Case Report

Omental cyst presenting as tubercular ascites

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Abstract

Cystic lymphangiomas are uncommon congenital benign tumours of vascular origin with a lymphatic differentiation originating across various anatomical locations. Large intrabdominal cysts may mimic ascites. We report the case of a one-and-a-half-year-old male child with a giant cystic lymphangioma originating in the greater omentum presenting as tubercular ascites. This report aims to highlight the limitations of biochemical investigations such as ascitic adenosine deaminase (ADA) in differentiating the epidemiologically prevalent tubercular ascites from an intrabdominal cyst, especially in a resource-poor nation as ours, where invasive diagnostic procedures pose an economic burden.

Key words: cystic lymphangioma, pseudoascites

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Introduction

Lymphangioma is an uncommon benign lesion of vascular origin exhibiting lymphatic differentiation occurring across various anatomical locations. Most cases are located in the neck and axillary region whereas sites such as abdomen (located in the mesentery, omentum, and retroperitoneum) are rarely affected [1].

Clinical presentation depends upon the size of the cyst. Small cysts may be asymptomatic or present with acute abdomen while a big omental cyst may mimic ascites. During the evaluation of such cases that present with chronic complaints, the epidemiological profile of Tuberculosis (TB) in the country cannot be ignored. The total disease burden in India is enormous and it is estimated that more than 40% of the population is infected. In the paediatric age group, the prevalence is 1–6 per thousand paediatric years [2]. We report a case of a one-and-a-half year-old male with a giant cystic lymphangioma originating in the greater omentum presenting as tubercular ascites.

Case report

A one-and-a-half-year-old male child presented to us with complaints of progressively increasing abdominal distension of three to four months' duration. The distension was accompanied by mild fever and anorexia. There was no history of jaundice, chronic diarrhoea, progressive pallor, urinary complaints, respiratory distress, or contact with TB. General physical examination revealed stable vitals, normal anthropometric parameters, and absence of any lymphadenopathy, pallor, icterus or oedema. On systemic examination, generalized abdominal distension with bulging flanks eliciting a fluid thrill was noted. There was no organomegaly and hernial sites were intact. Investigations revealed: haemoglobin, 10.5 gm%; total leukocyte count, 9100 cells (70% polymorphs, 30% lymphocytes); erythrocyte sedimentation rate, 31 mm/hour; and Mantoux test displaying an induration of 9 mm. Chest X ray was normal. Paracentesis suggested an exudative collection with a protein content of 4 gm%, serum ascitic albumin gradient < 1 and normal amylase levels (12U/ml). Microscopic examination showed 750 cells/mm^3, all lymphocytes with no abnormal or malignant cells. The ascitic fluid adenosine deaminase (ADA) levels were raised at 53.9 IU/L (peritoneal fluid ADA range: tuberculous; 35-135 U/L, non-tuberculous: 1-28 U/L).

Ultrasound of the abdomen revealed a large fluid collection depicting internal echoes, with no well-defined walls, displacing bowel loops posteriorly. Barium meal studies were normal. Computed tomography scans of the abdomen resulted in similar findings. A diagnosis of tubercular ascites was established, keeping in mind the country's

epidemiological profile. The abdomen remains a major extrapulmonary site for TB. It may involve the gastrointestinal tract, peritoneum, lymph nodes or solid viscera, and constitutes up to 12% of extrapulmonary TB and 1%–3% of the total TB cases [3].

Mantoux induration and ascitic fluid examination showed exudative lymphocytic collection with raised ADA levels. Per the TB control programme of the country, the child received anti-TB therapy (ATT) for six months from a Directly Observed Treatment under Supervision (DOTS) centre. After completion of therapy, the patient revisited us with persistence of abdominal distension. There were no other associated new complaints or findings. A repeat ascitic tap displayed a rise in cell count to 1880 cells/mm^3 (all lymphocytes) while a repeat ultrasound proved similar to the previous one. Further, magnetic resonance imaging (MRI) of the abdomen was planned (Figure 1), which revealed a large fluid collection in the peritoneal cavity exhibiting absence of bowel loop separation and absence of fluid in the subhepatic space or hepatorenal pouch. These findings were consistent with an intraperitoneal cystic collection.

