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CASE REPORT Open Access

Small bowel obstruction in ruptured male pelvic dermoid with situs inversus totalis: a singular case presentation

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Abstract

Background Pelvic dermoid cysts are extremely rare in males, with an even rare occurrence of rupture. Only a handful of cases of male pelvic dermoid cysts have been published with no reported case of ruptured male pelvic dermoid causing small bowel obstruction to the best of our knowledge.

Case presentation Herein we report a case of ruptured pelvic dermoid presenting with intestinal obstruction in an adult male patient with situs inversus totalis.

Conclusion Pelvic dermoid cyst should be considered even in males the presence of classical radiological signs. Knowledge of usual and unusual imaging signs as well as the associated life-threatening complications of a ruptured dermoid cyst can help in prompt diagnosis and timely patient management.

Keywords Ruptured male pelvic dermoid, Spontaneous rupture of dermoid, Small bowel obstruction in ruptured male pelvic dermoid

Background

Pelvic dermoid cysts are commonly seen in females and, however, are exceedingly rare in males. Most of the cases are asymptomatic and present in the late stage owing to their mass effect on the adjacent pelvic viscera [1]. Only a handful of cases of pelvic dermoid in males have been reported till date with no published case of a ruptured pelvic dermoid cyst causing intestinal obstruction. Here we describe a case of ruptured pelvic dermoid cyst presenting with intestinal obstruction in an adult male.

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Case presentation

A 35-year-old male patient presented to the emergency of our hospital with complains of sudden onset abdominal distension and severe lower abdominal pain without any history of significant trauma or prior similar episodes. Physical examination revealed guarding of the abdomen. Laboratory studies were unremarkable. Emergency abdominal supine radiograph done shows situs inversus and was otherwise inconclusive. The patient underwent emergency CECT abdomen, which showed a large, well-defined central pelvic mass; measuring ~ 10 × 11 × 14 cm in APx TRx CC dimensions; with large areas of fat density, soft tissue density and foci of calcification within (Fig. 1), located in the recto-vesical space and seen to extend superiorly till the level of the umbilicus. The most conspicuous finding was that of presence of intraperitoneal collections with tiny specks of intralesional fat attenuation seen in the perilesional, subdiaphragmatic and subhepatic locations (Fig. 2a and b). Additionally, situs inversus totalis was seen with dilatation of pelvic small bowel loops with air fluid levels within (Fig. 3). A

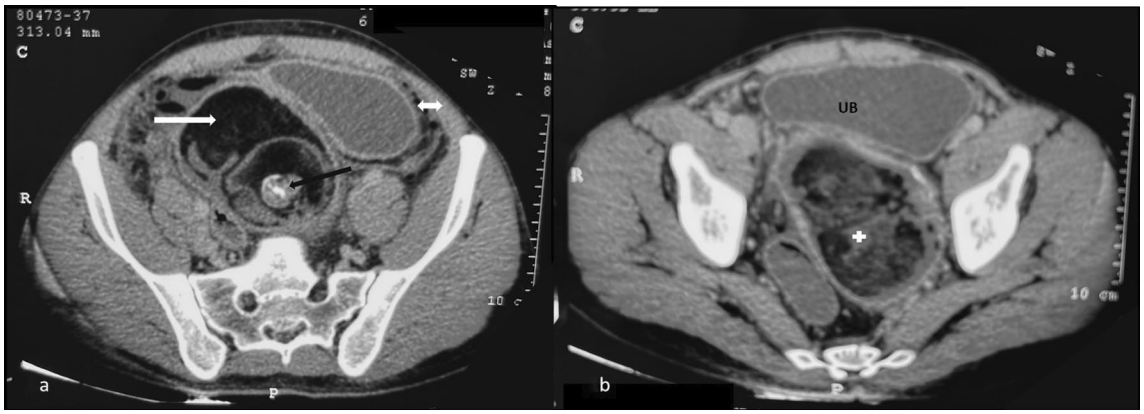

Fig. 1 Sequential axial section CECT of the lower abdomen and pelvis is shown in cranial to caudal direction. **a** A well-defined large, pelvic thick-walled multiloculated solid cystic lesion with predominant fat (white arrow) and Rokitansky soft tissue nodules with calcifications (black arrow arrow). Few tiny specks of extra luminal fat density are also seen within the peritoneum (double white arrow). **b** The pelvic dermoid cyst with soft tissue density (+) within in the rectovesical space displacing urinary bladder (UB) anteriorly

