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HealthNews DIGEST

Aster HOSPITALS & CLINICS

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Dr. Sherbaz Bichu

CEO & Specialist Anaesthetist
Aster Hospitals & Clinics, UAE

It is my absolute pleasure to introduce our latest edition of HealthNews Digest. This newsletter is designed to provide valuable insights into the latest clinical practices that have the potential to make significant impact on patient care. It encompasses some of the aspects of the ardent work done by our doctors at Aster Hospitals and Clinics and I hope that with such wider cases covered across specialities and spread, it will help clinical professionals in better decision making. At Aster, we strive to achieve quality patient care, keeping in mind patient safety through establishing robust clinical processes and staff empowerment.

I would like to take this opportunity to thank our team of experts for their dedication and hard work in preparing this informative clinical newsletter. I invite all the clinicians to peruse its contents and also contribute in our upcoming editions of HealthNews Digest.

Dr. Ramanathan V

Medical Director
Aster Hospitals & Clinics, UAE

As the field of medicine evolves, it is essential that we keep up with the latest practices and advancements in clinical practice. It is my pleasure to introduce the 8th edition of HealthNews Digest, which aims to provide valuable insight and information for healthcare professionals. As a clinician myself, I understand the importance of evidence-based case studies and the need to critically evaluate the quality of the sources we use to inform the best practices at Aster. That is why I commend the doctors who have contributed to this newsletter for their rigorous approach in detailing out each of their cases to the minutest of attributes and providing accurate results of their findings.

I am confident that the insights offered in this clinical newsletter will prove invaluable to healthcare professionals looking to enhance their knowledge and improve patient outcomes. I encourage you to read on with an open mind, and to engage in ongoing discussions about the best practices in our ever evolving healthcare system.

Dr. Sudheer Salavudeen
General And Laparoscopic Surgery (Specialist)

Dr. Irfan Ali Shera
Gastroenterology And Hepatology (Specialist)

Achalasia Cardia

Achalasia Cardia treated with Laparoscopic Heller Myotomy and Dor Fundoplication successfully at Aster Hospital, Al Qusais

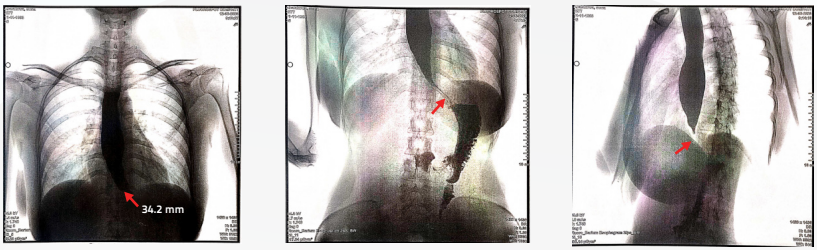
PRESENTATION

- 38 year old female
- History of Dysphagia to liquids since last 7 years. The exact cause remained unknown for 5 years and she was diagnosed with Achalasia Cardia 2 years back. When the medical treatment at multiple centres and esophageal dilatation was not giving the results, the patient approached Aster for further management
- Esophageal Manometry and barium meal study confirmed the presence of Achalasia Cardia
- No family history of medical illness
- Admitted with:
  - Dysphagia to liquids

FINDINGS

During Examination:

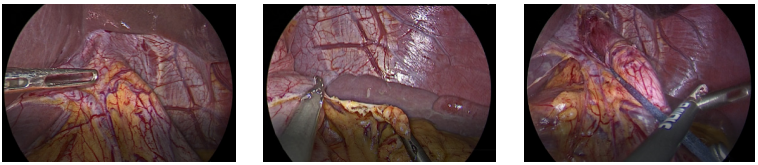
- No pallor and jaundice
- No clubbing lymphadenopathy, edema
- Abdomen - soft lax, moving well with respiration
- No palpable mass
- Unable to swallow when asked to drink liquid



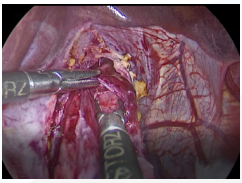
Barium Meal Study showing Rat Tail Sign confirming Achalasia Cardia

