Case report

Laparoscopic Management Of Retroperitoneal Mesenteric cyst in an Adult – A Case Report

ABSTRACT

The term mesenteric cyst refers to a heterogenous group of cystic lesions that are usually found in abdomen or in retroperitoneum. They are relatively rare entity with an incidence of 1 in 1,00,000 (Adults) and 1 in 20,000 (children). In this case report we present a case of 45 year old gentleman with a large retroperitoneal mesenteric cyst who underwent laparoscopic management of excision of cyst. Even though traditionally Laparotomy was the preferred modality of surgery, laparoscopy can be attempted and is equally safe in expert hands. However care should be taken to avoid injury to the vital structures and remove the cyst in toto without leaving any cyst wall/spillage.

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INTRODUCTION

The term mesenteric cyst refers to a heterogenous group of cystic lesions that are usually found in abdomen or in retroperitoneum. They are relatively rare entity with an incidence of 1 in 1,00,000 (Adults) and 1 in 20,000 (children) [1]. Mesenteric cysts are more common in males when compared to females with Males to female ratio of 2:1, However it can vary with the age group i.e. in children males are more commonly affected whereas in adults, mesenteric cysts are more commonly found in females [2,3]. They can be located anywhere along the mesentery of GI tract and retroperitoneum. The symptoms can vary from being asymptomatic to life threatening acute symptoms based on the location and time of presentation. The classic clinical finding of mobility of the mesenteric cyst along the transverse plane but not in the longitudinal plane was described by the French surgeon, who first performed surgical resection in 1880[4,5]. CT scan and MRI imaging helps us understanding the characteristics of lesion pre-operatively and decide on the operative plan. Treatment options range from observation in case of

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small simple mesenteric cysts to either enuculeation of cyst or excision of the cyst along with resection of the adjacent bowel. There are very few case reports in literature describing the laparoscopic management of mesenteric cysts.

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CASE REPORT

A 45 year old male presented with complaints of vague abdominal pain and discomfort in right upper abdomen for 6 months. He also has history of abdominal fullness on and off. There is no history of fever, jaundice, loss of appetite and loss of weight. His bowel and bladder habits are normal. He is a known hypothyroid and on regular medication for the same. On examination there is a soft palpable mass of size 6 cm x 8 cm approximately in right upper quadrant and right para umbilical region. Clinically the mass is intra-abdominal.

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The initial abdominal ultrasound done which showed a well-defined rounded lesion almost isoechoic measured about 9.5 cm X 8.0 cm was seen in the right upper quadrant. A 640 Slice CT scan of abdomen with contrast was performed which revealed a large cystic lesion involving right lumbar region with small calcification in its right lateral wall. Lesion measuring approximately 9.5 cm X 8.7 cm X 8.8 cm (MLXAPXCC), Very thin non enhancing septations noted within the cyst. There is no evidence of any arterial enhancing solid lesion within. Superiorly the lesion is abutting the junction of second and third part of duodenum with preserved intervening fat plane. Laterally the lesion is abutting the ascending colon. Postero-laterally, lesion was mildly compressing the Inferior vena cava (IVC) and abutting the psoas muscle posteriorly. Lesion is also abutting and mildly compressing the right mid ureter against the psoas muscle without any obvious evidene of hydroureteronephrosis. No obvious lymph nodes or free fluid is seen in the abdomen. All these features were suggestive of benign mesenteric cyst

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In the view of radiological and clinical findings, a provisional working diagnosis of benign mesenteric cyst was made. Patient was taken up for Diagnostic laparoscopy with Laparoscopic excision of the mesenteric cyst. CO2 Pneumoperitoneum was created at palmers point with help of Verres needle and a 5mm trocar was

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introduced in the palmers point. Rest of the ports are placed under vision i.e. 1x 10mm port in left para umbilical region, 1x 5mm port in right para umbilical region and 1x5mm port in right lumbar region. On diagnostic laparoscopy, a solitary mesenteric cyst was noted in the right side retroperitoneum with size approximately 10 cm x 12 cm. Gastro-colic omentum was opened and hepatic flexure was mobilized to expose the mesenteric cyst in retro-peritoneum. We were able to separate the cyst in toto from surrounding structures with the help of harmonic scalpel after identifying Duodenum, Inferior venacava (IVC) and Ureter. Vascular pedicle to the cyst was identified and sealed with harmonic shears. Cyst was placed in the endobag and then aspirated, approximately 400 ml of yellow color fluid was drained and endobag was retrieved through 10 mm port after extending it. Patients was started on orals 6 hours after surgery. He had an uneventful post-operative recovery, mobilized well and was discharged on POD 1.

Histopathologic examination of the cyst wall showed focal hyalinization with calcification, focal nonspecific chronic inflammation and fibro-collagenous stromal tissue with no evidence of nuclear atypia or granuloma– suggestive of Mesenteric cyst. Aspirate of the cyst showed scanty material with squamous cells and negative for malignant cells. Patient is on regular follow up and recovery has been uneventful.