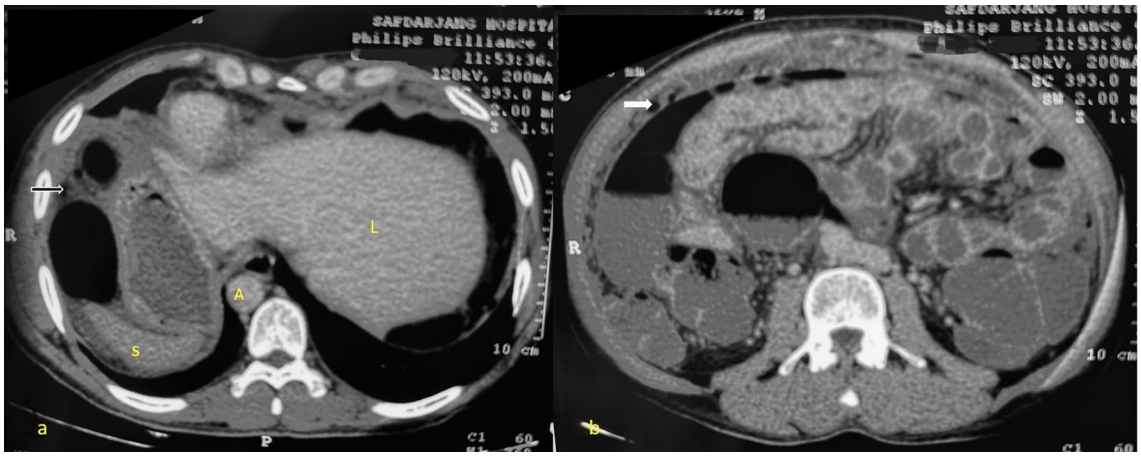

Fig. 2 **a** Axial sections of the CECT of the upper abdomen showed liver on left side(L), spleen (S) and descending aorta (A) on the right side with specks of fat in the sub-diaphragmatic location (black arrow). **b** Axial sections of the CECT of the mid-abdomen showed specks of fat in the peritoneal cavity (white arrow)

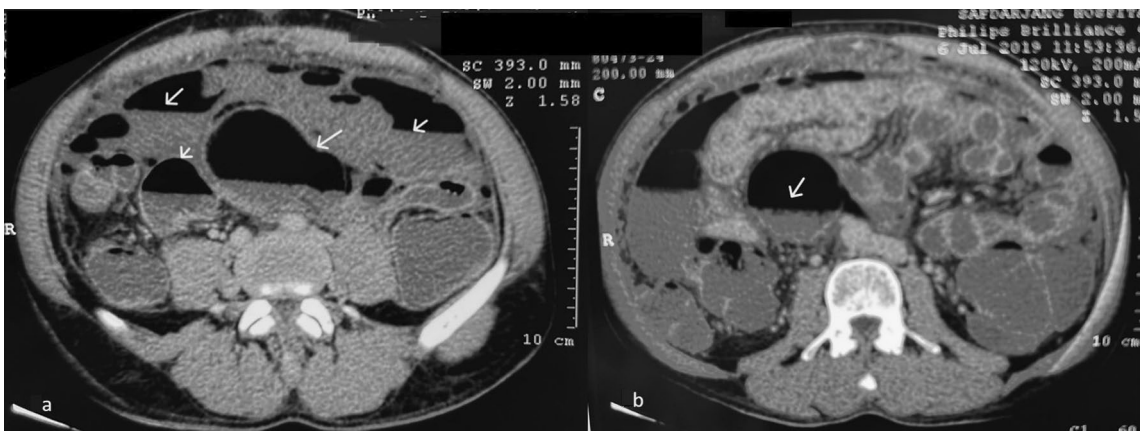

Fig. 3 Axial CECT abdomen sections showed dilated small bowel loops with multiple air fluid levels (white arrows)

final preoperative radiological diagnosis of ruptured pelvic dermoid causing small bowel obstruction was made.

Management and outcome

Patient underwent emergency laparotomy; the dermoid cyst was excised using a posterior approach along with adhesiolysis and peritoneal lavage. Our radiological diagnosis of mature pelvic dermoid cyst was confirmed on histopathology. Gross specimen showed yellow-white sebaceous material with gray- and brown-colored smooth walled cyst, and the microscopic examination revealed that the cyst was lined by keratinized stratified squamous epithelium and contained sebum. Multiple sebaceous glands and hair follicles were also seen within the cyst lining with presence of calcifications/bone components without any cellular atypia (Fig. 4).