DURING PROCEDURE

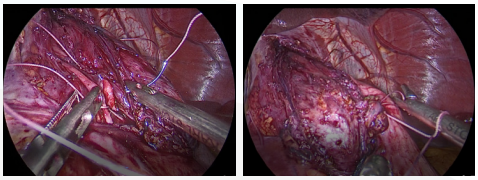
- The patient underwent Laparoscopic Heller Myotomy with Dor Fundoplication.
- After obtaining an informed consent from the patient, the parts were painted and draped under aseptic conditions.
- The patient was placed in supine position and ports were inserted; 10 mm umbilical port for camera, 5 mm epigastric port for Nathanson Retractor, 3 other working ports.
- The fundus of the stomach was divided from the attachment towards the greater curvature.
- The esophagus was separated from the right and left crus, and using an umbilical tape, the esophagus was retracted.
- 7 cm dissection was done on the esophagus at first longitudinal muscles from the GE junction followed by circular muscle, the dissection was carried out 2 cm down to stomach from the GE junction.
- Stomach was brought behind the esophagus and plicated on to the right dissected part of esophagus, and the left side was again sutured to other side of the stomach (Dor Fundoplication).
- Hemostasis attained.
- Ryles tube were pushed into the stomach, ports and retractor were removed under vision and site
- was closed.



Esophageal and Fundus Mobilization



Dissection of Longitudinal and Circular Muscles of Esophagus



Dor Fundoplication

POST PROCEDURE

The patient tolerated the procedure well. She was stable in condition and on post - operative day 2, the patient was initiated with liquid diet. She was able to swallow liquid without any difficulty and was discharged on the same day.

DISCUSSION

Achalasia is a primary esophageal motility disease that usually presents with progressive dysphagia, chest pain, regurgitation, and weight loss. Its etiology is not fully understood, and its incidence is approximately 1 to 3 cases in 100,000 persons per year.

Although achalasia can be suspected using clinical, radiographic, and endoscopic information, a definite diagnosis can only be made using esophageal manometry, which shows the absence of esophageal motility and, in most cases, inappropriate lower esophageal sphincter (LES) relaxation. High-resolution manometry can be used to further study esophageal motility in patients with achalasia by categorizing patients into three subtypes that can predict patient response to endoscopic or surgical treatment.

Treatment for patients with achalasia focuses on symptom improvement. Endoscopic and surgical approaches for treating achalasia seek to overcome esophageal outflow obstruction while preventing the development of gastroesophageal reflux disease (GERD) and its associated complications. This case focuses on the surgical treatment of achalasia with particular emphasis on Laparoscopic Heller Myotomy.

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Dr Parth H Joshi
Ophthalmology (Specialist)

Dr Vikram Mohindra
Ophthalmology (Specialist)

Squint Surgery

An interesting case of Exotropia in Left Eye treated successfully by Squint Surgery at Aster Hospital, Mankhool

PRESENTATION

- 33 year old female
- No medical history
- No family history of medical illness
- Admitted for:
  - Correction of gradually progressive outward deviation with poor vision in Left Eye

FINDINGS

During Examination:

- Left eye Exotropia with Amblyopia setting in
- Rest within normal limits
- Prism Bar Test:
  - Alternating Test: >45 Prism Diopters
  - Krimsky Test: >45 Prism Diopters

Pre-operative picture showing Large Angle Exotropia

DURING PROCEDURE

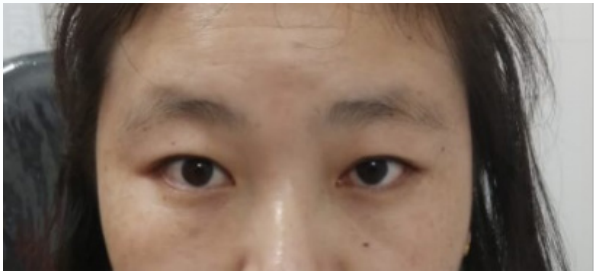
The patient underwent Left Eye Squint Surgery under Local Anesthesia:

- Left eye was marked.

