Mature Cystic Teratoma of the Left Ovary with Urinary Bladder Involvement: A Case Report

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Abstract

A 42-year-old woman presented with recurrent urinary tract infections and intermittent discharge from an abdominal cutaneous sinus after a cesarean section approximately ten years earlier. Ultrasound demonstrated a thick-walled, small-capacity bladder containing an echogenic lesion and a tract communicating with the anterior abdominal wall. Non-contrast CT showed an intravesical mass containing fat and calcification, a vesicocutaneous tract, bilateral hydroureteronephrosis and gas in the right renal parenchyma and collecting system. Non-contrast MRI demonstrated fat within the mass and loss of the fat plane between the left ovary and the bladder; the right ovary was seen separately. The patient left against medical advice and sought treatment at another hospital. The clinical account reports hysterectomy with bilateral salpingo-oophorectomy, mass resection and bladder wall repair, with histopathology reported as mature cystic teratoma of the left ovary. This case illustrates how complementary imaging can suggest an ovarian origin for a fat-containing intravesical lesion. Bladder involvement does not by itself establish malignant transformation.

Keywords: Ultrasonography; Magnetic resonance imaging; Mature cystic teratoma; Urinary bladder; Vesicocutaneous fistula

Introduction

Ovarian dermoid cysts are mature cystic teratomas: ovarian germ cell tumors containing differentiated tissues. Genetic investigations support an oocyte-related origin [1]. They should not be explained by ectodermal entrapment along embryonic closure lines, a mechanism associated with inclusion dermoid cysts at other sites. Uncomplicated ovarian mature cystic teratomas may be asymptomatic. Rupture or fistulous communication with adjacent organs, including the urinary bladder, is an uncommon complication [2, 3].

Case Report

A 42-year-old woman presented to the Department of Gynaecology at North Bengal Medical College and Hospital with recurrent urinary tract infections over several years. Approximately ten years earlier, she had undergone a cesarean section at a private hospital, followed by an abdominal abscess with a draining skin tract. She received conservative antibiotic treatment during a 20-day admission, but intermittent discharge recurred several times each year, for which she took over-the-counter antibiotics. At the current presentation, she had abdominal tenderness, fever of 101 °F (38.3 °C) and discharge from the abdominal sinus.

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Ultrasound and Pelvic CT

Bedside ultrasound showed a small-capacity bladder with thick, trabeculated walls and a fixed 35 × 37 mm echogenic intravesical lesion with central posterior acoustic shadowing. Reverberation artifacts and echogenic foci and strands were also present. A tract extended from the skin to the anterior bladder wall (Figure 1).

