case, the upper part of the foodpipe had a

blind ending while the lower part was connected to the respiratory tract. Since the food pipe was not in continuity, any feed that the baby was taking in was not going to the stomach," said Dr. Krishna.

In a 90-minute long surgery, doctors disconnected the oesophagus and tracheo at both ends. Doctors say that babies usually don't survive long if the problems is not diagnosed within days of birth. Apoorv, doctor say, is lucky as he not only survived the medical condition for 20 days but didn't develop any infection." The baby has started taking oral feeds. When he was brought to the hospital he weighed 2.9kg, but his health is improving now", Dr. Krishna said.

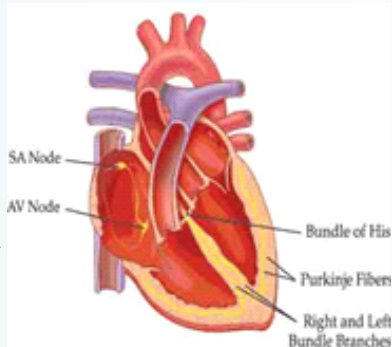
## HIS-Bundle pacing - Great concept, difficult in practice

A traditional pacemaker enables a human being with a lifespan of 15 years (battery life). It keeps the "heart beat" on and allows the cardiac patient to resumes a normal life. However, the picture painted isn't as rosy as it seems. In reality, a traditional pacemaker includes a high risk of heart failure and has resulted in fatality in 10-15% of cases worldwide.

Although it saves life and keeps the heart beating, ventricles contract in exactly opposite way compared to normal heart. This reverse sequence of ventricular activation may cause heart failure in the patient in the long run heart's own electrical

system to work in a natural sequence. A new technique to introduce a safer and more reliable technology and to address this issue has been performed "live" and within a short span of 60 minutes each at Max Super Speciality Hospital, Saket by Dr. Vanita Arora, Associate Director & Head, Cardiac Electrophysiology Lab & Arrhythmia Services and her team not only on one but on two patients.

70 years old female was leading a peaceful life with her family at Delhi when suddenly, 6-8 months back, she fainted unexpectedly. With time her fainting spells began increasing in number and she eventually fractured her hip bone one day. Ignorant about the cause of fainting causing continuous concussions, the relatives decided to address her fracture first and consulted an orthopaedic surgeon. However, when she fainted again and received a fracture for the second time, this time it was her clavicle bone, her family began noticing that there was more to her condition than what met the eye. On 25th Nov 2014, she fainted again for the umpteenth time and this was a severe attack during which she began gasping desperately for air. Stunned to see her condition, the family immediately rushed her to the emergency at Max Super Speciality Hospital, Saket. In emergency, it was found that her pulse had dropped drastically to a miniscule 25 beats/minute (a normal heart beats at 75-90



**Dr. Vanita Arora**

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beats/minute). A temporary pacemaker was immediately implanted in her to stabilize her condition. When Dr. Vanita Arora checked her condition, she discovered that her electrical system of the heart was blocked and amongst the entire electrical wiring of heart it was the HIS Bundle, which had completely fused. The patient was scheduled for surgery where Dr. Arora successfully implanted the latest technology specially designed 3830 Select lead from Medtronic at patient's 'HIS Bundle'.



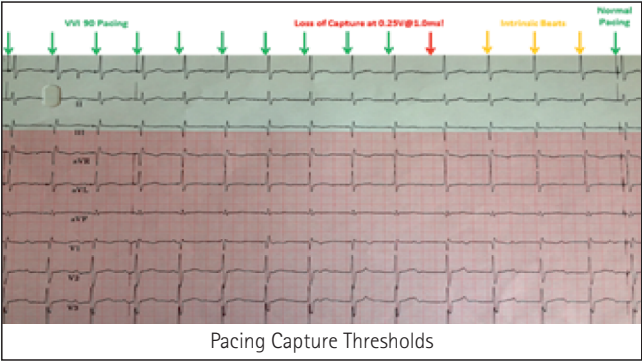
**Intrinsic Rhythm**  
Patient has symptomatic intermittent complete heart block & undergoes DDDR pacemaker implantation with the aim of pacing the His bundle with a 3830 Select Secure lead



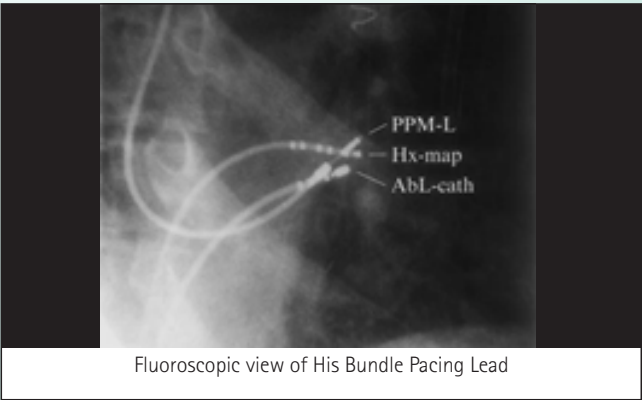
**His Potential**  
Using the 3830 to map the His, a pure Hisian lead location was found. After screwing in the lead the following EGM was obtained: HV~70ms



Post 48 hours of the procedure the patient was released from the hospital completely recovered. Her heartbeat was restored back to 90 beats/minute post the surgery. Healthy and back to normal now, she can't believe the change in her energy and fitness level with the newly advanced pacemaker.