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FIG 1 – CT scan showing mesenteric cyst and its surrounding relations to the vital structures

Fig 2 – Picture showing port positions. We have kept a 24F drain through one of the 5 mm port at the end of procedure.

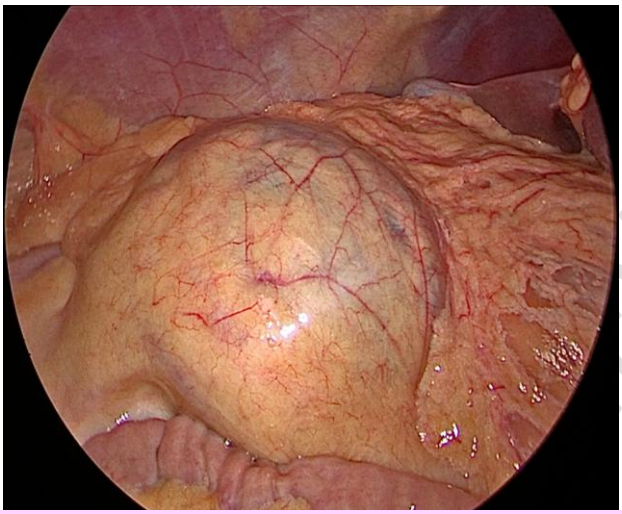

Fig -3 Initial intra operative view on diagnostic laparoscopy.

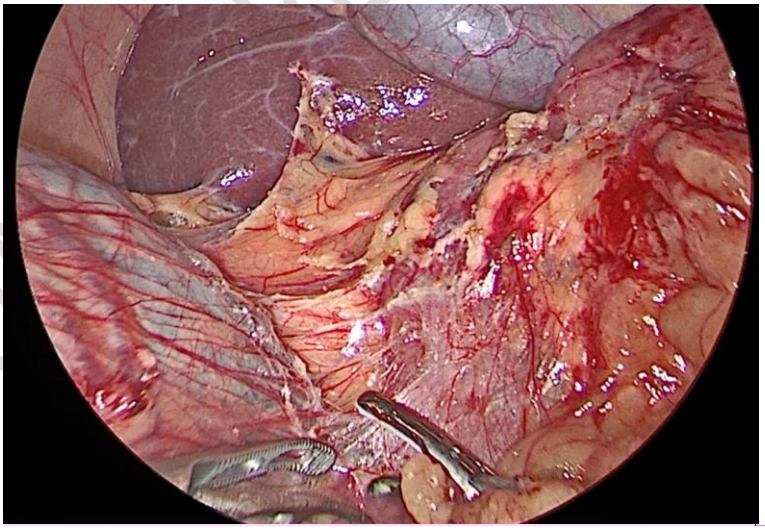

Fig 4 – Hepatic flexure mobilization and retro-peritoneal dissection being done to separate the cyst all round from surrounding structures

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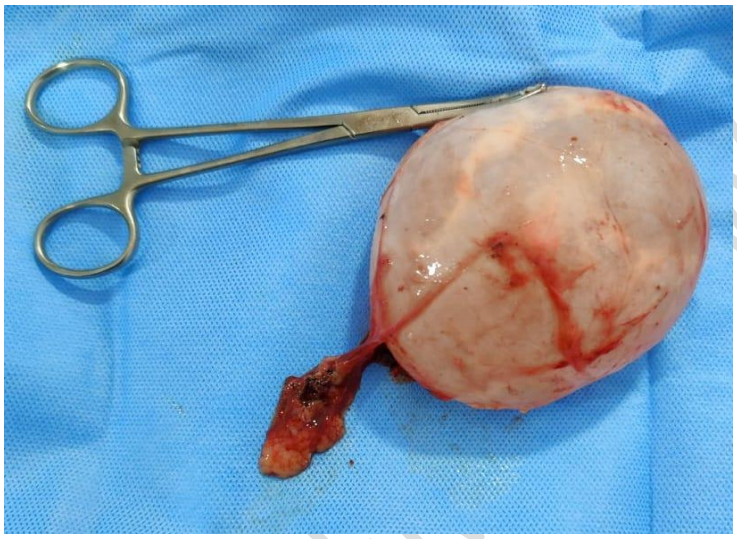

Fig 5 – Excised in-toto specimen of the mesenteric cyst

DISCUSSION

Mesenteric cysts are a group of heterogenous cystic lesions which are intra-abdominal and they can arise from mesentery or omentum and location can be anywhere from duodenum to rectum. Small bowel mesentery, especially ileal mesentery has been described as the commonest location of mesenteric cysts [5]. The most commonly used classification, developed by De Perrot in 2000 [6], Mesenteric cysts are classified based on their histo-pathological original origin into 6 types i.e.

