Urinary Retention: Unusual Presentation of Hydatid Cyst. Case Report and Literature Review
R Saadeh, A Mohamed

Citation

Abstract
Retrovesical hydatid cyst are very rare even in endemic areas. We report a case of urine retention and obstructive uropathy caused by a retrovesical hydatid cyst. We also review the literature for this unusual location and presentation of hydatid disease.

INTRODUCTION
Although hydatid cysts can affect all organs in the human body, they are commonly found in the liver (60%) and the lungs (15%). Urinary tract involvement in hydatid disease is not common including only 2-4% of cases. We report a case of secondary retrovesical cyst in an 8-year-old girl who presented with obstructive uropathy.

CASE PRESENTATION
An 8-year-old school girl presented with a 2-day history of lower abdominal pain, which she described as dull and non-radiating with no relieving or aggravating factors. She failed to pass urine for 12 hours before her presentation. There was no past history of trauma or surgery and the review of the family history was unremarkable.

On examination, her vital signs were within normal limits. Abdominal examination revealed a palpable distended urinary bladder. There was no organomegaly or peripheral lymphadenopathy.

Laboratory investigations showed a hemoglobin of 9.3 g/l and a white blood cell count of 5.8×10^9/L. Urea and electrolytes, liver function test and urine analysis were normal. Echinococcus AB/HA was <160 (negative).

Abdominal ultrasonography showed two cystic lesions, one originating from the left lobe of the liver and the other was seated deep in the pelvic cavity with bilateral hydronephrosis. Intravenous urogram showed bilateral hydroureters and hydronephrosis (figure 1,2).

The abdominal and pelvic CT scan confirmed the two cystic lesions shown on ultrasonography. The first cyst was arising from the left lobe of the liver (figure 3) while the second cyst was arising from the pelvis posterior to the urinary bladder (retrovesical pouch), compressing the urinary bladder anteriorly with urinary outflow obstruction bilaterally (figure 4). No lymph node enlargement and no other lesions were seen.

Figure 1
Figures 1 & 2: Intravenous urogram showing bilateral hydroureters and hydronephrosis
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**Figure 2**
Figure 3: The CT scan showing a cyst occupying the left lobe of the liver.

**Figure 4**
Figure 5: Intraoperative photograph of the cyst of the left lobe of the liver.

**Figure 3**
Figure 4: Pelvic CT scan showing a cyst arising from the pelvis posterior to the urinary bladder (retrovesical pouch), compressing the urinary bladder anteriorly.

**Figure 5**
Figure 6: Intraoperative photograph of the retrovesical cyst.

After a preoperative course of albendazole for two weeks the patient had elective excision of both cysts.

Intraoperatively there were two large cysts, one occupying almost the entire left lobe of the liver (figure 5) and the other lying behind the urinary bladder in the retrovesical pouch (figure 6).

The two cysts were completely isolated from surrounding structures and injected with hypertonic saline. Endocystectomy was done for the liver cyst with partial pericystectomy for the retrovesical cyst (Figure 7 & 8).
Figure 6
Figure 7: Removal of the endocyst of the retrovesical cyst followed by partial pericystectomy.

Figure 7
Figure 8: The two endocysts after removal.

The patient had an uneventful postoperative period and was discharged on the 6th postoperative day.

DISCUSSION

Echinococcosis or hydatid disease is a parasitic infection caused by the larval stage of four different types of Echinococcus cestodes. The disease affects both humans and other mammals, such as sheep, dogs, rodents and horses (1).

Hydatid disease is endemic in cattle- and sheep-raising regions of the world such as Central Europe, the Mediterranean countries, the Middle East, South America, Australia, New Zealand, and South Africa (2-4).

Although hydatid cysts can affect all organs in the human body, they are commonly found in the liver (60%) and the lungs (15%). Brain, bones, muscles, adrenals, and the spleen are uncommon sites amounting to approximately 10%.

Urinary tract involvement in hydatid disease is not common including only 2-4% of cases. The kidneys are the most commonly affected organs in the urinary tract (5).

Hydatid cysts located in the peritoneal cavity or pelvis are usually secondary to spontaneous rupture from a primary liver focus or surgical inoculation (6). Pelvic echinococcosis is rare, with an incidence of 0.2 to 2.25% (with retrovesical location being even rarer) (7-9).