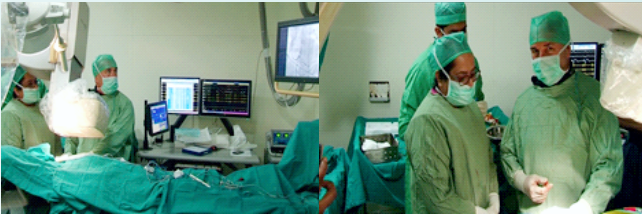


In the second case, 60 years old male Kailashpati suffered a cardiac arrest (he had fainting spells) couple of years back. A conventional lead pacemaker was implanted in right lower chamber site and he was released with the promise of a revived and comfortable life. However, from past 4 weeks he started fainting repeatedly. What he didn't realize was that like a flickering light bulb in the process of getting fused, his heart had begun to increasingly skip beats. With the increase in the number of faint spells that Kailashpati began suffering from, his family's worry began increasing. On the night of 26th Nov 2014, he fell unconscious for the 10th time that week and he was immediately rushed to Max Super Speciality Hospital where he met Dr. Vanita Arora. When she checked his pacemaker, she realized that it was barely keeping his heart pacing and if not replaced immediately, his condition could prove to be fatal. In simple words, Dr. Arora explained that the patient's original electrical wiring of heart had fused from HIS Bundle and his inverter backup wiring also flickered, hence he required a new stronger power generator for supporting HIS Bundle. Without wasting a second's breath, Dr. Arora rushed him for surgery where a new pacemaker was skillfully placed in the correct location, i.e, 'HIS bundle' which is the control station of a human heart's electrical system. As the main power station was now supplying the pacing, the patient's heart roared back to normal and



he was discharged on 29th Nov 2014, hale and hearty again without a trace of his suffering in the past days reflecting on him.

Electrical mapping using sophisticated electrophysiological mapping system was done in both cases to determine that the wire tip is placed exactly at His Bundle. The wire is screwed at this spot and connected to the pacemaker. The ECG of the patient post procedure confirmed physiological contraction of ventricles while pacing. This will benefit the patient in the long run preventing adverse effects of heart failure that can happen in conventional pacing.



The two aforementioned case studies were performed "live" at Max Super Speciality Hospital, Saket where Dr. Vanita Arora and her team invited Dr. Farnesco Zanon, Director Cardiac Electrophysiology & Pacing, Rovigo General Hospital, Padova, Italy, to explain the new technology, its workings, advantages, patient benefits etc. to the healthcare fraternity in a workshop conducted for the first time in India. Young budding cardiologist and the colleagues already implanting pacemakers enthusiastically became the part of this workshop to learn this new technique during the live procedures and listen to the address by Dr. Zanonso the newer generation of healthcare experts can be enlightened about the medical breakthrough that will increase a patient's lifespan by 20 years and more with far greater reliability and without causing heart failure.

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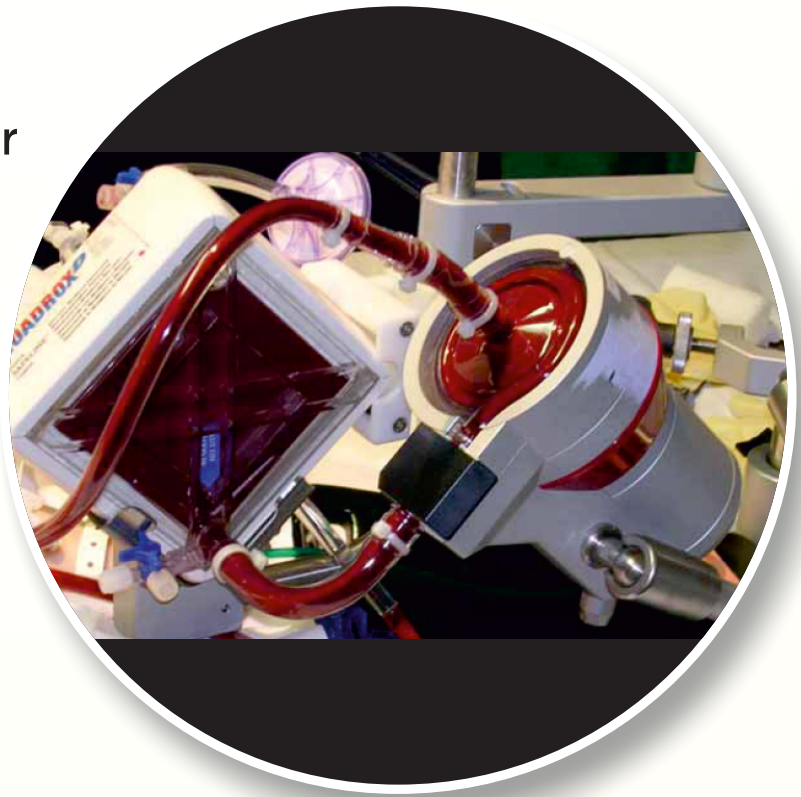
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# Congratulations