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1. Cysts of Lymphatic origin (Simple lymphatic cyst, Lymphagioma),

2. Cyst of Mesothelial origin (Simple mesothelial cyst, Benign cystic mesothelioma, Malignant cystic mesothelioma),

3. Cyst of enteric Origin (enteric duplication cyst enteric cyst),

4. Cyst of Urogenital Origin,

5. Mesenteric cystic teratoma (dermoid cyst),

6. Non Pancreatic Pseudocysts (traumatic/infectious origin)

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Symptomatology can widely vary based on the location and size of cyst. In approximately 40 % of the patients, mesenteric cysts can be entirely symptomatic and are detected only imaging which is usually done for other purposes. They can also present with non-specific complaints such as abdominal pain, bloating and distension. They can be located anywhere along the mesentery of GI tract and retroperitoneum. Majority of the mesenteric cysts occur in small bowel followed by large bowel and retro-peritoneum. Retro-peritoneal location of mesenteric cysts is rare, when present cysts are usually close to vital structures like IVC, ureter and other retroperitoneal structures. Approximately 33% of the patients present with acute abdomen because of complications of mesenteric cyst like obstruction, perforation of bowel, rupture of cysts. Etc [4,5]. Acute symptoms are more common in childhood when compared to adults [7,8]. Vague and chronic abdominal pain has been noted as most common symptom for mesenteric cysts among multiple case series[9,10,11]. Chronic abdominal pain was often associated with abdominal distension, nausea, and vomiting. In a case series of the 70 reported cases, the acute onset of abdominal pain due to mechanical compression and bowel obstruction was present in 7 patients [12,13,14,15,16]. The classical clinical finding of palpable mass in abdomen which is mobile only in transverse axis but not in vertical axis is found only in very few patients in whom mass is large and palpable.

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Laboratory blood investigations are not particularly helpful in diagnosis of mesenteric cyst. However imaging modalities play a very important role in establishing the provisional diagnosis as well as the nature, location and extent of the cyst. Initial Ultrasonography of the abdomen helps in establishing the nature of lesion i.e. whether its cystic, mixed or solid. However CT and MRI provide more details like exact size of the lesion, thickness of the wall, origin of the lesion and proximity to the vital structures. Nevertheless, since there is a substantial overlap between CT and MRI findings of the many mesenteric cystic lesions, these imaging techniques do provide specific diagnostic information in most cases[17]. CT helped us in our case to understand the details like cyst consistency, relation and proximity to the vital structures and thus helped us in planning for the surgery.

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Though very rare the chance of malignancy should be kept in mind when planning for therapeutic procedure. Even though majority of mesenteric cysts of benign the chance of recurrence is high especially when followed by partial excision of the cyst wall or marsupialisation. Even though wait and watch has been proposed for small asymptomatic mesenteric cysts, most of surgeons prefer for complete removal cyst given the risk of developing potential complications. Percutenous drainage procedures with or without ethanol using interventional radiology has been suggested as alternatives in recent years, Although this procedure is less invasive than surgery, it carries the risk of leaving a lesion in situ that is already or destined to become malignant. The other potential concern is that the fluid produced by the cyst epithelium is not eliminated by ethanol ablation, with the consequent risk of recurrence[18].

In most cases, the treatment of choice is surgical excision of the cyst with or without bowel resection as it also provides definitive histo-pathological diagnosis apart from preventing the further complications due to the cyst. Literature shows traditionally open surgery in form of laparotomy has remained mainstay especially in larger cysts. However in the recent times laparoscopy have been successfully utilised to successfully achieve the complete removal of cyst. Hence Laparoscopic excision of cyst with or without concomitant bowel resection can be utilised whenever technically feasible. However when attempting laparoscopic care should be taken to avoid spillage or partial excision of cyst and should be attempted by surgeons are routinely performing advanced laparoscopic procedures.

In our case, the patient was symptomatic, the size of cyst is larger and on the imaging there are no features suggestive of malignancy, Hence we decided to procced with Laparoscopic approach. We identified all the surrounding vital structures and were able to dissect the cyst without any spillage.

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CONCLUSION

Mesenteric cysts as a cause of abdominal pain or discomfort is rare in adults. Incidence as per literature in adults is 1 in 1,20,000 to 1,50,000. Retroperitoneal location is an uncommon location for mesenteric cysts and they lie very close to vital structures like duodenum, IVC, Ureters and kidney. High resolution CT/MRI helps us in understanding the relation of the cyst to surrounding structures and also in understanding the nature of cyst (benign/malignancy). Even though traditionally Laparotomy was the preferred modality of surgery, laparoscopy can be attempted and is equally safe. However care should be taken to avoid injury to the vital structures and remove the cyst in toto without leaving any cyst wall/spillage. Experience and proper understanding in retro-peritoneal anatomy is essential to perform a safe laparoscopy surgery in cases like ours.

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