

## Ovarian Dermoid Cyst Perforating Into the Urinary Bladder

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### ABSTRACT

Ovarian dermoid cysts are common lesions accounting for up to 40% of all ovarian neoplasms. Most of the cases are asymptomatic. Symptoms develop once complications set in. Invasion into adjacent viscera such as the rectum, the small bowel, the peritoneum, and the urinary bladder is extremely rare. We present a rare case of ovarian dermoid cyst perforating into the urinary bladder presenting with irritative lower urinary tract symptoms characterized by urgency, frequency, dysuria, poor urine stream, and the passage of hairs and seborrheic gravels through the urethra for last 7 years.

### CASE REPORT

A 42-year-old woman presented with a history of irritative lower urinary tract symptoms characterized by urgency, frequency, and dysuria, along with a poor urine stream for the last 7 years. She also had a history of passing crystalluria and tufts of hair. She had no history of hematuria and weight loss. Her physical examination and lab investigation were normal. Culture sensitivity of the urine revealed *E. Coli*. An ultrasonography revealed a 4.1 cm x 3.1 cm ill-defined echogenic mass in the urinary bladder lumen (Figure 1). The axial computed tomography (CT) scan of the urinary bladder revealed a mixed, attenuating, dumbbell-shaped mass having intraluminal and extraluminal components at the left anterosuperior region. There was calcification and punctuated fat in the intraluminal component of the mass and the extraluminal component adherent to the left ovary (Figure 2). The cystoscopy examination revealed a polypoidal growth at

the dome of the bladder covered with a whitish deposit and hairs (Figure 3). On exploration, the left ovary was connected to the growth at the dome of the bladder with a stalk (Figure 4). The bladder growth, along with the stalk and the left ovary, was excised in toto (Figure 5). Histopathological examination showed numerous hair follicles surrounded by fibrofatty tissue containing mature adipocytes along with the presence of skin adnexal structures (Figure 6). There were features of cystitis in the bladder wall. The postoperative period was uneventful. The patient voided with a good stream.

### DISCUSSION

A dermoid cyst of the ovary results from a differentiation into embryonic tissues and accounts for 40% of all ovarian neoplasms. They contain all layers of embryonic tissue, but ectodermal structures are predominant and often lined by the epidermis and contain skin appendages, teeth, sebaceous material, hairs, and nervous tissue. Uncomplicated ovarian dermoid cysts are

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Figure 1. A USG showing an ill-defined echogenic mass (4.1 cm x 3.1 cm) in the urinary bladder lumen.

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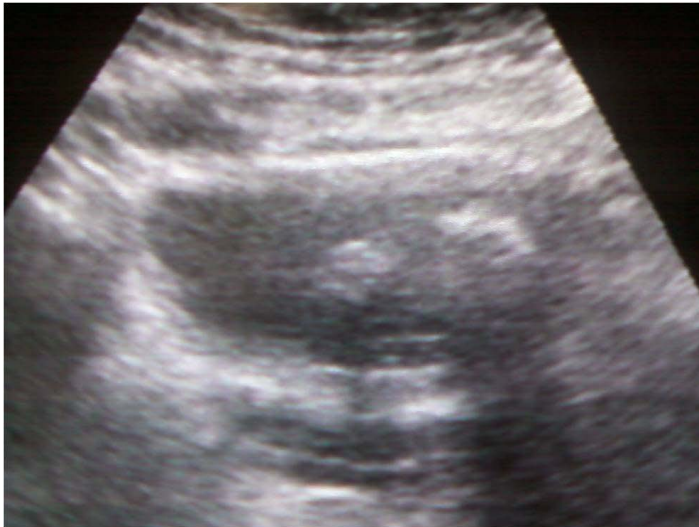
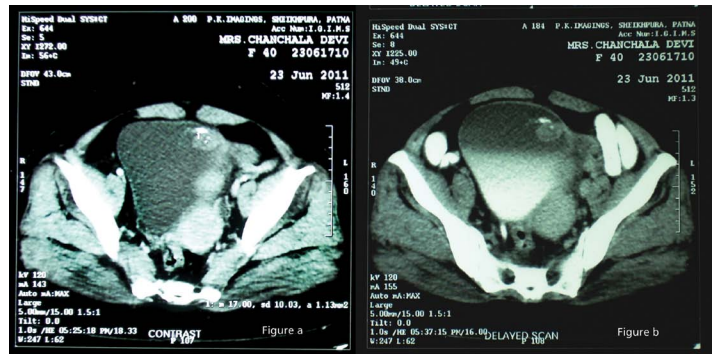