Discussion

Dermoid cysts, also known as mature cystic teratomas, are benign tumors of embryonic origin consisting of two or three germ cell layers and are linked with aberrant migration of germ cells during embryogenesis. Henceforth, the midline or paramidline location of embryonic fusion lines accounts for their central or paracentral locations [1]. The presence of teratomas in the gonads and extragonadal locations such as intracranial locations, mediastinum, upper retro peritoneum and sacral/presacral locations in males is well-known entities, and most of them present in the pediatric age group [2]. Their occurrence in male pelvis is extremely rare in comparison with female pelvic dermoid cysts, which are quite common and typically originate from the ovaries. They are usually seen in the rectovesical pouch or perineum with variable presentation depending on their size and associated complications. The dermoid cyst may undergo complications such as torsion, rupture, adhesions, infections or malignant transformation. Rupture of this cyst is relatively uncommon owing to their thick capsule. A literature review on ruptured pelvic female dermoid cyst done by Li Rebecca et al. [3] found that most of these cysts ruptured without any discernible cause with pregnancy, torsion and malignant transformation being the next top three causes. No radiological or pathological evidence of torsion or malignant transformation was there in our case as well making it a plausible case of spontaneous rupture of the dermoid cyst. A similar case report of spontaneous rupture of an ovarian dermoid cyst associated with intra-abdominal chemical peritonitis was described by B. Nitinavakarn et al. [4]. No such published literature could be found for male pelvic dermoid cysts. The classical imaging appearance of a dermoid cyst is that of a solid cystic lesion with presence of solid components, cystic components, fat attenuation components, fat fluid levels, Rokitansky tubercles and chunky calcifications [5] as was seen in our case. In the absence of overt fat components or calcifications, these lesions may present as multiloculated cysts and may be mistaken for other cystic lesions of the male pelvis such as prostatic lesion, abscesses, duplications cysts which are relatively commoner lesions of the male pelvis. Alhumayed M et al. [6] reported a case of adult male pelvic dermoid in the rectovesical pouch extending to perineum, which was mistaken for a prostatic abscess. Sometimes the male dermoids may also be seen as perineal masses as was found by Mathew Sloan et al. [7]. The larger lesions may also present with pressure symptoms on the adjacent organs such as bladder or prostate and cause pelvic pain and discomfort [2]. Absence of clinical symptoms of infection and meticulous examination of the images can aid in reaching the correct diagnosis. Cross-sectional imaging like CECT scan and MRI is necessary adjuncts to ultrasound in the dubious cases. The patients with ruptured dermoid cyst can land up in bowel obstruction either due to chemical peritonitis or bowel adhesions owing to leakage of cyst contents into the peritoneal cavity, as was seen in our case. CECT scan in emergency settings can easily demonstrate the dermoid cysts as well as the associated complications its associated complications likely rupture and intestinal obstruction as was seen in our case. Situs inversus totalis, a congenital disorder resulting from the clock wise midgut rotation, present in our case may be related to the congenital nature of the disease spectrum without any proven association till date.

The mainstay of treatment is complete excision of the dermoid, which is curative. Histological evaluation of the excised mass is necessary to establish the

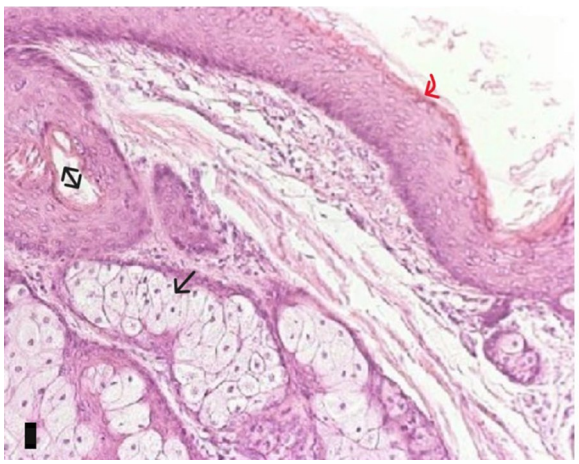

Fig. 4 High power field of the histopathological examination with H&E stain showed squamous epithelium (curved red arrow) with underlying sebaceous glands (double-headed arrow) and adipose tissue (black arrow)

diagnosis and rule out associated torsion or malignant transformation.

Conclusions

Pelvic dermoid cyst should be considered even in males in the presence of classical radiological signs. One should be aware of the usual and unusual imaging signs as well as the associated life-threatening complications of a ruptured dermoid cyst for prompt diagnosis and timely patient management.

Abbreviations

CECT Contrast-enhanced computed tomography
MRI Magnetic resonance imaging

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Author contributions

Dr S. collected the data, prepared the initial draft and images of the article and did the literature search. Dr J.G. and Dr. R. J. conceptualized the study, did literature search and edited the manuscript. All authors were directly involved in radiological evaluation of the case, reviewed the final manuscript and approved the final manuscript.

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Availability of data and material

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Declarations

Ethics approval and consent to participate

Departmental permission was taken for case publication.

Consent for publication

Written informed consent to publish this information was obtained from patient.

Competing interests

The authors declare that they have no competing interests.

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