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 the abdomen or in the retroperitoneum. They are a rare entity with an incidence of 1 in 1,00,000 in adults and 1 in 20,000 in children. We wish to present a case of 45 year old gentleman with a large retroperitoneal mesenteric cyst who underwent laparoscopic management of excision of cyst. In our case, the cyst was approximately 10x12 cm and was abutting vital structures like Inferior venacava, ureter and duodenum. We were able to excise the cyst without any spillage and taking care not to injure the surrounding structures.

INTRODUCTION

Mesenteric cyst included heterogenous group of cystic lesions which are usually found in abdomen or in retroperitoneum. They are uncommon with an incidence of 1 in 1,00,000 among adults and 1 in 20,000 among 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 Gastro-Intestinal 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 a French surgeon, who first performed surgical resection in 1880[4,5]. Computerised Tomography (CT) scan and Magnetic resonance imaging (MRI) helps us in understanding the characteristics of the lesion pre-operatively and prepare the operative plan. Treatment options range from observation in case of small simple mesenteric cysts to either enucleation of the 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[3].

CASE REPORT

A 45-year - old male presented with complaints of vague abdominal pain and discomfort in the right upper abdomen for 6 months. He also had history of abdominal fullness on and off. There was no history of fever, jaundice, loss of appetite and loss of weight. His bowel and bladder habits were normal. He has known hypothyroidism under oral substitution. On examination there was a soft

palpable mass of size 6 cm x 8 cm approximately in right upper quadrant and right para umbilical region. Clinically the mass was intra-abdominal.

The initial abdominal ultrasound revealed a well-defined rounded lesion almost isoechoic measuring about 9.5 cm X 8.0 cm located 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. The lesion measured approximately 9.5 cm X 8.7 cm X 8.8 cm (MLXAPXCC) and very thin non enhancing septa were noted within the cyst. There was no evidence of any arterial enhancing solid lesion within. Superiorly the lesion was abutting the junction of second and third part of duodenum with preserved intervening fat plane. Laterally the lesion was abutting the ascending colon. Postero-laterally, the lesion was mildly compressing the Inferior venacava (IVC) and abutting the psoas muscle posteriorly. It was also abutting and mildly compressing the right mid-ureter against the psoas muscle without any obvious evidence of hydroureteronephrosis. No obvious lymph nodes or free fluid is seen in the abdomen. All these features were suggestive of a benign mesenteric cyst.

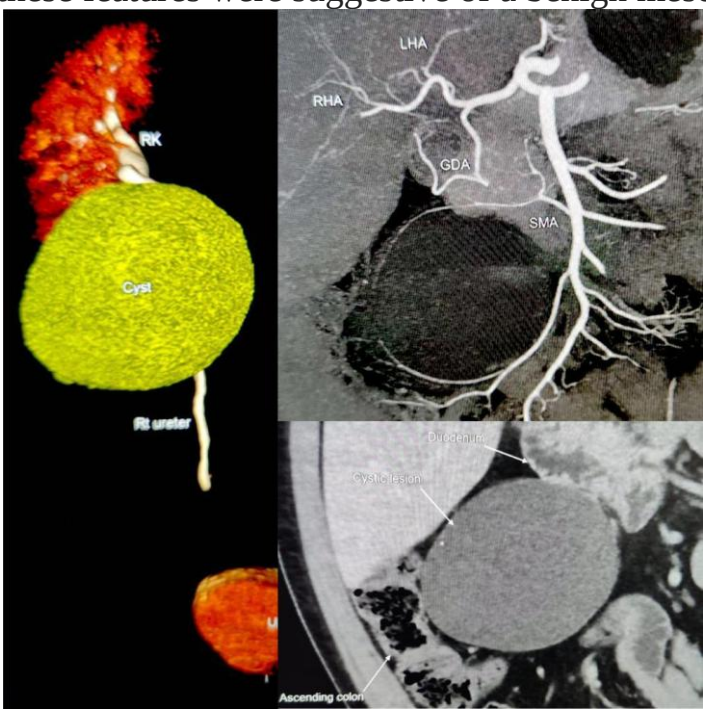

FIG 1 – CT scan showing mesenteric cyst and its surrounding relations to the vital structures

In the view of radiological and clinical findings, a provisional working diagnosis of a benign mesenteric cyst was made. Patient was taken up for diagnostic

laparoscopy with laparoscopic excision of the mesenteric cyst. CO2 pneumoperitoneum was created at palmer's point with help of Verres needle and a 5mm trocar was introduced in the palmer's 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.