- Injection Lignocaine 2% infiltrated in peribulbar area.
- Stay sutures applied at 12 and 6 o'clock position.
- Conjunctival peritomy done on nasal and temporal conjunctiva.
- Lateral Rectus muscle isolated and recessed by 8 mm.
- Medial Rectus muscle isolated and resected by 6 mm.
- Muscles sutured with 6-0 Vicryl suture.
- Conjunctiva closed with 8-0 Vicryl suture.
- Mild over-correction was intended in view of the possibility of recurrence due to amblyopia.
- Eye pad applied after antibiotic ointment application.

POST PROCEDURE

The patient tolerated the procedure well. She was in a stable condition at the time of discharge.



Post-operative picture at 6 Weeks showing Squint Correction with good cosmesis despite intended mild over-correction

DISCUSSION

Exotropia is mostly of divergence excess type. When Convergence exercises fail to maintain the fusion, surgery remains the best choice. Mono-ocular recession-resection was performed in this patient in view of operating only the non-dominant eye. Delay in undergoing surgery can lead to Amblyopia, loss of binocularity or anomalous retinal correspondence. All these benefits along with improved cosmesis was very gratifying for the patient.

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5. Yanoff & Duker Ophthalmology

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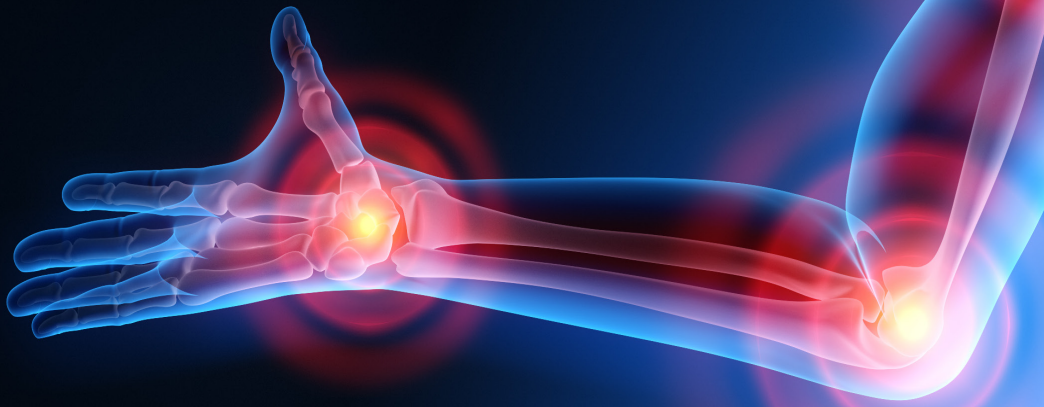

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Overcoming Diagnostic Hurdles of Diabetic Peripheral Neuropathy (DPN)

Diagnostic Challenges Associated with Diabetic Peripheral Neuropathy

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INTRODUCTION

Diabetic peripheral neuropathy (DPN) is a common complication of diabetes mellitus that affects approximately half of the patients with diabetes (1). The most common causes of peripheral neuropathy are type 2 diabetes and prediabetes. Neuropathy occurs in approximately half of all patients with diabetes, of which 30–40% develop neuropathic pain, such that approximately one in five diabetic patients develop painful neuropathy (2).

Although DN usually causes injury to both small and large nerve fibres, a pure or isolated SFN (Small Fibre Neuropathy) also exists. SFN represents a separate entity characterized by specific damage to unmyelinated C and thinly myelinated Ad type fibres (3).

It commonly causes symmetrical paraesthesia, loss of sensation, and hyperalgesia (4). Patients with DPN typically have numbness, tingling, pain, and/or weakness that begins in the feet and spreads proximally in a stocking and glove distribution (5).

Diabetes gives rise to different types of nerve damage and clinical presentations, which includes distal symmetric polyneuropathy, autonomic neuropathy, radiculoplexopathy, and mononeuropathies (6).