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# Impact of regular patient follow up on weight loss and nutrient profile post bariatric surgery



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## BACKGROUND

Bariatric Surgery, a highly successful treatment for obesity, requires adherence to special dietary recommendations to ensure the achievement of weight loss goals and weight maintenance. Nutrition counseling is important for patients undergoing gastric bypass surgery. All patients with bariatric gastric procedures are at risk for nutrient deficiencies, and regular compliance to diet and supplement help in maintaining nutrient profile.

## METHOD

A prospective study examined patients (N=60) who underwent Bariatric Surgery from January 2013 to December 2013. The number of follow up visits of each patient with the nutritionists was compared to the weight loss and nutrient profile. Spearman's correlation was used to analyze data and also draw descriptive statistics of the patients. For analyzing the data SPSS 16.0 was used.

## RESULTS

A moderate correlation was found between the number of post-operative nutrition visits and the percent change in post surgery BMI at 1 years (Spearman's  $P = 0.616$ ;  $P \leq 0.01$ ). Nutrient profile Vitamin B 12 improved substantially post operatively as compared to pre-operatives but no change albumin levels were seen.

## CONCLUSION

Patients with more nutrition visits following bariatric surgery experienced greater weight loss and also maintained a better nutrient profile as compared to pre-operative stage that means patient follow up plays a significant role in the amount of weight loss after bariatric surgery.

## INTRODUCTION

Obesity, traditionally defined as a body mass index above  $30 \text{ kg/m}^2$ , increases the risk of death from any cause. Obese patients have a history of repeated failures after traditional methods of weight loss, such as dieting, exercise, and medications. After bariatric surgery, dietary counseling aimed at modifying eating behavior is crucial for obtaining successful results. Restrictive operations are effective treatment for morbid obesity. Bariatric surgery is currently the most effective method of sustainable weight loss among morbidly obese patients<sup>2</sup>. The types of bariatric surgeries can be divided into three categories: restrictive procedures, malabsorptive procedures, and combination (restrictive and malabsorption) procedures. For many patients, the benefits of weight loss, such as decreased blood glucose, lipids, and blood pressure and increased mobility, outweigh the risks of surgical complications. Most diet-related surgical complications can be prevented by adhering to strict eating behaviour guidelines and supplement prescriptions. Eating behaviour guidelines include

restricting portion sizes, chewing foods slowly and completely, eating and drinking separately, and avoiding foods that are poorly tolerated<sup>2</sup>. Supplement prescriptions involve regular intake of multivitamin with minerals<sup>1</sup>. The most common nutrient deficiencies are of iron, vitamin D and vitamin B12. Frequent monitoring of nutrition status for all patients can aid in preventing severe clinical deficiencies. Nutritional deficiencies can occur after bariatric surgery, perhaps due to poor compliance with supplementation, continued inadequate intake and/or ongoing malabsorption<sup>3</sup>. Nutritional monitoring and supplementation among bariatric programmes has been widely variable and few prospective studies of outcomes exist. Post-operative follow-up after bariatric surgery is important. The role of nutritionist is to perform dietary assessments, to evaluate for nutritional deficiencies, and to provide counseling to help patients meet post-surgery weight loss goals<sup>5</sup>. Dieticians are part of the multidisciplinary bariatric team. Expert guidance and visits to dieticians are part of the surgical process.

## STUDY OBJECTIVE

### PRIMARY OBJECTIVE

The aim of this study was to explore the relationship between the number of nutrition visits a patient attended and change in Body Mass Index (BMI)/ percentage weight loss after Bariatric surgery

### SECONDARY OBJECTIVE

To compare the nutrient profile of post operative patients on regular follow up with pre-operative levels.

### INCLUSION CRITERIA

Patients qualifying the following inclusion criteria will be included in the study.

