

Acute Urinary Retention due to Primary Pelvic Hydatid Cyst: A Rare Case Report and Literature Review

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ABSTRACT

Causes of urinary retention in old men include benign prostatic hyperplasia, prostatitis, prostate cancer, Scarring of the urethra or bladder neck as a result of injury or surgery, use of certain medicines particularly NSAIDs and opioid analgesics, constipation and neurogenic bladder. When the above common causes are not quite obvious by clinical examination and relevant investigations, then it is necessary to think of other rare diseases. It is with the above in our mind that a case of bladder outflow obstruction due to a large primary retrovesical hydatid cyst is herein reported in a 58-year-old man. Ultrasonography (USG) and Contrast Enhanced Computed Tomography (CECT) scan of the abdomen and pelvis of the patient revealed a large, multilocular, nonenhancing, cystic lesion in the rectovesical pouch having typical cartwheel appearance without any other intraabdominal organ involvement. These typical radiological characteristics led us to suspect the presence of a hydatid cyst. He underwent exploratory laparotomy where cystopericystectomy was done. Pre-operative and post-operative albendazole prophylaxis was also given. In conclusion, hydatid cyst should always be considered in the differential diagnosis of pelvic cystic masses, specially in endemic regions.

Keywords: Echinococcal infection, Lower urinary tract symptoms, Rectovesical pouch of douglas

CASE REPORT

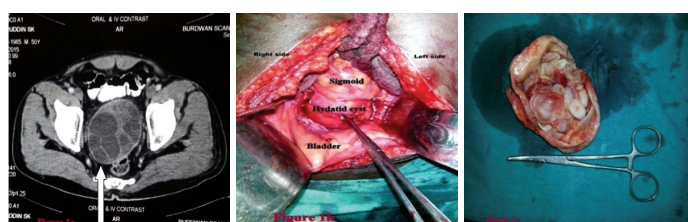
A 58-year-old male patient was admitted in surgical ward with retention of urine for the last 16-hours. He had a history of difficulty in passing urine for last three years along with sense of incomplete bladder evacuation and increased frequency for the same duration. Abdominal examination revealed that suprapubic bloating was due to full bladder, which was tender on palpation and dull on percussion. On per rectal examination, a smooth cystic extraluminal mass was felt anteriorly in the rectovesical pouch without any rectal mass or prostatic enlargement. He was immediately catheterised to relieve his discomfort. There was no history of burning micturition, fever or significant weight loss in the recent past. He had no history of surgery, instrumentation or trauma to the lower urinary tract and there was no history of taking regular medicines (like NSAIDs) which can cause bladder outflow obstruction. General physical examination of the patient was unremarkable and examination of the other systems including neurological system was essentially normal. His complete blood count, serum urea, creatinine and electrolytes, liver function tests and urinalysis were essentially normal. Ultrasound examination (USG) revealed a large, encapsulated SOL with both solid and cystic components, measuring 7.8×7.4×7cm in the pelvis, posterior to urinary bladder. On colour flow study no vascularity was seen in the lesion. There was no lesion in the liver or any other abdominal organ, and also no abnormality detected in prostate and seminal vesicles. Contrast enhanced computed tomography (CECT)scan of the abdomen and pelvis revealed a 8.3×8×7.5 cm, well defined, multilocular, non-enhancing lesion having typical cartwheel appearance [Table/Fig-1a] occupying the rectovesical pouch of Douglas pushing the rectum and anal canal backward and urinary bladder forward. Radiological examination of chest was normal. Flexible cystoscopy revealed an impression of the mass on posterior wall of urinary bladder. There were no duplications, ureteroceles or diverticulae on intravenous urogram. Provisional diagnosis of primary pelvic hydatid disease was made based on aforesaid findings, but hydatid serology (serum anti-echinococcus granulosus IgG antibody on ELISA) was not suggestive. Albendazole (10mg/kg/day) was given to the patient

for a period of 12-weeks but there was no regression in size of the lesion and symptoms persists. Then surgical excision under general anaesthesia was planned. He underwent an exploratory laparotomy for excision of the large retrovesical cyst [Table/Fig-1b]. On laparotomy the pelvic cyst was unroofed after injecting 10% savlon (1.5% cetrimide-0.15% chlorhexidine) inside it and after shielding the surrounded area with savlon soaked mops; a total cysto-percystectomy was done. During the surgery great care was taken to avoid spillage of hydatid fluid into peritoneal cavity and inadvertent injury to bladder, rectum and ureters especially right ureter which was densely adhered to the mass.