Although symptoms may be sporadic or persistent, they can be debilitating and often lead to depression, sleep disorders, and overall reduced quality of life (7). DPN is often asymptomatic during the early stages; but once symptoms and deficits occur, they cannot be reversed (7).

DN accounts for 80–90% of diabetic neuropathies and is thus termed typical diabetic neuropathy, while other less common diabetic neuropathies are called atypical diabetic neuropathies (8).

Therefore, early diagnosis and timely intervention are essential to prevent the development and progression of DPN (8).

In this article, we review the current diagnostic approaches to DPN and discuss the potential limitations and challenges of these methods.

Symptoms of Diabetic Peripheral Neuropathy

- Numbness and loss of sensation
- Burning and tingling sensation
- Shooting pain and painful leg cramps
- Impaired balance and difficulty in walking
- Foot deformity
- Hot and cold sensitivities issue

IMPORTANCE OF A PROPER CLINICAL EXAMINATION

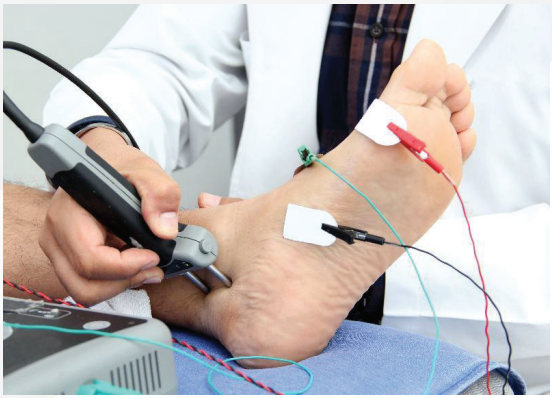
A proper clinical examination is the first step in the diagnosis of DPN and involves a thorough assessment of the patient's symptoms and medical history (8). The examination should include a comprehensive sensory and motor evaluation of the hands and feet, with particular attention paid to the presence of pain, numbness, tingling, and muscle weakness (8). The American Diabetes Association (ADA) and the International Working Group on the Diabetic Foot (IWGDF) recommends regular examination of people with Diabetes mellitus for the diagnosis of DPN using simple standard tests for the identification of those at risk for DPN and diabetic foot ulcers (8).

CLINICAL DIAGNOSIS OF DPN

As there are currently no therapeutic agents approved for DPN treatment, early detection is essential to modify any risk factors (8). The diagnostic tests are focused on assessing the symptoms and signs of nerve dysfunctions (8). Early diagnosis and timely intervention are thus essential in preventing the development and progression of DPN (8).

DIAGNOSTIC GOLD STANDARD OF DPN

- Nerve conduction studies (NCS) are the gold standard for the diagnosis of DPN (8). The Toronto consensus recommended the use of abnormal NCS with a symptom or sign to diagnose DPN (8). It evaluates the occurrence and development of DPN by detecting the ability of peripheral nerve to transmit electrical signals in patients with Diabetes Mellitus (4).



EARLY SCREENING METHODS FOR DPN

- Quantitative sensory testing (QST) is a technique for evaluating sensory neuropathy (4). It detects small fiber and large fiber neuropathy through standardized and quantified sensory differences such as stimulation, vibration, and temperature (4).
- Neuropathy disability score (NDS) is a score based on ankle reflex, dorsalis pedis acupuncturing sensation, toe vibration sensation, and temperature sensation (4). Early DPN generally occurs in the upper limbs and other parts (4). In the early stage, sensory neuropathy is more obvious than motor nerve (4). Therefore, NDS assesses lower limb neurosensory function and can be used as a screening tool for the early detection of DPN (4).
- Corneal confocal microscopy (CCM) is a non-invasive ophthalmic imaging technique used for assessing corneal nerve fiber morphology (4). In vivo, confocal microscopy can detect early peripheral neuropathy because the decrease of nerve density precedes the damage of corneal sensitivity (4). The significant correlation between corneal and cutaneous nerve degeneration in DPN strengthens the evidence that IVCM is a valuable tool for the diagnosis and assessment of DPN (4).
- Skin biopsy enables direct visualization of thinly myelinated and nonmyelinated nerve fibers that are the earliest to be affected in DPN (4). It allows morphometric quantification of intra -epidermal nerve fibers (IENFs), expressed as the number of IENFs per length of the section (IENF/mm) (9). The European Federation of Neurological Societies has published guidelines on its use in the diagnosis of peripheral neuropathies (9). However, the diagnostic yield of skin biopsy depends on the reference and cutoff values selected and the definition of small fiber neuropathy (9).