- >18 years of age, either gender
- BMI > 37.5
- Indian population

### EXCLUSION CRITERIA

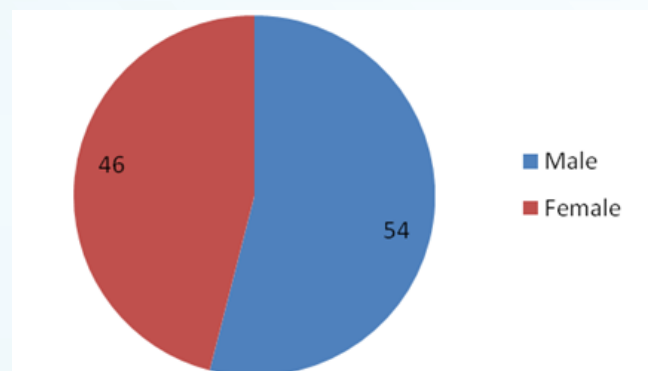
- International patients
- Out-station patients unable to come for follow up visits

## METHODS

Prospective data was collected of a total of 60 consecutive patients undergoing bariatric surgery at Max Super Speciality Hospital, Saket, New Delhi, between January 2013 to December 2013. Date of surgery, age, sex, height, BMI, weight before surgery was recorded. Patient's weight (in kg) was recorded during each clinical visit. After surgery patients were scheduled for visits at 2 week, 1 month, 3 month, 6 month and 1 year intervals. Spearman's correlation was used to determine the association between number of visits and BMI change. Patients get their nutrient profile pre-operative and 6 months/ 1 year/

2years post operative as protocol. Analyzing the nutrient profile it was seen that Vitamin B 12 levels improved significantly post-operatively. 18.3% patients were below deficiency level (<150ug/dl), which reduced to 3.3% one year post-operative. And 73.3% had normal vitamin B 12 levels (150-700ug/dl). This can be result of regular intake of supplements post surgery, which the patient is educated about during each visit. Pre-operative albumin level of 13.3% was below normal (<3.5gm/dl) which increased to 15% post-operatively. The number of patients with normal range (albumin 3.5-4.5gm/dl) also dropped (80% % pre-operative to 73.3% post-operative)

Number of patients 60  
Age (years) group 19 – 61  
Mean Age (years) 46  
Male 54%  
Female 46%



	No. of patients	Mean ± SD
Percent Change in Weight loss	59	-29.1292 ± 7.8259
No. of visits	59	4.56 ± 1.6

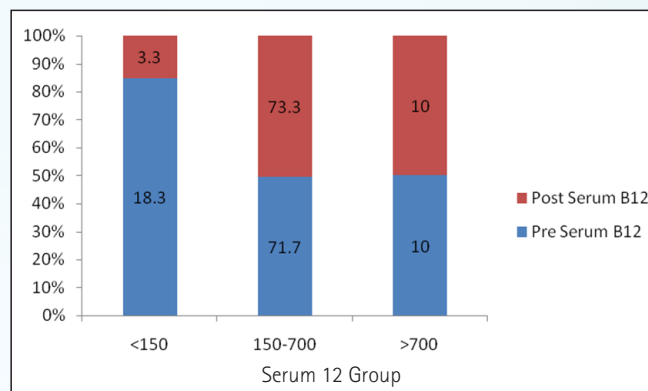
\*One patient out of the total 60 did not come for even a single follow-up.

## DISCUSSION

In this study, patients attending more nutrition visits following surgery experienced greater declines in BMI. These nutrition visit - specific results are consistent with those of Compher et al, who examined the relationship between clinical visits and post-gastric bypass weight loss and found that the odds of weight loss increased 2.8 fold with each clinical visit<sup>3</sup>. Lier et al found that the regular attendance to post-operative nutrition counseling visits were associated with weight loss 1 year after gastric bypass surgery<sup>8</sup>.

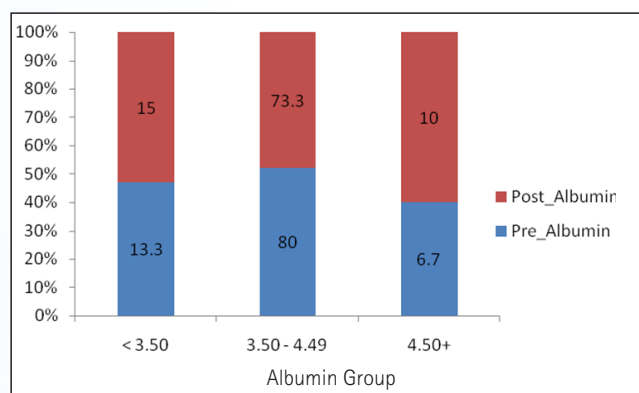
A moderate correlation was found between the number of postoperative nutrition visits and the percent change in post surgery BMI reflecting the importance of regular nutrition visits and counseling in post bariatric patients and should be an integral part of the treatment modality for post-operative patients.

	No. of patients (%)	
Vitamin B12 Group	Pre Serum Vitamin B12	Post Serum Vitamin B12
<150	11 (18.3)	2 (3.3)
150-700	43 (71.7)	44 (73.3)
>700	6 (10)	6 (10)
Total	60 (100)	52 (86.7)



	No. of patients (%)	
Albumin group	Pre Albumin	Post Albumin
<3.5	8 (13.3)	9 (15.0)
3.5-4.49	48 (80.0)	44 (73.3)
>4.5	4 (6.7)	6 (10.0)
Total	60 (100)	59 (98.3)

\* One patient who did not come for follow up, his albumin levels not taken.