A diagnostic laparotomy was performed which revealed a giant unilocular multiseptated cyst measuring 12 x 15 cm arising from the greater omentum with no intraperitoneal adhesions. The cyst was successfully excised and a histopathological examination was conducted, which revealed the presence of endothelial-lined channels containing lymphocytic infiltrations in the stroma, thereby confirming it to be a cystic lymphangioma (Figure 2).

Discussion

Abdominal cystic lymphangiomas are uncommon congenital benign tumours with a male preponderance and a mean age of presentation of 2.2 yrs. About 50% are present at birth and up to 90% become evident by the age of two years [4]. Benign proliferation of ectopic lymphatics, failure of the embryonic lymph channels to join the venous system, trauma, and degeneration of lymph nodes are some of the proposed aetiologies. An omental cyst may contain abnormal localized collection which may be bloody, serous or chylous. The clinical presentation is diverse, ranging from an incidentally discovered abdominal cyst to symptoms of acute abdomen. Chronic presentations include progressive abdominal distension and pain [5].

Anorexia and detection of exudative lymphocytic intrabdominal septated fluid collection led us to investigate our patient for evidence of peritoneal TB. Due to constraints of reliable diagnostic modalities in the paediatric population, more so in endemic nations such as ours, evaluation for adenosine deaminase (ADA) may be a useful test for diagnosing TB [6]. A recent meta-analysis emphasized its role as a fast and discriminating test for peritoneal TB with high sensitivity (100%) and specificity (97%) at a cut-off value of 39 IU/L in ascitic fluid [7]. The study also highlighted that out of the 264 patients evaluated for ascites, 50 were caused by TB, and all of them had ADA values > 39 IU/L. Only six patients with ADA value over this cut-off point had another diagnosis, but ADA values > 56, as also seen in the present case, were associated only with peritoneal TB. Increased ADA activity may also be found due to a number of other causes such as chronic pyogenic infections, rheumatologic diseases, or lymphoproliferative disorders such as lymphomas. Evaluation of these conditions is directed by the clinical history and examination, supportive evidence for which was lacking in our patient.

Guided by a strongly positive ascitic fluid ADA value, an epidemiological profile of infections, and a presence of constitutional symptoms with exudative paracentesis, a therapeutic trial of anti-TB therapy (ATT) was offered. Failure of resolution of ascites despite adequate medical intervention prompted a search for an alternative diagnosis in lieu of which an abdominal MRI was performed, which eventually confirmed the existence of a giant cystic lesion. It is pertinent to mention here that during evaluation of patients who have obvious ascites, conditions that produce the physical signs of ascites without actual peritoneal fluid accumulation, referred to as pseudoascites, must be considered in the list of differentials. Mesenteric cysts, omental cysts, enteric duplication cysts, ovarian cysts, and pseudocysts are some of the distinguished entities likely to present as pseudoascites [8]. Lack of fluid in the dependent recesses of the peritoneum and absence of fluid separation between bowel loops are essential signs to differentiate between ascites and pseudoascites and must be evaluated in patients in whom no obvious cause of ascites can be ascertained. Ultrasound,

Figure 1. T2 weighted image of abdominal magnetic resonance imaging (MRI) showing a large cystic mass, appearing hyperintense insinuating around liver and spleen.