Examination name	Advantages	Disadvantages
Nerve conduction studies (NCS)	Objective, widely available	Only assesses large fibers, moderate reproducibility, requires special equipment
Quantitative sensory testing (QST)	Easy to perform, rapid, noninvasive, evaluate large and small nerve fibers	Expensive, variable, subjective, requires special equipment
Neuropathy disability score (NDS)	Relevant to the patient, easy to use, inexpensive	Limited sensitivity, high variability
Corneal confocal microscopy (CCM)	Objective, rapid, reproducible, assesses small fibers	Costly, requires specialist equipment
Skin Biopsy	Objective, the gold standard to assess small fibers	Costly, time-consuming, risk of infections requires specialist equipment and personnel to quantify intraepidermal nerve fiber density (IENFD)

Figure 1. Methods of diagnosing diabetic peripheral neuropathy (9).

Key Highlights

- DPN is a serious and underdiagnosed complication of diabetes of multifactorial etiology (5).
- The diagnostic tests are focused on assessing the symptoms and signs of nerve dysfunctions (4).
- Early diagnosis and timely intervention are essential to prevent the development and progression of DPN (4).

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Urology (Specialist)

Dr. Nomesh Kumar Munikoti
Anaesthesia (Specialist)

Malignant Neoplasm of Right Kidney

Malignant Neoplasm of Right Kidney treated successfully by Laparoscopic Radical Nephrectomy at Aster Hospital, Muhaisnah

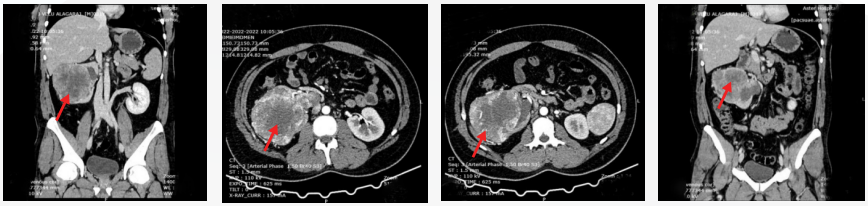
PRESENTATION

- 31 year old male
- Admitted with:
  - Complaints of right flank pain since a month
  - Gross hematuria
- No history of medical illness, previous surgery, and smoking
- No family history of malignancy

FINDINGS

During Examination, CT Urography showed:

- Large ill-defined exophytic mass lesion arising from the interpolar region of right kidney measuring 10 x 9.3 x 9.2 cm in size.
- The mass showed heterogeneous postcontrast enhancement with hypo-enhancing areas in the center with multiple enlarged perilesional blood vessels suggested histopathological correlation of renal cell carcinoma.
- The mass infiltrate the renal pelvis causing mild upstream hydronephrosis.
- It filled the anterior perinephric space distending the anterior perirenal fascia abutting the undersurface of right lobe of liver with preserved fat plane.
- The mass did not infiltrate the right renal vein / IVC. Single right renal artery and renal vein were noted.
- No excretion of contrast was seen in right renal pelvicalyceal system on 2 hours delayed scan.



Right Renal Mass with Post-contrast Enhancement

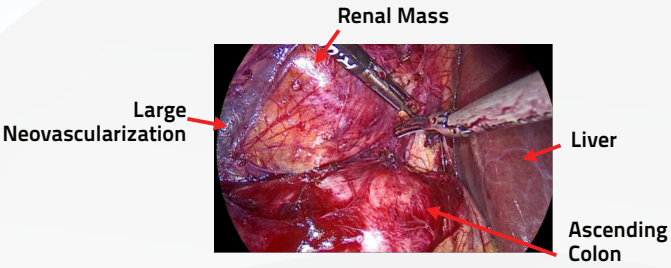
CLINICAL DIAGNOSIS

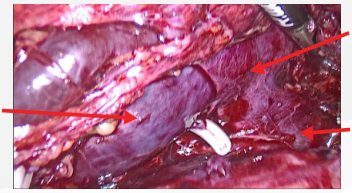
Right renal mass cT3aN0M0 as renal mass involving pelvicalyceal system with no lymph nodes, no metastasis.