Substantial improvement in Vitamin B12 levels seen in post-operative patients when compared to pre-operatives, suggesting that frequent interactions with nutritionist helps in maintaining nutrient profile and also suggestive that regular intake of supplements help to improve vitamin B 12 levels.

On the other hand, no substantial change was seen in albumin levels post-operative as compared to pre surgery levels, in fact levels were lower as compared to pre operative state. The reason can be multiple; reduce intake of the quantity Et quality of food, vegetarian population, reduced absorption of protein, suggesting that patients should be advised protein supplements post operative.

## CONCLUSION

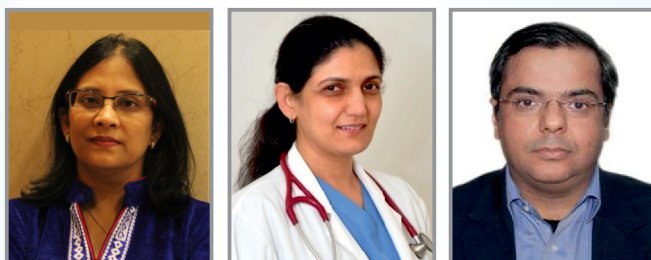
Patient follow up plays a significant role in the amount of weight loss after bariatric surgery.

Patients with more nutrition visits following bariatric surgery experienced greater declines in BMI. This finding highlights the importance of the dietitian in the bariatric surgery team. Patient follow-up plays a significant role in the amount of weight lost after surgery. Patient motivation and surgeon commitment for long-term follow-up is critical for successful weight loss after surgery. Adherence to scheduled visits and compliance to diet and supplement intake predicts success of bariatric surgery and proper nutrient profile, at least during the first year.

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# Role of CT aortogram in post operative evaluation of thoracic aorta



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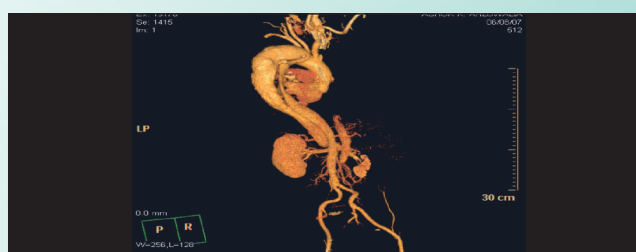
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## INTRODUCTION

Advances in Computed Tomography (CT) scanners and Electrocardiographic Gating Techniques have resulted in superior image quality of the ascending aorta and increased the use of CT angiography for evaluating the postoperative ascending aorta. Several abnormalities of the ascending aorta and aortic arch often require surgery, and various open techniques may be used to reconstruct the aorta. Normal postoperative imaging findings, such as hyperattenuating felt pledgets, prosthetic conduits, and reanastomosis sites, may mimic pathologic processes. Postoperative complications seen at CT angiography that require further intervention include pseudoaneurysms, anastomotic stenoses, dissections, and aneurysms. Radiologists must be familiar with these procedures and their imaging features to identify normal postoperative appearances and complications<sup>1</sup>.

A 60 years old male old case of aortic dissection in 2007 for which he underwent stent grafting first in arch of aorta and then followed by in descending thoracic aorta along with stenting in b/l renal arteries and carotid – carotid grafting in 2008.

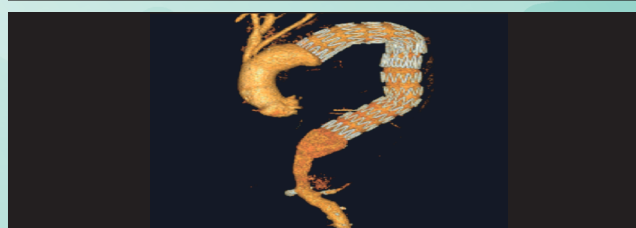
Aortogram was done in 2007 in the radiology department which showed stent in arch and upper descending aorta. Follow-up CT angiography in 2008 showed aortic stent grafting extended up to diaphragmatic level and bilateral renal arteries stenting with patent lumen. Carotid – carotid grafting was seen and showed normal opacification. There was a larger peri-graft thrombus in thoracic region. The dissection was noted in descending aorta infra-diaphragmatic region up to renal level showing false lumen partially filled with thrombus.