Patient had an uneventful postoperative recovery; urinary catheter was removed on 3rd post-op day. He could void normally from the 4th post-op day. Macroscopical examination of the surgical specimen revealed multiple daughter cysts [Table/Fig-1c] and the histopathological examination confirmed the diagnosis of a hydatid cyst. The patient had received albendazole 10 mg/kg/day for 3 months postoperatively and he was free from urinary symptoms for last 12-months follow-up period. Ultrasound examination was done twice in last one year which showed no recurrence.

DISCUSSION

Echinococcus granulosus is a cyclophyllid cestode (tapeworm), which causes hydatid disease. Although *E. multilocularis* and *E. oligarthus* can also infect human beings [1,2]. These cestodes have a worldwide distribution but the prevalence is much higher in developing countries including India. The eggs of the parasite



[Table/Fig-1a-c]: (a) CECT showing large cyst in the pelvis with multiple internal septations (honeycomb appearance, marked by white arrow); (b) Intra operative photograph of pelvic hydatid cyst between sigmoid colon and urinary bladder; (c) Numerous daughter cysts within the main large cyst.

released in the stool of the primary hosts (Dogs, wolves, jackals). Human beings (accidental intermediate hosts) may ingest eggs by intimate handling of infected dogs or drinking contaminated water (fecal-oral transmission). The most common sites of involvement are liver (59–75%), followed in frequency by lung (27%), kidney (3%), bone (1–4%), and brain (1–2%). Pelvic echinococcosis is extremely rare, with an incidence of only 0.2–2.25% [3]. Bickers et al., reported the occurrence of pelvic hydatid cyst in only 12 cases out of 532 cases of proven hydatid disease [4]. Clements et al., reported two cases of primary pelvic hydatid cysts in a series of 43 patients with pelvic hydatid cysts [5]. The vast majority of abdominal and pelvic hydatid cysts are considered to be secondary to spontaneous rupture from a primary hepatic focus or it may be due to inadvertent surgical inoculation, but primary pelvic cysts can occur rarely. A hydatid cyst in the pelvic cavity can be considered primary only when no other cysts are present, and in such cases the hydatid embryo gains access to the pelvic cavity either by hematogenous (bypassing the hepatic and pulmonary filters) or by lymphatic route. Connective tissue beneath the pelvic peritoneum is the usual site of origin of pelvic hydatid disease. From here it may spread to the uterus, ovaries, fallopian tubes, urinary bladder or to the rectum after contact [6].

Due to its location in a fixed bony pelvic cavity, it usually presents with pressure symptoms affecting the adjacent abdominal or pelvic organs. An extensive search of English medical databases (PubMed, Google Scholar etc.), using key word 'pelvic hydatid cyst' revealed some interesting case reports with different clinical presentations which were compiled in [Table/Fig-2] [7-14].

The usual differential diagnosis of pelvic cysts in an adult male includes seminal vesicle cyst, müllerian duct cyst, ejaculatory duct cyst, prostatic cyst or abscess, bladder diverticulum, ureterocele, Tailgut cysts or retrorectal cystic hamartomas, mesenteric cysts, colonic lymphatic cysts, intestinal duplications, ancient schwannoma and other cystic intrapelvic neoplasms [15]. Even in an endemic country, retrovesical space is an extremely rare site for a hydatid cyst [16]. Ultrasonography is the preferred first-line imaging. The classification proposed by Gharbi et al., for liver hydatid disease based on USG appearance, can be adopted for other locations also. Type I appears cystic and unilocular. Type II is a fluid filled with a floating membrane (the water lily sign). Type III has a typical honeycomb appearance. Type IV is a heterogeneous