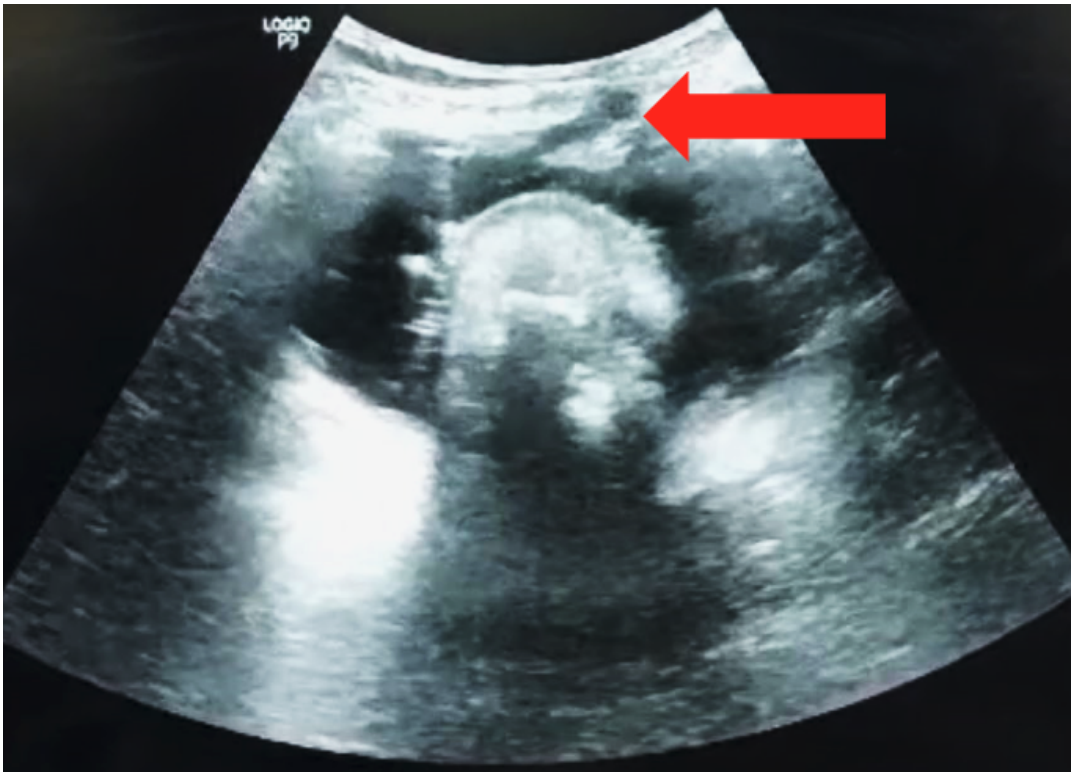


Figure 1. Ultrasound showing a thick-walled, small-capacity bladder with an echogenic intravesical lesion. The original red arrow identifies the tract extending from the anterior abdominal wall toward the bladder lumen.

Non-contrast CT of the urinary tract demonstrated a 38 × 39 × 40 mm intravesical lesion fixed to the posterior bladder wall. The lesion contained fat, with a reported average attenuation of −79 HU, and a 15 × 3 mm linear calcified component measuring +845 HU. Calcified strands and gas were present in the bladder lumen (Figure 2).

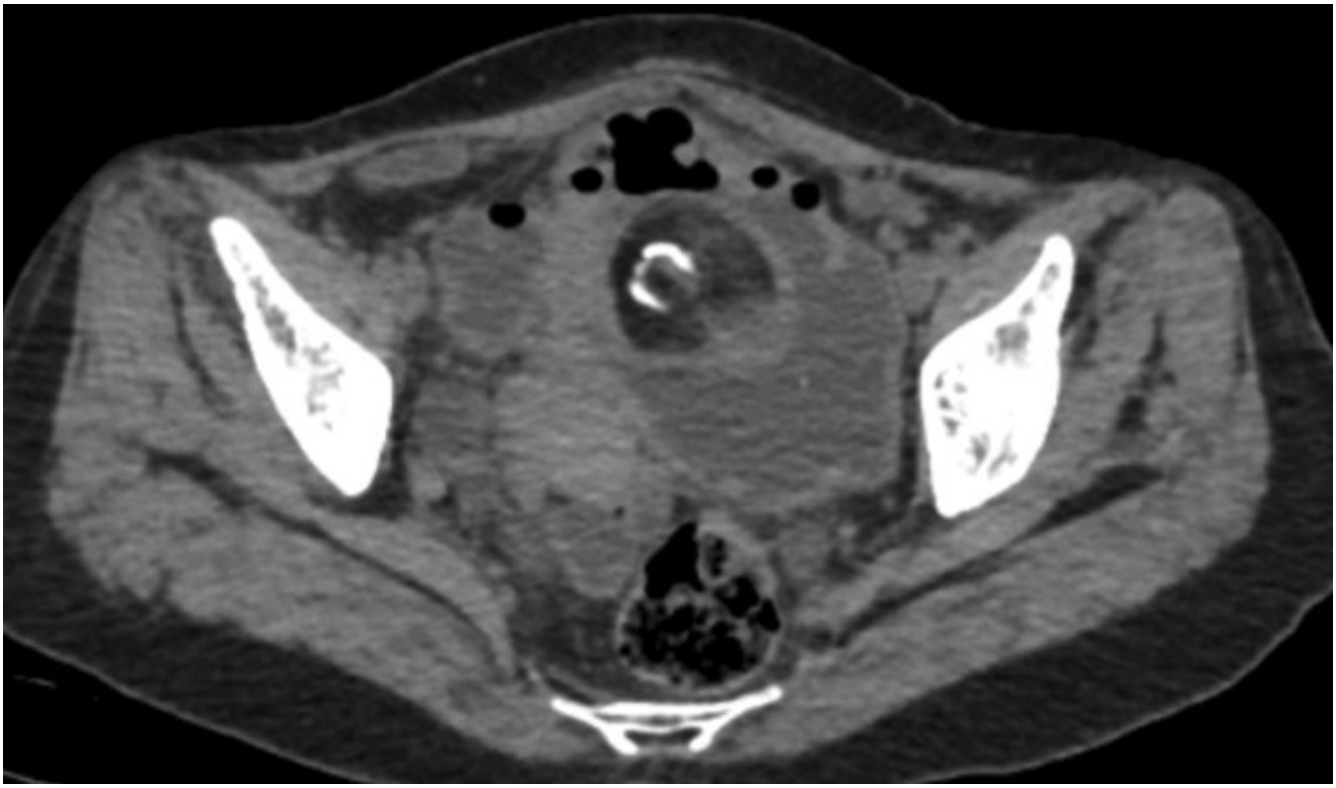


Figure 2. Non-contrast pelvic CT showing the fat-containing intravesical mass with calcification and gas in the bladder lumen.