Volume rendering ct image showing dissection extending from arch to descending aorta upto renal level (preoperative scan 2007)



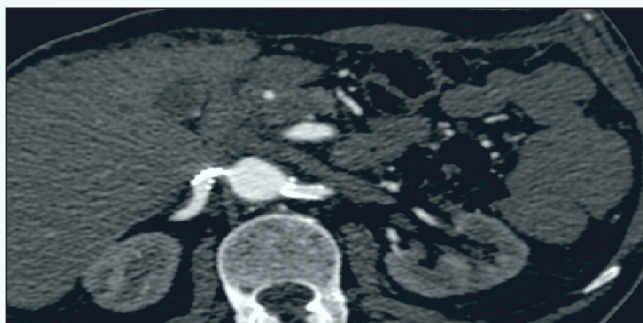
Stent grafting in arch and proximal descending thoracic aorta and Carotid-carotid grafting (post operative scan 2007)



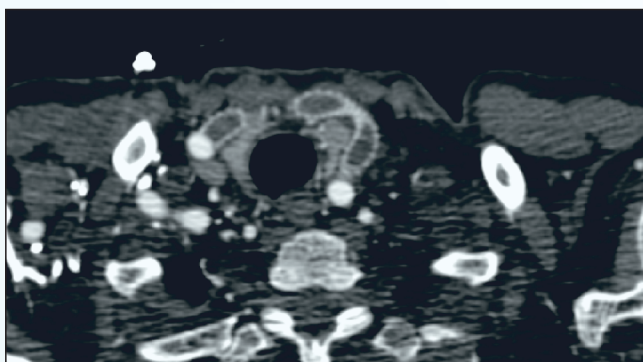
Volume rendering images—grafted aorta (2008)



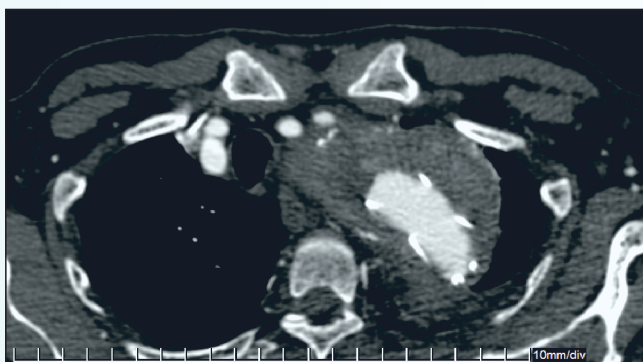
Now patient came in March 2015 with complaints of left shoulder pain. CT aortogram was done which showed almost same findings except blockage of carotid-carotid grafting. The perigraft thrombus which was mildly increased in size displacing the pulmonary vessels. Coeliac axis was taking origin from true lumen and SMA from false lumen.



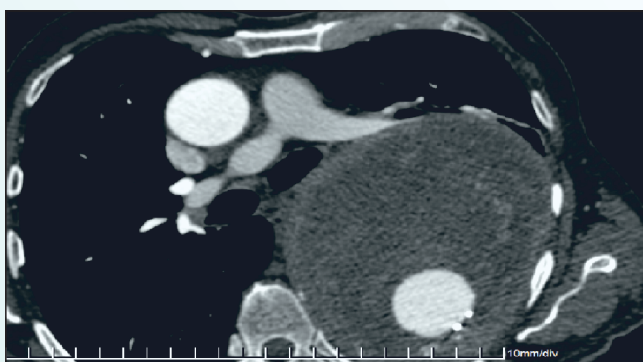
Stented renal arteries



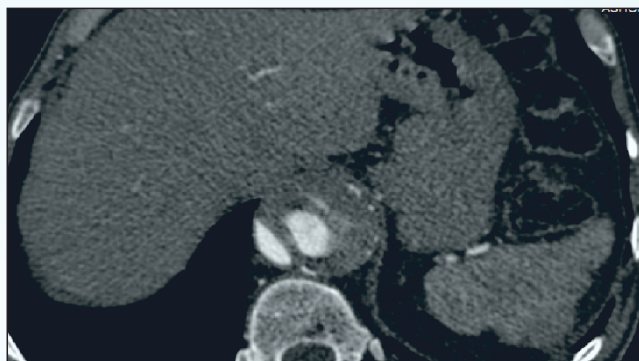
Blocked carotid-carotid graft (2015)



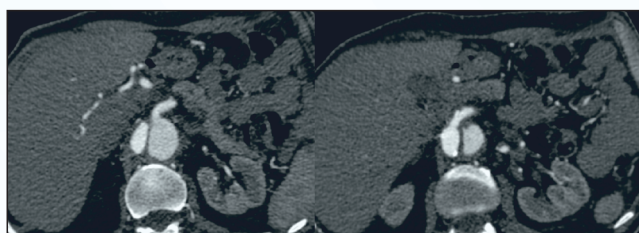
Large perigraft thrombus



Thrombus is displacing the pulmonary artery and vein



Infradiaphragmatic and suprarenal dissection



Origin of sma from false and coeliac axis from true lumen

## DISCUSSION

Aortic interposition grafting is widely accepted in the management of thoracic aortic aneurysm and dissection. Reported complications include anastomotic dehiscence, endoleak and graft infection<sup>12</sup>. Follow-up CT scans are generally obtained on a routine basis to evaluate for potential complications that may or may not be clinically evident. Endo leaks are one of the unique complications to endovascular repair of aneurysms and can lead to aneurysm expansion and rupture if not repaired<sup>4</sup>. At our institution, these routine scans are obtained approximately 3 and 12 months after surgery and annually after that. The most frequent type of complication was abnormal accumulation of low-attenuation material around the graft, and the next most frequent was collections of contrast material outside the graft.