DURING PROCEDURE

The patient was diagnosed with malignant neoplasm of right kidney (except renal pelvis) and underwent Laparoscopic Radical Nephrectomy surgery after taking informed consent:

- All parts were painted and draped under general anaesthesia.
- 16 Fr Foley catheter inserted in bladder.
- 10 mm camera port inserted by open method, two 5 mm working ports, and one 5 mm retraction port inserted under vision.
- Large right renal mass seen.
- Liver appeared normal and no free fluid in abdomen was seen.
- Peritoneum reflected from right kidney, ascending colon and duodenum was identified and dissected away from kidney.
- Kidney was dissected all around outside Gerota's fascia.
- Hilar dissection showed single renal vein and single renal artery.
- Artery and veins were dissected, skeletonized, and triply ligated individually with hemoclips and cut sequentially.
- Ureter was identified, skeletonized, doubly ligated, and cut.
- Adrenal vessels ligated and cut, and kidney was completely dissected.
- Hemostasis confirmed and thorough wash was given with saline.
- 20 Fr drain was kept in right renal fossa and fixed with silk 1-0 R/c.
- Pfannenstiel incision given, and layered dissection done to open abdomen specimen retrieved from pfannenstiel incision.
- Abdomen closed in layers with Vicryl 2-0 R/B for peritoneum, PDS 1 Loop for sheath, and Vicryl 2-0 R/B for subcutaneous, and skin with staplers.
- Ports were closed with port closing Vicryl and skin was closed with staplers.
- Cleaning and dressing was done.

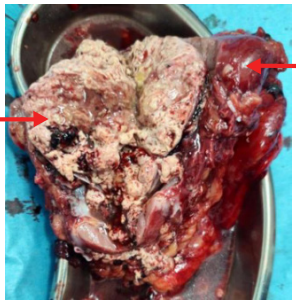




Intra-operative images

POST PROCEDURE

Patient tolerated the procedure well and was uneventful post-procedure. Foley catheter was removed on post-op day 1 followed by drain on day 3. Dressing was done and patient was able to pass urine and flatus. Patient is kept on oral diet and was discharged in a stable condition.

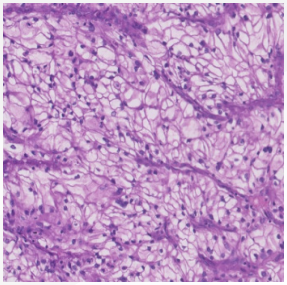


Excised tumour

HISTOPATHOLOGY

Multiple sections studied from the tumour in the kidney showed tumour cells with centrally placed nuclei with abundant clear cytoplasm arranged in sheets and lobules separated by delicate fibrovascular septa. Few of the cells showed nucleoli on high power. The tumour showed central areas of tumour necrosis in a few areas of multinucleation, and cells with prominent eosinophilic nucleoli with large irregular nuclei suggested sarcomatoid differentiation. Atypical mitosis was noted. There was no evidence of rhabdoid differentiation. Separately lying tumour fragments also showed similar histomorphology. Foci of renal capsular invasion were noted. There was no evidence of perirenal fat infiltration. Sections from the renal sinus and renal pelvis were free of tumours. Sections from the adjacent normal kidney showed infiltrating tumours at places. Viable glomeruli did not show any significant changes. Compression-related changes secondary to the tumour in the adjacent tubulointerstitium were seen. Sections from the surgical resected margin of the ureter and renal hilar

vessels were tumour-free. Sections from linear structure showed a thrombus, which is negative for tumour cells.



