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Dr. Sumesh Ramesh Doiphode
Assistant Professor, Vedantaa Institute of Medical Science, Vedantaa Hospital and Research Center, Maharashtra, India

Dr. Deepak Tripathi
Senior Resident, American Instituite of Medical Sciences, Udaipur, Rajasthan, India

Dr. Rohit Rajeshkumar Singh
Senior Resident, Shri Ram Murti medical college, Bareilly, Uttar Pradesh, India

Dr. Bhushan Thakare
Senior Resident, Shri V.N. Govt. Medical College, Yavatmal, Maharashtra, India

Dr. Tasvir Balar
Senior Resident, Adesh Medical College, Ambala, Hisar, Haryana, India

Dr. Lakshay
Junior Resident, American International Institute of Medical Sciences, Transport Nagar, Udaipur, Rajasthan, India

Corresponding Author:
Dr. Deepak Tripathi
Senior Resident, American Instituite of Medical Sciences, Udaipur, Rajasthan, India

Novel presentation of idiopathic benign retroperitoneal cyst: A case report

Dr. Sumesh Ramesh Doiphode, Dr. Deepak Tripathi, Dr. Rohit Rajeshkumar Singh, Dr. Bhushan Thakare, Dr. Tasvir Balar and Dr. Lakshay

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Abstract
Benign cystic lesions of the retroperitoneum and mesenterium are rarely encountered clinically [1, 2]. Up to 40% of such cysts are found incidentally during abdominal surgery for unrelated disorders[1]. Most patients display some chronic symptoms that necessitate therapeutic intervention. CT scan might help in confirming the diagnosis and surgery is the mainstay treatment. This report describes a case of a giant retroperitoneal cyst successfully excised in an adult female.

Keywords: Idiopathic, retroperitoneum, mesenterium, patients, CT scan

Introduction

Case Presentation

A 20-years-old female presented to surgical outpatient department, with complaints of 6 months history of abdominal heaviness and discomfort. She had no previous medical or surgical history. She had normal appetite, with no weight loss or abdominal symptoms. On examination patientwas vitally stable with pulse rate 78 bpm, blood pressure 130/80 mmHg, Body temperature 37.0 °C. Abdominal examination showed fullness at the right Iliac Fossa with mild tenderness. There were irregularities in her monthly cycles from last 6 months, no history of loss of appetite or weight, no history of tuberculosis or any surgeries and no significant changes in the bowel and bladder habits. General condition was satisfactory, moderately built and nourished with no pallor, no neck or axillary gland enlargement. Per vaginal examination revealed anteverted uterus and with no fullness in both fornices. Per rectal examination revealed no fullness in pouch of douglas. On investigations, routine hemogram showed hemoglobin 10.6 g/dL with other normal parameters. Chest radiography was normal. Ultrasound was done showed a 3cm retroperitoneal mass at the right iliac fossa; thus, a CT-scan was ordered to evaluate the nature of the ultrasound finding. CT-scans showed ovoid cystic lesion located mainly at the right lumbar region, it was anterior to the distal inferior vena cava (IVC), adherent to the ascending colon and right psoas muscle (Figure 1), it exerts a mass effect on the surrounding structures and stretching of the blood vessels without local invasion (Figure 2), it measures about 5.5×6.5×6 cm. Impression a benign retroperitoneal cystic lesion. Other pelvic organs are normal.

Pre-Operative Evaluation

She was admitted for an elective surgery, the appropriate investigations were order and pre-operative antibiotics were administered for the patient.

Intra-Operative

A mid-line incision was done. The retroperitoneal mass was obvious at right iliac fossa region, with right ureter passing anteriorly. Mobilization of the right colon towards the midline (Cat tell-Braasch maneuvre), exposing the retroperitoneal mass, and carefully separating it from the right ureter, right psoas muscle and IVC. The retroperitoneal cyst was removed completely (Figures 3 to 6).