## CONCLUSION

Thoracic aortic graft complications are commonly detected at CT. It is essential, however, to be aware of the spectrum of CT findings of these complications so that life-threatening conditions can be diagnosed when they do occur. Apparent complications on CT are of little or no clinical significance, and knowledge of the surgical details and the patient's clinical status is important for accurate interpretation of imaging findings.

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# Pancreatic Neuroendocrine Tumour (p-NET) in Von Hippel-Lindau disease (VHL)



**Dr. Nitin Vashistha, Dr. Dinesh Singhal**

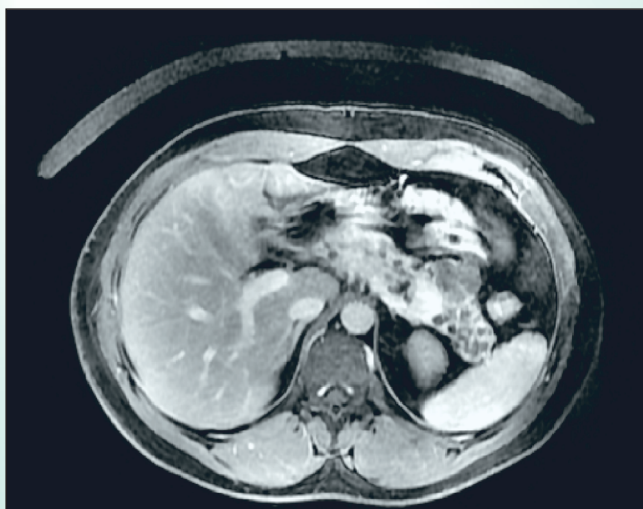
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## PRESENTATION

A 28 years young male resident of Oman, a diagnosed case of Von Hippel Lindau (VHL) disease presented with symptoms of hypoglycemia. On USG abdomen at Oman he was found to have left renal cystic lesion, pancreatic multiple cystic lesions and a mass lesion in the tail of pancreas probably Neuroendocrine Tumour (NET). He also had a past history of craniotomy for multiple cerebellar hemangioblastoma in December 2009 & 2011.

On examination he was well built and there was no icterus or pallor. Abdominal and neurological examination also did not reveal abnormality. His hemogram, liver and kidney function tests were within normal range whereas his glycosylated hemoglobin (3.8%) and random blood sugar (37mg/dl) were low associated with high serum insulin (37.12 uIU/ml) and increased serum C peptide levels (6.68ng/ml) findings consistent with insulinoma.

For tumour localization, contrast enhanced MRI abdomen revealed multiple cystic lesions throughout pancreas and a solid heterogeneous lesion in pancreatic tail approximately 2.8 x 3.1 x 2.6 cm in size hyper enhancing on contrast images likely to represent NET. Multifocal lesions in both kidneys - three renal cysts on left (one of them was Bosniak 3) and one on right (Figure1). A distal pancreatectomy and partial nephrectomy was planned.



**FIGURE 1.** Multiple cystic lesion throughout pancreas and a solid heterogeneous lesion in pancreatic tail

Intraoperative localization of the tumour in tail of pancreas was difficult because of the presence of multiple cystic lesions. With Intraoperative Ultrasound (IOUS) tumour and line of resection was identified and a standard spleen preserving distal pancreatectomy was completed. Frozen section confirmed the presence of NET in the specimen. Intraoperative blood sugar levels also improved after the excision of the insulinoma. Subsequently partial nephrectomy was performed for left renal upper pole tumour (Bosniak 3).

In the post operative period patient developed pancreatic fistula which was managed conservatively with percutaneous drain and pancreatic stent placement.

## DISCUSSION

Pancreatic neuroendocrine tumours are rare in von Hippel-Lindau disease, most often asymptomatic, nonfunctioning, non secreting, and benign<sup>1</sup>.

Insulinomas are NET located in pancreas that secretes insulin and causes symptoms due to hypoglycemia. Symptoms are mainly due to effects of hypoglycemia on central nervous system and adrenergic stimulation secondary to hypoglycemia.

Insulinoma is a rare tumour with estimated incidence of 1-3 million population / year. In 10% of cases these may be multiple and only < 10% are malignant<sup>2</sup>.

The original whipple's triad to suspect insulinoma is still fundamentally sound and consists of:

- 1) Symptoms of hypoglycemia
- 2) Plasma glucose level < 40 mg/dl, and
- 3) Relief of symptoms with administration of glucose

Tumour localisation pre-operatively is required in all patients because accurate localisation of insulinoma can result in complete surgical resection and cure in majority of cases. Insulinoma's are almost always localised to the pancreas and are small in size making localisation with imaging difficult. Different imaging modalities available USG, CT, MRI are positive in only 10-40 % of cases. Somatostatin Receptor Scintigraphy (SRS) is positive in up to 50% cases. Endoscopic US are positive in 70-95% of cases depending on the operator. IOUS is essential for localising the tumour at surgery and determining correct surgical resection margin. FDG PET imaging is disappointing for insulinomas localisation.