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

On diagnostic laparoscopy, a solitary mesenteric cyst was noted in the right retroperitoneal space with size of approximately 10 cm x 12 cm. The Gastro-colic omentum was opened and the hepatic flexure was mobilized to expose the mesenteric cyst in the 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. The cyst was placed in the endobag and then aspirated, approximately 400 ml of yellow color fluid was drained and the endobag was retrieved through 10 mm port after extending it. The patient was started on orals fluids 6 hours after surgery. He had an uneventful post-operative recovery, mobilized well and was discharged on post operative day 1.

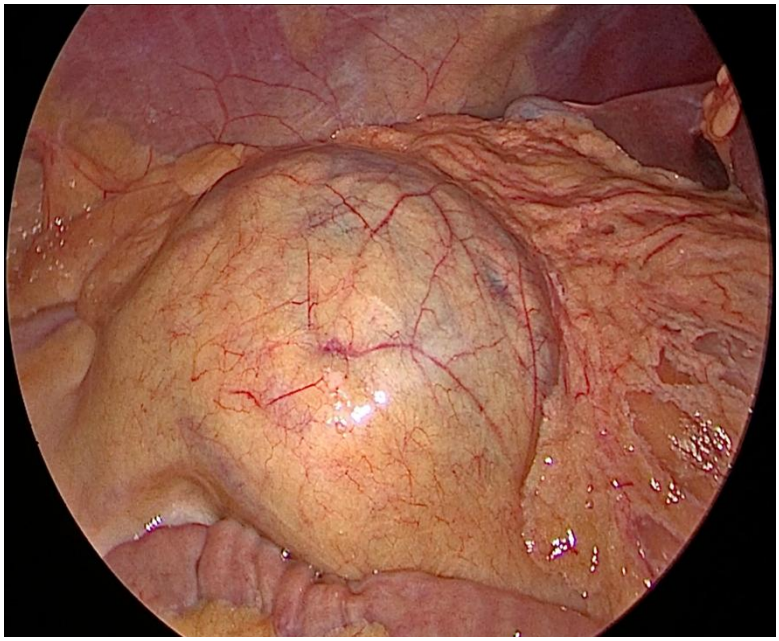

Fig -3 Initial intra operative view on diagnostic laparoscopy.

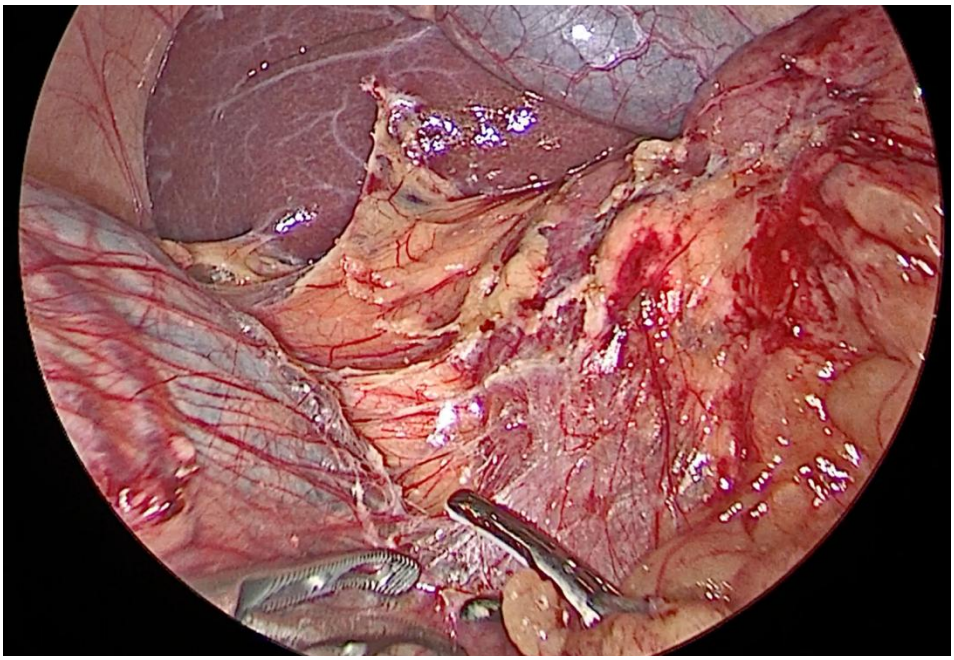

Fig 4 – Hepatic flexure mobilization and retro-peritoneal dissection being done to separate the cyst all round from surrounding structures