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Upper Urinary Tract and MRI

CT also showed a 12 mm vesicocutaneous tract and conglomerated bowel loops overlying the bladder dome. Both kidneys were enlarged with reported grade 4 hydronephrosis and bilateral hydroureter. Right renal parenchymal and collecting-system gas was interpreted as emphysematous pyelonephritis with emphysematous pyelitis (Figure 3).

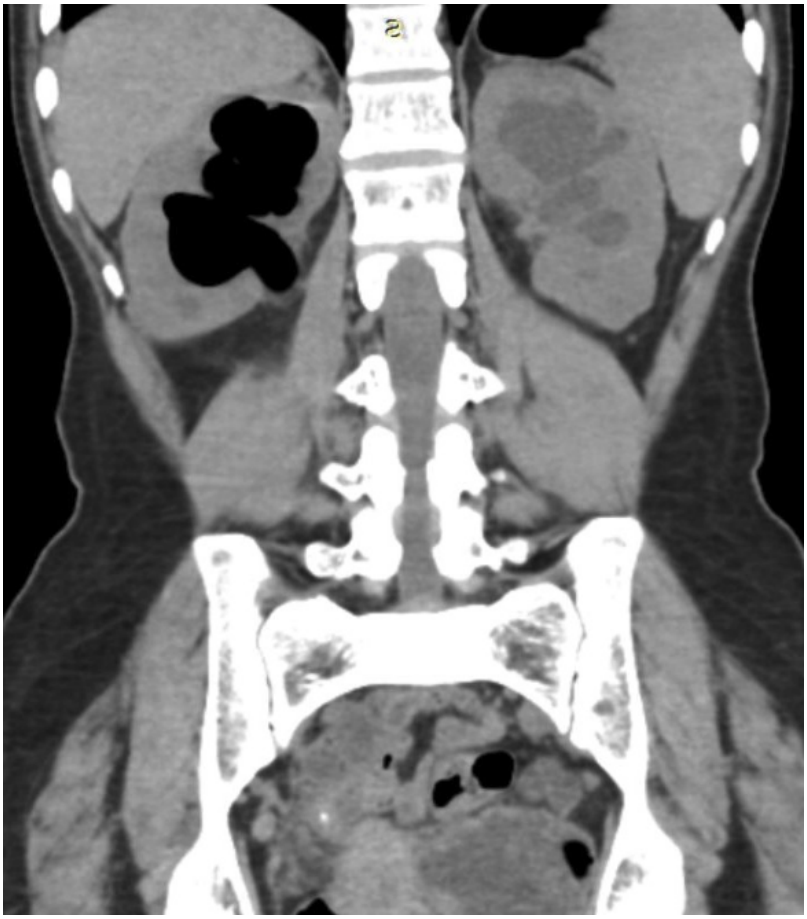


Figure 3. Coronal CT showing gas in the right renal parenchyma and collecting system, with bilateral hydronephrosis and hydroureter.

Because serum creatinine was elevated, MRI was performed without contrast. The intravesical lesion was hyperintense on T1- and T2-weighted images and lost signal with fat suppression. A central low-signal component corresponded to the calcified component on CT (Figures 4a, 4b and 5).



Figure 4. Non-contrast MRI: (a, left) T1-weighted and (b, right) T2-weighted images show high signal within the intravesical lesion. Signal suppression and the relationship to the ovaries are shown in Figure 5.

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Ovarian Relationship and Clinical Course

The left ovary was described as fixed to the bladder dome next to the intravesical lesion, with loss of the intervening fat plane and adjacent bladder-wall thickening. A 35 mm follicular cyst was also reported. The right ovary was seen separately (Figure 5). A provisional diagnosis of a left ovarian mature cystic teratoma involving the bladder wall and lumen was made, together with a vesicocutaneous fistula. Bilateral hydroureteronephrosis and right-sided emphysematous renal infection were also reported.