More than 95% of insulinomas are surgically cured. The standard surgical treatment for insulinoma includes exploration of the pancreas both by palpation and IOUS. Enucleation or partial pancreatic resection is needed depending on the distance of tumour from pancreatic duct<sup>2</sup>.

If insulinoma is not localised preoperatively then surgical exploration is still indicated and IOUS, intraoperative insulin sampling and frozen section should be done. If insulinoma is not localised intraoperatively then blind distal resection is not indicated. In patients with suspicion of malignant insulinoma or recurrence radical surgery with loco regional lymph node clearance should be performed.

## CONCLUSION

In such setting surgery should be attempted only at centres where facility for IOUS and frozen section are easily available because accurate localisation of insulinoma can result in complete surgical resection and cure in majority of cases.

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# Surgical correction of severe rheumatoid forefoot deformities



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A 55 years old lady, known case of Rheumatoid Arthritis, presented with severe involvement of bilateral forefeet. She demonstrated the full blown rheumatoid forefoot deformities (Pictures 1 and 2): severe hallux valgus with arthritic subluxated first Metatarsophalangeal joint having a rotational element, subluxated/ dislocated Metatarsophalangeal joints of 2nd to 5th toes leading to clawing, crowding and overriding of toes and painful plantar calluses on the area of dislocated metatarsal heads. She was on disease modifying anti rheumatoid medications for many years and the disease in other joints was relatively well controlled. She had been living with the foot problems for a number of years for a lack of proper guidance. At presentation, she had pain which restricted her walking and she found it impossible to wear normal footwear.



**Picture 1.** Clinical picture showing the deformities in both feet



**Picture 2.**

Close up view of the right foot, severe forefoot rheumatoid deformities

Standing AP and Lateral radiographs of both her Feet confirmed the deformities seen clinically. Pre-operative x-ray of the right foot in picture 3 shows severe Hallux Valgus, arthritis of the first MTP joint with subluxation and complete dislocation of the 2nd and 3rd MTP joints.



**Picture 3.** Anteroposterior x ray of the right foot showing the full spectrum of rheumatoid forefoot deformities



She underwent a complete rheumatoid forefoot reconstruction on the right foot in first stage which included first MTP arthrodesis and stabilization with a valgus-dorsiflexion precontoured anatomic MTP fusion plate and Keller arthroplasty including dorsal capsuloligamentous release and rerouting of long toe extensors of 2nd to 5th MTP joints.

Post surgery the right foot deformities were fully corrected (Picture 4). She was kept in a non weight bearing below knee splint for 3weeks followed by gradually increasing weight bearing in a forefoot weight relieving orthosis. The wounds healed uneventfully, arthrodesis united at 6 weeks and she improved her function significantly. She can now wear any type of shoe and walk without pain in the right foot. She is currently planning for surgery on the left foot.



**Picture 4.** Post operative picture showing the corrected right foot. She is now 1 year post op and planning for surgery on left foot

## DISCUSSION

At diagnosis, almost 20% of Rheumatoid Arthritis (RA) patients have foot involvement, increasing to 90% as disease duration increases. Foot involvement in RA can lead to joint instability, difficulty in walking and limitation in functional ability that restricts activities of daily living.

A number of studies have documented clinically important deterioration of foot function in RA patients. This can be due to a variety of issues in the rheumatoid foot: synovitis/ arthritis of small joints, structural forefoot deformities such as hallux valgus, Metatarsophalangeal joint subluxations, claw/ hammer/ mallet toes, hind foot deformities such as Calcaneus varus or valgus, mid foot problems such as pes planus or pes cavus. Other issues are the corns and calluses, rheumatoid nodules and rheumatoid foot ulcers. These problems, in isolation or combination, can cause a significant functional limitation in rheumatoid patients. While some of these problems can be controlled by appropriate medication, exercises and orthotics many of these patients need surgical intervention to restore/ improve function. A full blown rheumatoid forefoot deformity consists of subluxation of all MTP joints leading to hallux valgus or varus, claw/ hammer toes to the extent that toes can override each other, making ambulation difficult. These patients benefit immensely with corrective surgery as illustrated in this case.

# WELCOME TO THE TEAM



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### **EDUCATION**

- MBBS and MS Orthopaedics: MGIMS, Sevagram, Wardha, Nagpur University, India
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- Associate Director, Department of Orthopaedics, Medanta – The Medicity, Gurgaon
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### **MEMBERSHIPS**

- President Elect, Indian Foot and Ankle Society
- International Member, American Orthopaedic Foot and Ankle Society (AOFAS)
- International Travelling Fellow, AOFAS for the year 2014
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