mass, and Type V is a calcified lesion [17]. CECT provides the exact morphology of the cyst and helps in differentiating other causes of pelvic cysts and hydatid disease in other parts of the abdomen [18]. Serological tests may help in confirming the diagnosis. Gold standard treatment for hydatid cyst is surgery, either conventional open cysto-pecyctectomy or by laparoscopic surgery [19]. Percutaneous drainage can be done unilocular cysts (Gharbi type 1 and type 2 cysts). Medical treatment with albendazole before and after surgery reduces morbidity and chances of recurrence [20]. Treatment decision should be individualized for each patient, considering the number of cysts, its location, Gharbi classification and patients factors.

CONCLUSION

Primary pelvic hydatid cyst is a rare entity, albeit it must be considered while making the differential diagnosis of cystic masses in the pelvis, especially in endemic areas. Retrovesical hydatid cysts may have varied and non-specific presentation. USG and CECT both are excellent imaging modalities for the detection of hydatid cysts. The treatment of choice for pelvic hydatid cyst is principally a careful and complete surgical excision, which can be achieved either by open or laparoscopic surgery. Sometimes these large cysts may densely adhere to the neighbouring structures, where complete surgical extirpation is hazardous. In such cases Endocystectomy with partial pericystectomy can be done avoiding any intraperitoneal spillage.

LIST OF ABBREVIATIONS USED

NSAIDs: Nonsteroidal anti-inflammatory drugs.

SOL: Space-occupying lesion.

USG: Ultrasonography.

CECT: Contrast enhanced computed tomography.

ELISA: Enzyme linked immunosorbent assays.

TAH & BSO: Total abdominal hysterectomy and bilateral salpingo-oophorectomy.

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Author	Journal & year of publication	Age & sex	Presenting symptoms	Treatment	Outcome (Recurrence)
Gupta A et al., [7]	J Bone Joint Surg. 1998	24[F]	Right gluteal cystic swelling; Numbness and weakness involving the right leg.	Endocystectomy with pericystectomy (partial) for a dumb bell-shaped retroperitoneal cystic mass	—
Emir L et al., [8]	Journal of Pediatric Surgery, 2001	11[M]	Mass in the right lower abdomen; polydipsia, urinary frequency and secondary nocturnal enuresis.	Endocystectomy with pericystectomy (partial)	—
Ndaguatha PLW et al., [9]	East African Medical Journal 2003	31[M]	Inability to pass urine.	Excision of cyst and post op albendazole. (Inadvertent injury to rectum due to strong adhesions).	No recurrence in 9-year follow up.
Adilay U et al; [10]	Minim Invasive Neurosurg. 2007	31[M]	Cauda equina syndrome	Total excision of intraspinal hydatid cyst.	No recurrence in 3-year follow up
Parray FQ et al., [11]	Case Reports in Surgery (Hindawi Pub Corp 2011)	23[M]	Dull pain in hypogastric region; frequent micturition.	Excision of cyst, Post op albendazole.	—
Nasr R et al., [12]	Urology Annals. 2014	43[M]	Left flank pain and progressive severe obstructive urinary symptoms.	Excision of large retrovesical cyst, along with a left nephroureterectomy. Post op albendazole.	No recurrence in 16-months follow up.
Bhattacharjee PK et al., [13]	J Med Sci. 2015	25[M]	Acute retention of urine and severe agonizing pain radiating along the back of thighs and constipation.	Endocystectomy; pericystectomy (partial) and post op albendazole.	—
Sarkar RN et al., [14]	International J of Res in Med. Sciences 2015	37[F]	Dull aching pain in lower abdomen; abd distention; breathlessness due to huge right ovarian cystic mass.	Excision of cyst and TAH with BSO. Post op albendazole.	No recurrence in 4-months follow up.

[Table/Fig-2]: Published case reports of pelvic hydatid cyst with variable clinical presentations.

Age in years; sex: M= Male, F= Female; TAH and BSO=total abdominal hysterectomy and bilateral salpingo-oophorectomy.

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