Figure 2. An axial CT scan of the urinary bladder revealing a mixed, attenuating dumbbell-shaped mass having intraluminal and extraluminal components at the left antero-superior region with calcification and punctuated fat.

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usually asymptomatic, and symptoms mostly appear after secondary complications develop. Complications include torsion (16%), rupture (1 to 4%), malignant transformation (1 to 2%), infection (1%), rupture into the peritoneum [9], invasion into the adjacent viscera, and autoimmune hemolytic anemia (< 1%) [1]. Of these, spontaneous rupture into the adjacent viscera is least common [2]. The bladder is the most common site of spontaneous perforation [3]. Presenting complaints are irritative lower urinary tract symptoms, pyuria, the passage of seborrhoeic gravels, and the passage of hairs (pilimiction). The passage of hairs is a pathognomonic sign [2].

Different etiologies have been proposed for fistula formation in dermoid cysts. Shiels et al. [4] reported an entero-dermoid fistula and suspected that a small leak from the cyst caused the dense adhesions with the bowel that resulted in fistula formation. Peterson et al. [5] proposed that torsion, trauma, infection, chronic pressure during labor, and malignant transformation could cause leakage and fistulization. Chronic leakage of the seborrhoeic material leading to inflammation and subsequent fistulization are the main factors in benign fistulization with adjacent viscera. In our case, compression on the bladder wall leading to ischemic focal wall necrosis and exposure to contents appears to be the cause of invasion and fistulization into the bladder.

Figure 3. Cystoscopy demonstrating polypoidal growth at the dome of the bladder covered with grains of whitish deposit and hairs.

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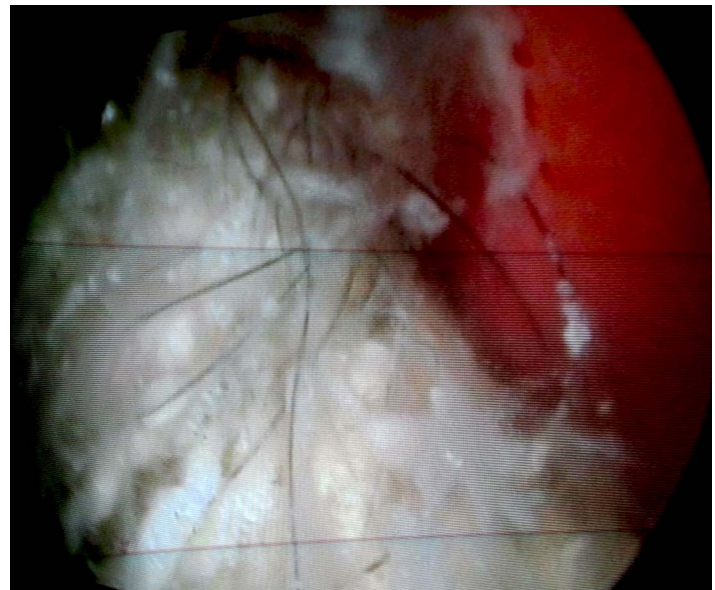




Figure 4. Perioperative findings: The left ovary connected to the growth at the dome of the bladder with a stalk.

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Figure 5. Excised bladder growth along with the stalk and the left ovary.

