A huge retroperitoneal lymphatic cyst presenting as a mesenteric cyst, managed laparoscopically

Manash Ranjan Sahoo, Leesa Misra, Raghavendra Mohan Kaladagi, Manoj Srinivas Gowda, Abinash Panda, Syam Sundar Behera

ABSTRACT

Introduction: Retroperitoneal lymphatic cysts are uncommon in occurrence. Due to presence of large potential space in the retroperitoneum, the cyst grows to a considerable size in abdomen before it presents clinically and the presentation noted in most of the cases are non-specific, confusing to the surgeons leading to delay in diagnosis. The treatment of choice is complete excision of cyst. Nowadays minimal access procedures are tried.

Case Report: We report a case of a huge retroperitoneal lymphatic cyst which had complex presentation mimicking as mesenteric cyst in a 22-year-old female, which was managed laparoscopically.

Conclusion: Retroperitoneal cysts are uncommon, with a very low estimated incidence. Approximately, one-third of patients with retroperitoneal cysts are asymptomatic and the cyst is found incidentally. Retroperitoneal lymphatic cysts are an uncommon lesion in adults. With complete surgical excision these tumors have an excellent prognosis, with great symptomatic relief. In such selected cases laparoscopy is helpful both as a diagnostic and therapeutic modality.
A huge retroperitoneal lymphatic cyst presenting as a mesenteric cyst, managed laparoscopically

Manash Ranjan Sahoo, Leesa Misra, Raghavendra Mohan Kaladagi, Manoj Srinivas Gowda, Abinash Panda, Syam Sundar Behera

ABSTRACT

Introduction: Retroperitoneal lymphatic cysts are uncommon in occurrence. Due to presence of large potential space in the retroperitoneum, the cyst grows to a considerable size in abdomen before it presents clinically and the presentation noted in most of the cases are non-specific, confusing to the surgeons leading to delay in diagnosis. The treatment of choice is complete excision of cyst. Nowadays minimal access procedures are tried. Case Report: We report a case of a huge retroperitoneal lymphatic cyst which had complex presentation mimicking as mesenteric cyst in a 22-year-old female, which was managed laparoscopically. Conclusion: Retroperitoneal cysts are uncommon, with a very low estimated incidence. Approximately, one-third of patients with retroperitoneal cysts are asymptomatic and the cyst is found incidentally. Retroperitoneal lymphatic cysts are an uncommon lesion in adults. With complete surgical excision these tumors have an excellent prognosis, with great symptomatic relief. In such selected cases laparoscopy is helpful both as a diagnostic and therapeutic modality.

Keywords: Erythropoietin, EPO, Miliaria, Eccrine sweat glands

INTRODUÇÃ0

Retroperitoneal cysts are uncommon with an estimated incidence of 1/5,750 to 1/250,000 [1]. Approximately, one-third of patients with retroperitoneal cysts is asymptomatic and found incidentally. Sometimes they pose challenge for proper preoperative diagnosis because of their location. With the recent development of surgical equipment and advance surgical techniques, a number of minimally invasive procedures are employed for treatment of such tumors. This case report describes a patient with lymphatic cyst mimicking as a mesenteric cyst who underwent a successful laparoscopic resection.

CASE REPORT

A 22-year-old female presented with mass per abdomen in right lower region since four months which was gradually increasing in size and associated with vague abdominal discomfort which was diffuse, constant, dull aching, nothing alleviated the pain. There were irregularities in her monthly cycles from last one year, no history of loss of appetite or weight, no history of tuberculosis or any surgeries (appendicectomy) and...
no significant changes in the bowel and bladder habits. Past history was insignificant except the menstrual changes. There was also no history of any gynecological malignancies in family members.

On examination, general condition was satisfactory, moderately built and nourished with mild pallor, no neck or axillary gland enlargement, with stable vital parameters. Abdominal examination reveals a mass in the right lower abdomen involving the lumbar, iliac region with extension in infra umbilical area; the mass was soft to cystic in consistency, mobile freely in transverse direction while less mobile in vertical direction, no shifting dullness and no thrill noted. Per vaginal examination revealed anteverted uterus and fullness in the right fornix with cystic feeling. Per rectal examination revealed a tense cystic fullness in pouch of Douglas with definite lumpy feeling.