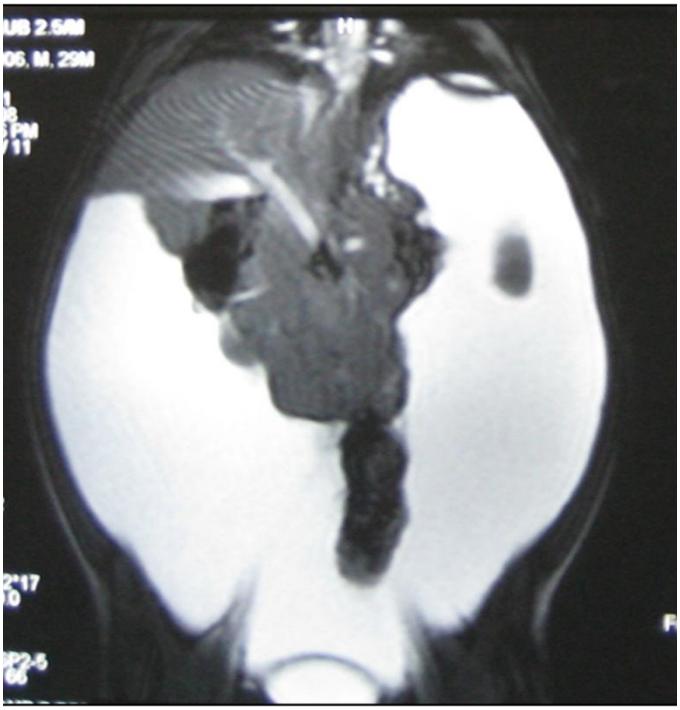
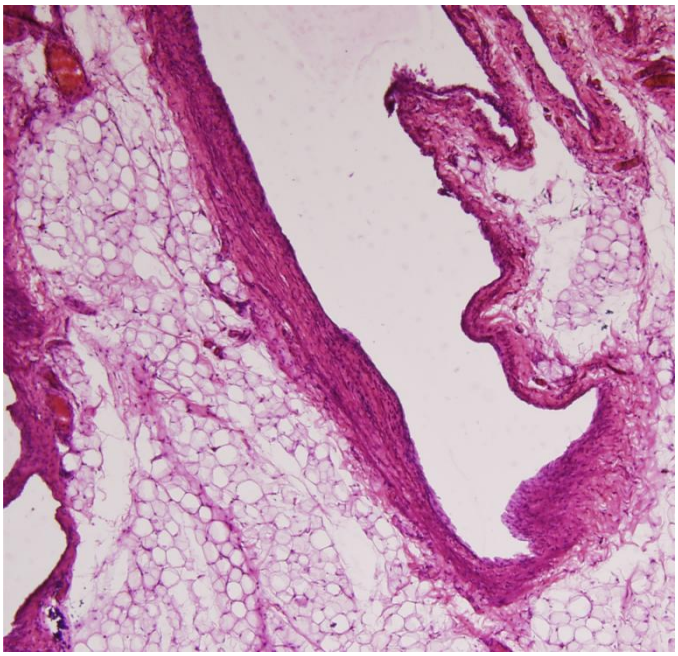


Figure 2. Low-power view of a section of omental adipose tissue and endothelial-lined channels with lymphocyte infiltrate in the underlying stroma.



computed tomography or MRI usually help in differentiating true ascites from pseudoascites [9]. To our knowledge, there is paucity of data evaluating ADA levels in cystic lesions. The sonographic appearance of a septated cystic mass with clear fluid is characteristic of a lymphangioma. The gigantic size of the lesion may be a factor posing a problem in differentiating the cyst from ascites, as in the present case.

Lymphangiomas are benign hamartomatous malformations containing endothelium lined channels with stromal aggregrates of lymphocytes. It is likely that these lymphocytes were contributing to the elevated ADA levels. Complete surgical excision is the treatment of choice; prognosis is excellent if the resection is complete. Malignant degeneration to low-grade sarcoma has been reported but is rare [10,11]. Overall results in paediatric patients are favourable.

This case illustrates the clinical and diagnostic pitfalls faced in differentiating the highly prevalent tubercular ascites from a rarer entity of cystic lymphangioma in a patient of massive abdominal distension, emphasizing the need to differentiate ascites from pseudoascites for successful management.

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