Peritoneal inclusion cyst in a pre-pubertal male

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Abstract

Introduction Peritoneal inclusion cyst (PIC) is a cyst lined with mesothelium and usually full of fluids in the pelvis and it is most usually seen in young women and rarely, they may occur in males.

Case Presentation A 12 year old boy was referred with a two-day history of abdominal pain. Abdominal examination revealed lower abdominal tenderness. Laboratory tests were normal. Imaging by abdominal ultrasound and CT scan showed collection of fluid in the pelvis with some septations and lymphadenopathies. Shapeless cystic mass with thin membrane which was independent of abdominal organs was found during laparoscopy and extracted from pelvic cavity. Histopathologic examination established the diagnosis of peritoneal inclusion cyst.

Conclusion peritoneal inclusion cyst should be in mind as differential diagnosis in a patient with intra-abdominal cystic fluid collection even in childhood and male gender.

Keywords

- Peritoneal inclusion cyst
- childhood
- male
- Laparoscopy

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Introduction

Peritoneal inclusion cysts (PIC) are rare lesions especially in prepubertal period and male gender. It is mostly encountered in females with an age range of 15 to 60 years.[1]

A prior history of abdominal surgery, intrapelvic inflammatory disease, or endometriosis often is detected. The most common symptom is lower abdominal or pelvic pain.[2] The cysts are often multiple and may be as large as 20cm in diameter. They are often amorphic and confluent and may fill the pelvic cavity.[3] This multilocular cystic mass that is lined by mesothelial cells has been referred to as multilocular peritoneal inclusion cysts (MPICs).[2] MPICs are usually associated with clinical manifestations such as lower abdominal pain or a palpable mass.[4] Peritoneal inclusion cysts can be floating in the abdomen or adherent to pelvic or abdominal structures and may mimic a cystic ovarian tumor on clinical examination.[2] Inclusion cysts are linked strongly to female reproductive organs inflammations and no report was found of it in prepubertal males.[2]

We present a 12 year old boy with peritoneal inclusion cyst who was referred to us with a pelvic fluid collection and nonspecific abdominal pain

Case Presentation

A 12 year old boy was referred to our hospital for evaluation. He had a 2 day-history of abdominal pain, mild fever, and nausea and a history of previous hospital admission for abdominal pain in 5 month ago. At the time of admission, he was afebrile with normal defecation and no weight loss. There was no history of recent drug exposure. Family history was clear. Physical examination was normal except for a mild lower abdominal tenderness. Laboratory tests showed normal blood cell count and biochemical studies. Abdominal ultrasound and CT scan showed pelvis fluid collection and lymphadenopathies. Diagnostic laparoscopy was planned to evaluate the cause of this nonspecific abdominal pain.

Laparoscopy demonstrated 4 pieces of thin walled cystic masses, apart from abdominal organs (figure 1-right). The largest one (3×12.5cm) contained yellowish fluid and was extracted from abdominal cavity intact (figure 1-middle). The other 3 cysts, ranging from 1.5×13.5cm to 1×0.8cm, were ruptured during exploration. All the cysts were removed.

Microscopic examination demonstrated simple cysts that were lined by a single layer of flat to cuboidal and occasionally hobnail shaped mesothelial cells with foci of reactive hyperplasia and squamous metaplasia. The septa consisted of loose, fibromyxoid tissue with acute reactive inflammatory cells and fibrin.

Assessment of cyst wall cells by Immunohistochemistry studies showed positive results for calretinin and negative results for CD31. These findings were consistent with PIC (Figure 1 -left)

Cytologic assay of abdominal fluid revealed inflammatory cells and lots of mesothelialcells(mostly reactive), without any evidence of malignant transformation.

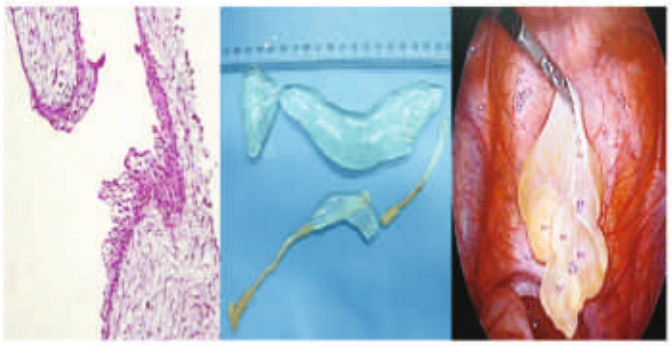

Figure 1: Laparoscopic view of peritoneal inclusion cyst in a pre-pubertal male (right). Peritoneal inclusion cysts extracted from pelvis cavity (middle) simple cyst wall composed of a single layer of flat and cuboidal mesothelial cells with foci of reactive hyperplasia and squamous metaplasia. (Left)

Discussion

Peritoneal inclusion cyst (PIC) is a fluid-filled mesothelial-lined cyst mostly in pelvis which is frequently encountered in young women with previous history of pelvic inflammatory disease. Peritoneal inclusion cysts have not been reported to date in prepubertal males.[2]

Most patients with peritoneal inclusion cysts present with pelvic pain or a pelvic mass.[5] A large peritoneal inclusion cyst can even cause urinary retention from bladder outlet obstruction.[6] Almost all cases of peritoneal inclusion cyst are reported in females. Pathophysiology of the disease is strongly related to inflammatory diseases of female reproductive organs and we have little information to discuss it in a prepubertal male, but prolonged history of abdominal symptoms may explain a previous inflammation in the abdominal cavity in our case.

On microscopic examination, PIC is typically lined by a single layer of mesothelial cells.[7] The risk of recurrence after excision is 30-50%. Peritoneal inclusion cysts have no malignant potential although occasional occurrence of metaplasia is reported.[6]

PIC may be mostly confused with multilocular cystic lymphangiomas. In contrast to PIC, the latter typically occur in boys during childhood. They are usually extra pelvic and localized in the mesentery of the small bowel, omentum, mesocolon or retroperitoneum. Their contents may be chylous and histologic examination often reveals lymphoid aggregates and smooth muscle that are rare findings in PIC. In problematic cases, IHC stains may be useful to distinguish between endothelial and mesothelial cells.[7] Laparoscopic approach to the

cystic abdominal lesions is the method of choice to avoid disadvantages of open surgery such as large scar, adhesions and other organ injuries.

Conclusion

Peritoneal inclusion cysts rarely arise in pre-pubertal boys yet it should be considered in the differential diagnosis of patients with prolonged nonspecific abdominal inflammatory symptoms even in childhood or the male gender. Laparoscopy has a diagnostic and therapeutic role in such circumstances.

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