Post-Operative Follow-up

Patient stayed four days in the ward due to post-operative ileus which was treated, conservatively later discharged home to be followed in surgical outpatient department after fourteen days. On first visit, he was doing well, no complaint and normal bowel habit and appetite, examination wound was clean. Histopathology result showed grossly well-circumscribed soft pale-yellow cystic mass measures about 7×6×5 cm cut section yield a thin creamy-yellowish fluid, no solid areas or papillae were seen. Microscopically it consists of loose fibrous connective tissue with few dispersed aggregates lymphocytes and some mononuclear cells, on immunostaining it showed lymphatic/chylous origin. Impression Retroperitoneal benign cyst.

Discussion

Benign retroperitoneal tumors constitute 40% of all retroperitoneal tumors[3] with cystic tumors accounting for less than half of these[4,5]. Retroperitoneal cysts are usually grouped together with those of mesenteric origin since mesenteric structures are merely anterior extensions of what were originally retroperitoneal [1]. The incidence of such cysts has been stated as 1 in 102,500 to 250,000 hospitalized pa- tients, with 3% of the cysts found to be malignant [1, 2]. Malignant cysts show histologic presentations of low grade sarcomas such as cystic leiomyosarcoma [6] lymphangioendothelioma [6] or cystadenocarcinoma [7, 8].

Lymphatic cysts are subdivided into those formed in the lymphatics returning from the intestine and known as chylous cysts, and those arising in the lymphatic field behind the peritoneum and not connected with the intestine and are analogous in their origin, to the single cystic lymphangioma seen in the head and neck [9]. They are unilocular or multilocular cysts containing clear or milky fluid and lined with a single layer of flattened endothelium. One third of patients are asymptomatic, but cysts with considerable size may cause local compressing affect leading to stretching of vessels, adjacent organs, oedema, and subsequent thromboembolic complications [10, 11].

They can occur anywhere in the area between the duodenum and rectum, but are most frequently seen in the small-bowel mesentery, especially the ileum. The etiology has yet to be elucidated, but obstruction of lymphatic vessels or ectopic lymphatic tissue may be possible causes. These cysts may occur at any age, with the highest incidence being the fourth decahe, but one-third of the patients are less than 10 years of age. Most re- ports show a female preponderance and there is a low incidence among blacks [12]. Presentation features vary and become evident with an increasing size of the lesion. The cyst may appear as an asymptomatic abdominal mass, chronic abdominal pain, ascites, or as a complication-like obstruction of gastrointestinal, genitourinary or biliary systems or an acute abdomen.

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 [14]. 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 [13]. 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 [15], where they are referred to as 'omental or mesenteric cysts'. The retroperitoneum is the second-most common location for the abdominal lymphangiomas after mesentery of the small bowel. In Thrupp's [16] 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 hematoma, abscesses, duplication cysts, ovarian cysts [17].

Diagnosis of retroperitoneal cyst is challenging they are often diagnosed by chance in CT-scan or MRI, the most characteristics is large tumour containing uncomplicated fluid with or without septa. In CT-scan they appear large and thin walled in MRI usually demonstrate signal changes of fluid filled cyst [18].

Surgical excision is the treatment of choice, it is important to remove the cyst completely to prevent recurrence. When treating the large retroperitoneal cyst, laparotomy is the best choice, allowing better access preventing spillage and having to leave part of the cyst behind. Minimal invasive procedure also has a similar outcome; however larger cysts had to be aspirated prior to removal allowing better excision and permit mobilization. This has been described by Yagihashi *et al.* [18] they suggested using a normal aspiration needle may allow spillage, thus they developed a new with a designed double balloon catheter (SAND) for aspiration to minimalize cyst constant into the retroperitoneal cavity. This balloon was developed for benign ovarian cysts [19]. Another method was mentioned is an extraperitoneal approach, it prevents blood loss and leads to a quicker recovery, this was described in a retrospective analysis of eight patient over with hydronephrosis due to lymphatic cysts, upon which all patients underwent successful operations, with no reported recurrence [20].

Conclusion

Idiopathic cysts which arise from the retroperitoneal compartment are rare; they are often asymptomatic, however with overgrowth they may present with obstructive symptoms. They are difficult to predict or detect pre-operatively; thus, they are found in routine ultrasound, CT-scans, or MRI. Surgical excision is the main choice of treatment, several approaches were described in the literature and successful result were obtained.

Conflict of Interest

Not available

Financial Support
Not available

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