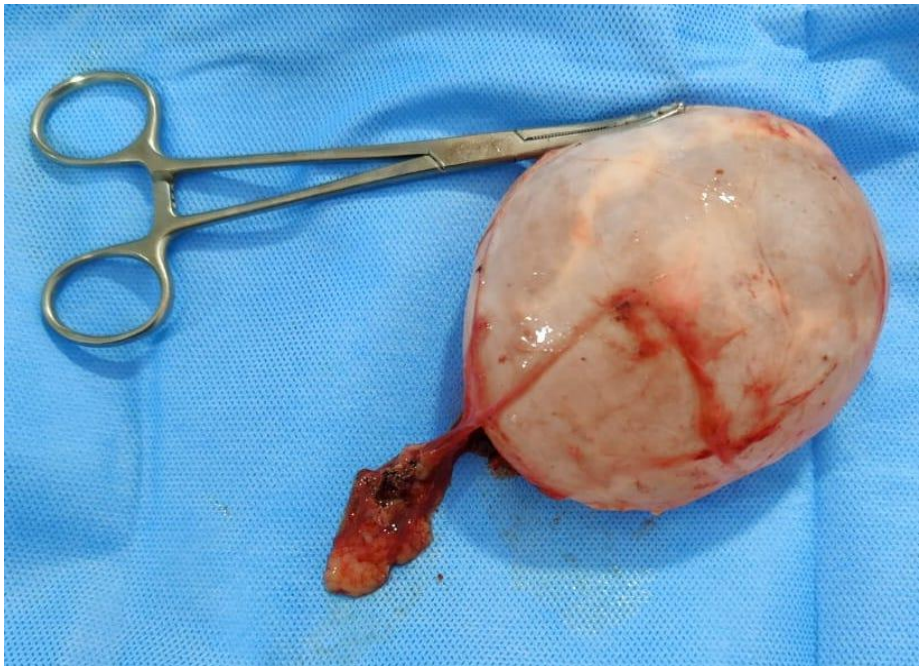

Fig 5 – Excised in-toto specimen of the mesenteric cyst

Histopathologic examination of the cystic 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 was negative for malignant cells. The Patient is on regular follow up examination and his recovery has been uneventful.

DISCUSSION

Mesenteric cysts are a group of heterogenous cystic lesions which are intra-abdominal and they can arise from mesentery or omentum. 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)]. According to 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.

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)

Symptomatology can widely vary based on the location and size of the cyst. In approximately 40 % of the patients, mesenteric cysts can be entirely asymptomatic and are detected accidently by imaging, which is usually done for other purposes[(4)]. 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. The majority of 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[5]. Approximately 33% of the patients presented 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 the most common clinical manifestation of 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 the mass is large and palpable[11].

Laboratory blood investigations are not particularly helpful in the 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[17]. Initial Ultrasonography of the abdomen helps in establishing the nature of lesion i.e. whether its cystic, mixed or solid. However, CT scan 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[17]. Nevertheless, since there is a substantial overlap between CT scan and MRI findings of the many mesenteric cystic lesions, these imaging techniques do provide specific diagnostic information in most of the cases [17]. The CT scan in our case helped us to understand the details of the lesion, like cyst consistency, relation and proximity to the vital structures and thus helped us in planning the surgery.

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[18]. Wait and watch has been proposed for small asymptomatic mesenteric cysts, However most of surgeons prefer a complete removal of the cyst given the risk of developing potential complications. Percutaneous 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[18]. 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[4]. 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[7]. Hence laparoscopic excision of the 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 was larger and on the imaging there are no features suggestive of malignancy. Hence we decided to proceed with a laparoscopic approach. We identified all the surrounding vital structures and were able to dissect the cyst without any spillage.

CONCLUSION

Mesenteric cysts as a cause of abdominal pain or discomfort is rare in adults. Retroperitoneal location is an uncommon location for mesenteric cysts. High resolution CT scan/MRI helps us in understanding the relation of the cyst to surrounding structures and also in understanding the nature of the 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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