On investigations, routine hemogram showed hemoglobin 8.6 g/dL with other normal parameters. Chest radiography was normal. Ultrasonography showed heterogenous hypoechoic lesion to right of psoas muscle. Computed tomography (CT) scan revealed a well-margined low attenuating SOL with attenuation value of +13 to +34 HU in right lower abdomen and pelvis, deforming the right psoas muscle, displacing the aorta and IVC to left side (Figure 1). There was loss of interface between right ovary and the cyst. Other pelvic organs are normal.

The patient was taken up for surgery with a few possibilities such as retroperitoneal cyst, mesenteric cyst, ovarian cyst. Under general anesthesia, one 10 mm umbilical port given and diagnostic laparoscopy was done. It was found that a cystic mass measuring about 15x15x8 cm in the retroperitoneal region just below the cecum displacing the bowel loops medially. Two 5 mm ports given to proceed with the surgery, one in left iliac fossa and the other in right pararectal area just above umbilicus level. A large bore (18 G) spinal needle was passed into the cyst from the abdominal wall under laparoscopic vision to aspirate the cystic fluid (Figure 2) for confirmation and complete decompression. Later, the cyst wall was completely resected out taking care not to injure the right iliac vessels which were in close proximity to the cyst (Figure 3). Finally, reperitonealization was done, after the cyst wall was removed in toto (Figure 4) and sent for histopathological examination which came out to be as a lymphatic cyst. There were no intraoperative or postoperative complications. The postoperative period was uneventful and the patient discharged on fourth postoperative day. Follow-up At fifth month, the patient was good and he is doing fine till date.

**DISCUSSION**

Embryologically, there are five regional primitive lymphatic sacs which normally develop into chains of lymph nodes [2] the paired jugular sacs lateral to the

---

Figure 1: Contrast-enhanced computed tomography scan showing cystic lesion in the right iliac fossa region.

Figure 2: Diagnostic laparoscopy showing cystic lesion just below the cecum, fluid aspirated percutaneously.

Figure 3: Bed of the cyst after its complete excision.
internal jugular veins, an unpaired retroperitoneal sac at the root of the mesentery, and the paired sacs adjacent to the sciatic veins. These sacs form chains of lymph nodes which drain the head, neck, arm, mesentery, hip, back, and leg, respectively. These regional primitive lymph sacs are generally thought to be developmental sites of lymphangiomas. Many agree for the note—lymphangiomas arise at these sites by continued growth of congenitally misplaced primitive lymphatic tissue which fails to acquire venous connections or as continued endothelial outgrowth of veins, whereas others believe that its due the lymphatic channel obstruction caused by trauma, fibrosis, node degeneration, inflammation genetic component and disorders of endothelial lymphatic vascular secretion or permeability.

In 1877, Wegner histologically divided lymphangiomas into three classifications: (i) lymphangiomas simplex (capillary lymphangioma), small, thin-walled lymphatic channels not common or found intra-abdominally, (ii) cavernous (sometimes malignant), larger thin-walled channels, more common but rare intra-abdominally, (iii) cystic (always benign) composed of large cystic spaces lined with flat endothelium, but common retroperitoneally and intra-abdominally [3]. Based on embryologic origin, retroperitoneal cysts are classified into (i) urogenital, (ii) mesocolic, (iii) cysts arising in cell inclusions, (iv) traumatic, (v) parasitic and (vi) lymphatic [1].

Approximately, 50% of lymphangiomas are present at birth, and almost 90% are diagnosed before the age of 2–5 years. These cysts can occur in any part of body where lymphatics are normally encountered. The most commonly affected sites are the head and neck (75%), where these are commonly referred to as ‘cystic hygromas’ (seen in newborns), followed by the axilla (20%). The remainder (approximately 5%) of the lymphangiomas are intra-abdominal arising from the mesentery, retroperitoneum or greater omentum [4], where they are referred to as ‘omentoal or mesenteric cysts’. The retroperitoneum is the second-most common location for the abdominal lymphangiomas after mesentery of the small bowel.

In Thrupp’s [5] series, 57.2% had asymptomatic abdominal masses, while 23.8% had infections or hemorrhagic complications, and 19% were postmortem or operative findings. Intestinal obstruction, peritonitis, rupture or infection may also be presenting symptoms. However, most tumors present with an increasing abdominal or flank mass and a dull flank pain with a “full sensation.”