FINAL PATHOLOGICAL DIAGNOSIS

Right nephrectomy specimen: Clear cell renal cell carcinoma
Pathological staging: pT12b pNx.

DISCUSSION

No randomized controlled trial (RCT) has assessed the oncological outcomes of laparoscopic vs open radical nephrectomy. A cohort study [1] and retrospective database reviews are available, mostly of low methodological quality, showing similar oncological outcomes even for higher-stage disease and locally more advanced tumours [2-4]. Based on a systematic review, less morbidity was found for laparoscopic vs open radical nephrectomy.

Data from one RCT [3] and two non-randomized studies [5, 6] showed a significantly shorter hospital stay and lower analgesic requirement for the laparoscopic RN group compared to the open group. Convalescence time was also significantly shorter [6]. No difference in the number of patients receiving blood transfusions was observed, but peri-operative blood loss was significantly less in the laparoscopic arm in all three studies [3,5,6]. Surgical complication rates were low, with vast confidence intervals. There was no difference in complications, but operation time was significantly shorter in the open nephrectomy arm. Post-operative QoL scores were similar [5].

Some comparative studies focused on the laparoscopic vs radical nephrectomy peri-operative outcomes for renal ≥ T2 tumours. Overall, laparoscopic radical nephrectomy patients had lower estimated blood loss, less post-operative pain, shorter length of hospital stay, and convalescence than those who underwent open radical nephrectomy. In addition, intra-operative and post-operative complications were similar in the two groups, and no significant differences in CSS, PFS and OS were reported [4, 6,7] (LE: 2b). Another multicenter propensity-matched analysis compared laparoscopic- and open surgery for pT3a RCC (Renal Cell Carcinoma) showed no significant difference in 3-year RFS between groups [8]. The best approach for laparoscopic radical nephrectomy was the retroperitoneal

or transperitoneal approach with similar oncological outcomes in two RCTs [9,10] and one quasi-randomized study [11]. Quality of life variables was similar for both approaches. Hand-assisted vs standard laparoscopic RN was compared in one quasi-randomized study [11] and one database review, and estimated 5-year OS, CSS, and RFS rates were comparable [12]. The duration of surgery was significantly shorter in the hand-assisted approach, while the length of hospital stay and time to non-strenuous activities were shorter for the standard laparoscopic RN cohort [11, 12].

Laparoscopic nephrectomy has translated into significant patient benefits, including reduced blood loss and transfusions, reduced pain, shorter hospital stays, improved cosmesis, and a faster recovery than open surgery. In addition, while open surgery requires either a large abdominal or flank incision, minimally invasive approaches involve 3-4 keyhole incisions in the abdomen and do not require rib cutting which is involved in the flank incision. Laparoscopic nephrectomy can be done even for advanced RCC, including Renal Vein and IVC thrombus.

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Uterine Fibroid Embolization

A Large Fibroid treated successfully by Non-Surgical Endovascular Embolization Technique at Aster Hospital, Al Qusais

Dr. Sandeep Burathoki
Interventional Radiology (Consultant)

PRESENTATION

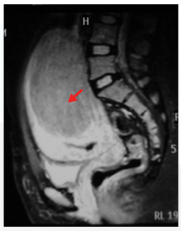
- 41 year old unmarried female
- Admitted with:
  - Complaints of heavy menstrual bleeding
  - Severe lower back pain
  - Frequent urge of urination

FINDINGS

During Examination:

- Afebrile with stable vital signs
- Lump at infra-umbilical region arising from pelvis corresponding to 18 weeks uterus, non-tender on palpation
- MRI Pelvis showed large intramural-subserosal fibroid (13 x 10 x 8.7 mm); located at anterior uterine wall compressing the urinary bladder, that explains her urinary symptoms

Sagittal T2W Image showing Large Hypointense Fibroid



Sagittal T1W Fat-Saturated Contrast Image showing Moderately Enhancing Fibroid

DURING PROCEDURE

- The patient underwent Uterine Fibroid Embolization via right transfemoral route. Bilateral uterine arteries were selectively catheterized that supplied the Hypervascular Fibroid.
- Abnormal vascularity of fibroid was embolized using Embosoft particles (500-700 micron)

- The final angiogram showed near-total devascularization of the abnormal fibroid blush with contrast stasis at proximal uterine artery.
- The right femoral site was sealed by using Angio-seal.