Pelvic localization may be considered primary if no other site is found to be affected (10). Very often the pelvic cyst coexists with a hepatic one, detected before or on the same occasion, so that these cysts are secondary in most cases (11).

Retrovesical hydatid cysts may have varied and non-specific presentation. The most common presentation was a palpable mass followed by flank pain, frequency, urinary retention and pain on micturition (12, 9).

There are many reports in the literature of hydatid disease presenting with urine retention and obstructive uropathy, most of them in male patients (13 – 17). We believe presentation of hydatid disease with urine retention in females is rare if ever been reported.

Ultrasonography and computed tomography are both excellent imaging modalities for the detection of hydatid cysts. The usefulness of magnetic resonance imaging lays in the precise definition of the anatomic relationship due to the excellent resolution for soft tissues (18).

Ultrasonography is the key diagnostic tool in cases of hydatid cysts. It is cost-effective, accessible and radiation-free with a high sensitivity ranging from 93% to 98% (19, 20).

The ultrasonic diagnosis of hydatid cyst is based on cyst wall and its contents. The majority of the characteristic features of hydatid cyst wall is due to the endocyst or germinal membrane. The ultrasound double line wall sign is highly suggestive of hydatid cyst (21, 22). This sign is produced by the echogenic pericyst and the echogenic germinal layer separated by an anechoic laminated membrane. The germinal layer, on its infolding, produces daughter cysts which are well-known pathognomonic signs of hydatid cyst.
CT is useful to confirm the diagnosis when there is doubt or to determine the exact location of non-hepatic cysts in relation to the adjacent organs. Demonstration of plaque-like calcifications in the cystic wall or the presence of daughter cysts by CT helps the diagnosis. CT sensitivity ranges from 90 to 98% (19, 20).

On imaging, a retrovesical hydatid cyst may mimic the following conditions: rectal duplication cyst, rectosigmoid neoplasm, posterior bladder diverticulum, cyst of the seminal vesicle, hydronephrosis in a pelvic kidney and large ectopic ureteroceles (23). In female patients, however, a retrovesical hydatid cyst may mimic ovarian neoplasm, Mullerian remnant, hydrosalpinx, pseudomyxoma peritonei, and tubal pregnancy.

The treatment of choice for localized peritoneal cyst is principally a careful and complete surgical excision (24, 25)

For retrovesical hydatid cysts preoperative albendazole treatment decreases the viability of the cysts, but the duration of the treatment is controversial (26).

The goal of surgical management is total cyst excision (total pericystectomy) without spillage and contamination of the field. Most of the cases reported in literature have been managed by open total or partial pericystectomy (27, 28).

Location within the narrow confines of the pelvis along with dense adhesions to surrounding structures may render dissection a formidable task. Partial pericystectomy may have to be resorted to in situations where separation from neighbouring structures is not possible.

With introduction of laparoscopic surgery, laparoscopic management of liver echinococcosis has gained ground producing encouraging results; however, there are only few reports of laparoscopically managed retrovesical cysts. Kumar et al. described two cases of retrovesical hydatid cysts which were managed laparoscopically with laparoscopic cyst aspiration, instillation and suction (29).

Shailesh Chandra et al. reported the first case of use of the da Vinci® surgical system for the management of retrovesical hydatid cyst. They claim that the enhanced magnification, 3-D vision and endowrist technology ensure accurate dissection with no collateral damage (30).

CONCLUSION

Pelvic echinococcosis is rare, with an incidence of 0.2 to 2.25%, retrovesical location is even rarer. Retrovesical hydatid cysts may have varied and non-specific presentation. Urine retention and obstructive uropathy are rare presentations of a retrovesical hydatid cyst especially in females. Ultrasonography and computed tomography are both excellent imaging modalities for the detection of hydatid cysts. The treatment of choice for retrovesical cyst is principally a careful and complete surgical excision which can be achieved by both open and laparoscopic surgery. Preoperative albendazole treatment decreases the viability of the cysts, but the duration of the treatment is controversial.

References
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Author Information

Raid Jawdat Saadeh, MBBS, Arab Board
Consultant General and Laparoscopic Surgeon, Department of General Surgery, Riyadh Care Hospital

Abbas A. R. Mohamed, MBBS, FRCSI, FICS
Consultant General and Laparoscopic Surgeon, Department of General Surgery, Riyadh Care Hospital