The differential diagnosis of cystic tumor in the retroperitoneum raises several possibilities. These include both malignant and benign tumors, such as cystic mesothelioma, teratoma, undifferentiated sarcoma, cystic metastases (especially from ovarian or gastric primaries), cysts of urothelial and foregut origin, benign tumors such as lymphangioma, and other tumors such as retroperitoneal hematology, abscesses, duplication cysts, ovarian cysts [6]. Computed tomography scan is ideal for assessing retroperitoneal cysts because it provides discrete sectional images of the organs and retroperitoneal compartments, and in some cases, familiarity with the most relevant radiographic features, in combination with clinical information, allows adequate lesion characterization [7].

The treatment of choice for such retroperitoneal cyst is simple total excision. The recurrence is not commonly noticed unless you go with treatment options such as aspiration or drainage procedures or marsupialization. Dissemination in the retroperitoneum is a very rare, but potentially fatal complication [8].

Cysts arising within the retroperitoneum outside the major organs, within that compartment are very rare and one-third of them are asymptomatic. Retroperitoneal cystic lesions, although are benign, can be technically difficult to excise because of the proximity to major vessels or other organs. These rare tumors can be cured by complete excision. With advance in minimal access surgeries, we can tackle such diseases by laparoscopic cysts excision, which is feasible and safe, more on provides excellent cosmosis and has all the other advantages of laparoscopy. Laparoscopic approach may be attempted in selected cases to prevent large scars and morbidity associated with it including good results as in our case.

**CONCLUSION**

Retroperitoneal lymphatic cysts are uncommon lesions in adults. Since the disease is rare, investigations may not provide accurate diagnosis and in such a case diagnostic laparoscopy is helpful. These rare tumors have an excellent prognosis, with symptomatic relief and definite cure after complete surgical excision. In the modern era of minimal access surgery, this condition has
a definite treatment by laparoscopy, avoiding the need of laparotomy in selected cases.

*******

Author Contributions
Manash Ranjan Sahoo – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published
Leesa Misra – Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published
Raghavendra Mohan Kaladagi – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
Manoj Srinivas Gowda – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Critical revision of the article, Final approval of the version to be published
Abinash Panda – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published
Syam Sundar Behera – Acquisition of data, Drafting the article, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

Copyright
© 2014 Manash Ranjan Sahoo et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES
1. Guile M, Fagan M, Simopolous A, Ellerkman M. Retroperitoneal Cyst of Mullerian Origin: A case report and review of the literature. J of Pelvic Medicine and Surgery 2007;13(3):149–52.
2. Arey LB. Developmental Anatomy, 5th ed., Philadelphia, W. B. Saunders Company 1948.p.358.
3. Ackerman LV. Tumors of the retroperitoneal mesentery, and peritoneum, Atlas of Tumor Pathology, Washington, D.C., U.S. Armed Forces Institute of Pathology 1954.pp.87–9.
4. Fonkalsrud EW. Congenital malformations of the lymphatic system. Semin Pediatr Surg 1994;3(2):62–9.
5. Thrupp MH. Retroperitoneal cystic lymphangioma. Med J Aust 1963;1:617–8.
6. Bonhomme A, Broeders A, Oyen RH, Stas M, De Wever I, Baert AL. Cystic lymphangioma of the retroperitoneum. Clin Radiol 2001;56(2):156–8.
7. Yang DM, Jung DH, Kim H, et al. Retroperitoneal cystic masses: CT, Clinical and Pathological Findings and Literature Review. Radiographics 2004;24(5):1353–65.
8. Nishio I, Mandell GL, Ramanathan S, Sumkin JH. Epidural labor analgesia for a patient with disseminated lymphangiomatosis. Anesth Analg 2003;96(6):1805–8.
Edorium Journals: An introduction

Edorium Journals Team

About Edorium Journals
Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission
We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?
In less than 10 words - we give you what no one does.

Vision of being the best
We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services
We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review
All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review
All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version
Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status
From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks
You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.

Four weeks
After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.

Mentored Review Articles (MRA)
Our academic program “Mentored Review Article” (MRA) gives you a unique opportunity to publish papers under mentorship of international faculty. These articles are published free of charges.

Favored Author program
One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program
Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence
We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...
We request you to have a look at our website to know more about us and our services.

We welcome you to interact with us, share with us, join us and of course publish with us.