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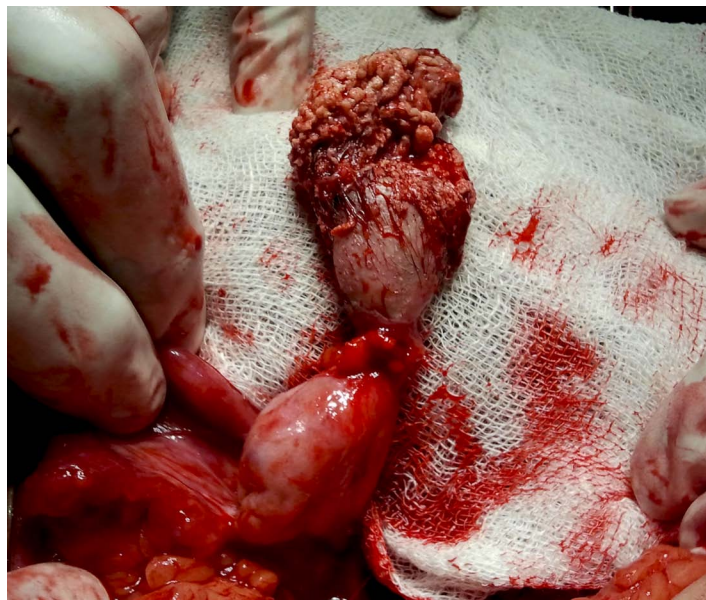
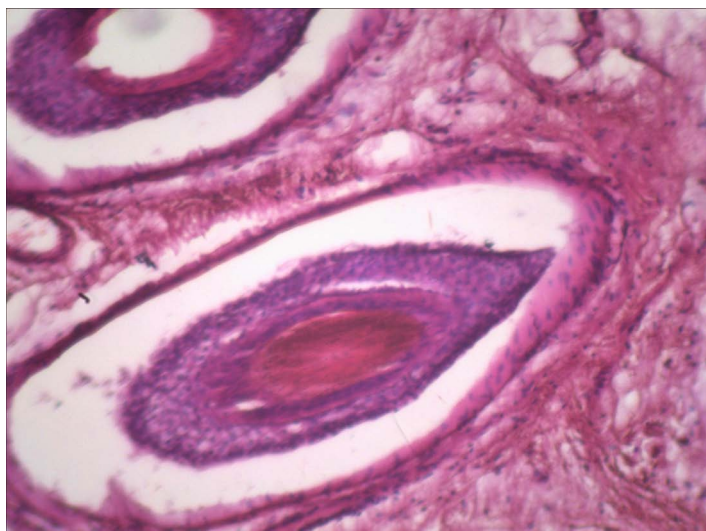


Figure 6. Histopathological examination showed numerous hair follicles surrounded by fibrofatty tissue containing mature adipocytes along with the presence of skin adnexal structures.

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In most of the series of dermoids perforating into the bladder, the diagnosis was established via cystoscopy and laparotomy [6-8]. On ultrasound imaging, a mature dermoid cyst appears as a thick-walled cystic mass with echogenic contents and calcification [12]. CT scan is the preferred diagnostic as it clearly demonstrates fats with calcification [1]. The diagnosis of a mature cystic teratoma using CT imaging is straightforward because this modality is more sensitive for fat [7]. Using CT, fat attenuation (sebaceous material) within a cyst, with or without calcification in the wall, is diagnostic for mature cystic teratoma [11]. In our case, mixed attenuation masses with extension into the bladder with calcification and punctuated fat-attenuation values highly suggests dermoid cysts. The invasion into the bladder may either be seen clearly as a fistula or inferred from the indirect sign of fat and urine levels.

The definitive treatment is excision of the dermoid cyst along with partial cystectomy. In rare cases of primary teratoma of the bladder, transurethral resection is adequate in most of the cases. Histopathological examination is essential to exclude malignant transformation. A high index of suspicion along with the help of imaging modalities are needed to arrive at the correct preoperative diagnosis.

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