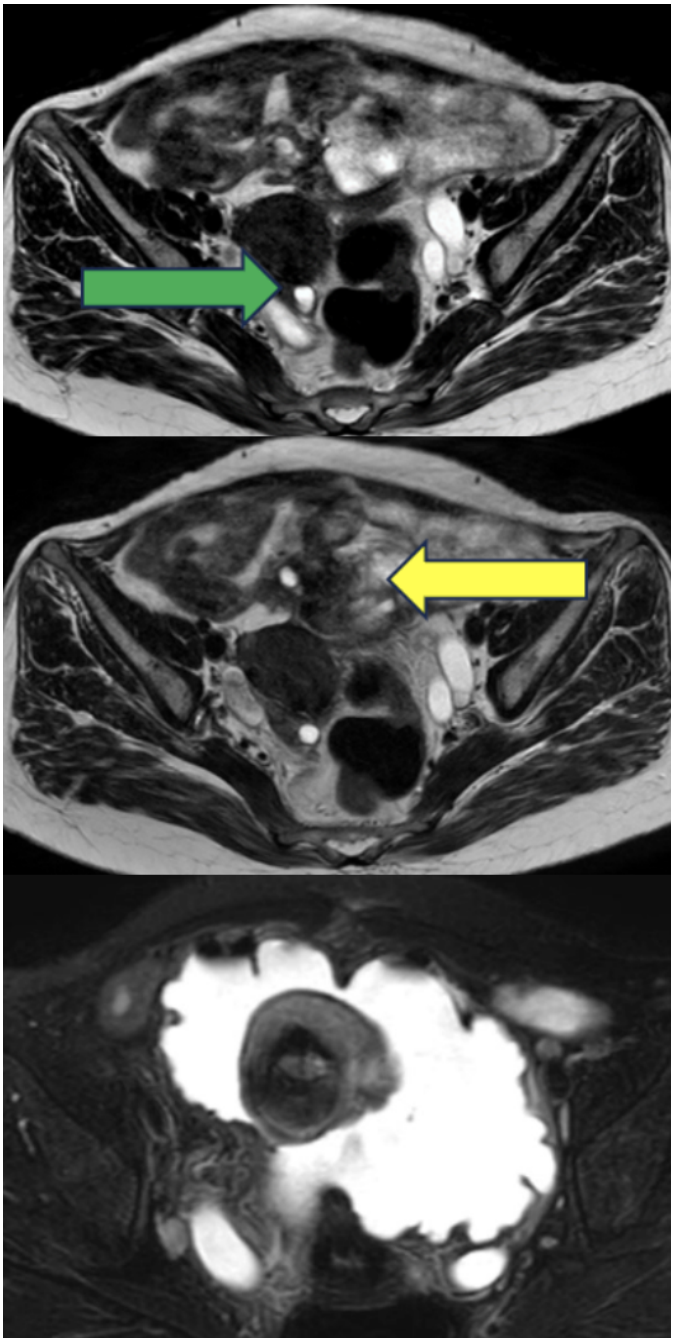


Figure 5. Non-contrast MRI showing the right ovary separately (green arrow, upper panel), the left ovary adjacent to the bladder dome (yellow arrow, middle panel), and suppression of fat signal in the intravesical lesion (lower panel). Original arrows and complete panels are retained.

The patient left against medical advice and sought treatment at a private hospital. She returned to the reporting institution one month later for follow-up. The clinical account reports total abdominal hysterectomy with bilateral salpingo-oophorectomy, resection of the mass and bladder wall repair. The reported histopathological diagnosis was mature cystic teratoma of the left ovary.

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Discussion

The fat-containing intravesical mass and its relationship to the left ovary suggested an ovarian mature cystic teratoma with bladder involvement. The right ovary was visualized separately. The left-sided origin is consistent with the histopathological diagnosis reported in the case account. The separate skin-to-bladder tract is described as a vesicocutaneous fistula; no additional tract or mechanism is assumed. Bladder involvement may occur in benign mature cystic teratomas [2, 3] and should not automatically be equated with malignant invasion. Malignant transformation is a separate pathological diagnosis, for which imaging may raise suspicion but cannot replace histology [4]. The previous cesarean section and recurrent sinus discharge form part of the history; this case does not establish that the operation caused the teratoma or its bladder involvement. No particular treatment response, postoperative recovery or long-term outcome is inferred.

Conclusion

A fat-containing intravesical lesion with calcification and continuity with an ovary should raise suspicion of an ovarian mature cystic teratoma with bladder involvement. Ultrasound, CT and MRI can help define the lesion and associated complications. Surgical and histopathological findings, as reported in this case, establish the diagnosis.

Declarations

Consent for publication: The author states that written informed consent was obtained and patient anonymity was ensured. The author reports that the study was conducted in accordance with the Declaration of Helsinki and applicable local and international standards.

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