Fig. A

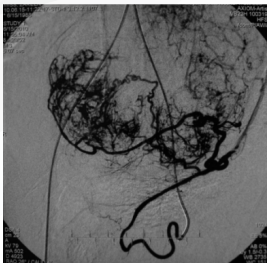


Fig. B

Fig. A and B showing Right and Left Uterine Arteries supplying Large Hypervascular Fibroid before treatment

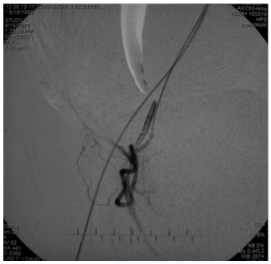


Fig. C

Fig. D

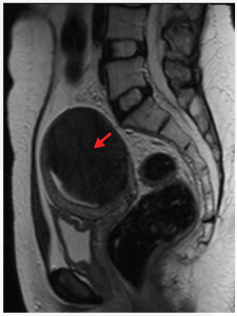
Fig. C and D showing Status Post Embolization near-total Devascularization of Fibroid

POST PROCEDURE

The patient tolerated the procedure well and was stable at the time of discharge on second day.

CLINICAL OUTCOME

On 3-month follow-up, the patient resumed normal menstruation with no pelvic cramps. Her complaint of lower back pain was completely resolved.



Sagittal T2W Image showing approximately 50% reduction in Fibroid size at 3 months

Sagittal T1W Fat-Saturated Contrast Image showing Ischemic Necrosis of Fibroid at 3 months

DISCUSSION

Uterine Fibroids (Leiomyomas) are the most common benign neoplasm of the female pelvis, affecting approximately half of women of reproductive age. The vast majority of fibroids are asymptomatic and are incidental findings during routine gynaecological examinations. Approximately 50% of women with fibroids experience symptoms, including menorrhagia, dysmenorrhea, and pressure symptoms with bladder and bowel dysfunction. Management strategies for symptomatic fibroids conventionally include hormonal treatment and surgical options: Hysterectomy and Myomectomy.

Uterine Fibroid Embolization (UFE) is considered as a safe and effective non-surgical treatment option. UFE is mainly considered for patients with symptomatic fibroids who have completed their family and want to avoid a hysterectomy. It is a minimally invasive (endovascular) technique performed via a 2 mm tiny puncture at the groin artery (femoral artery) or the radial artery. It is performed under mild sedation.

In UFE, bilateral uterine arteries are selectively catheterized using a 4-F angiographic catheter or a 2- or 3-F microcatheter under fluoroscopic guidance. Abnormal vascularity of fibroid is selectively occluded using micro-particles (PVA particles, Embospheres, Bead block) that induces Ischemia within the fibroid(s). Later, the fibroid shrinks through a process known as Hyaline Degeneration.

Following a Uterine Artery Embolization (UAE), the expected outcomes are 50-60% fibroid size reduction, 40-50% uterine size reduction, 88-92% reduction of bulk symptoms, and >90% elimination of abnormal uterine bleeding.

The most common complications are pelvic cramps (maximum on the first day post-treatment). Other complications include permanent amenorrhea (0–3% for women younger than 45 years, 20–40% for women older than 45 years), prolonged vaginal discharge (2–17%), fibroid expulsion, and septicemia (1–3%). Less than 1% of patients require a hysterectomy because of UAE complications.

Other indications of Uterine Artery Embolization in Obstetric-Gynaecological practices include adenomyosis, emergency control of postpartum haemorrhage (PPH), uterine AVM, ectopic scar pregnancy, and vascularized retained placenta.

CONCLUSION

Uterine Fibroid Embolization (UFE) is a minimally invasive non-surgical treatment option and should be discussed with patients with symptomatic fibroids who want to preserve their uterus.

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