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# A Case of Urinary Bladder Dermoid

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***Authors' contributions***

*This work was carried out in collaboration between both authors. All authors read and approved the final manuscript.*

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***Case study***

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## ABSTRACT

Dermoid cysts can be found at various sites, most common being the ovaries. However, the occurrence of dermoid cysts in the urinary bladder is an extremely rare entity. We report the case of a 54 years female, who came with complaints of white discharge with urine associated with lower abdominal lump and pain. Thorough workup was done but a definitive diagnosis could not be made. Cystoscopy guided bladder diverticulum drainage was done but no improvement was seen. Intraoperatively a mass was seen arising from the urinary bladder amidst a lot of adhesions and pus. Mass was excised and bladder defect was repaired primarily. The specimen turned out to be a dermoid cyst arising from the urinary bladder. The patient is now on followup and has no symptoms. The rarity of such a disease makes the case report worthwhile to be published.

*Keywords: Urinary Bladder; Dermoid cysts; ovarian teratomas; radical surgery*

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## 1. INTRODUCTION

The term Teratomas comprises many tumors, the most common being mature cystic teratoma, also known as a dermoid cyst. It usually consists of skin and sweat glands, while others contain hair, sebum, blood, fat, bone, nails, teeth, eyes, cartilage, and thyroid tissue [1]. Dermoid cysts can be found at various sites, the most common being the ovaries. However, the occurrence of dermoid cysts in the urinary bladder is an extremely rare entity.

The first case of urinary bladder teratoma was reported by Marsden *et al*. [2]. Since then, only a handful of such occurrences have been reported. Because of the rarity of such an occurrence, and the dubious presentation, we report a case of a dermoid cyst of the urinary bladder and describe the findings and management of the same, signifying a good prognosis.

## 2. CASE PROPER

A 54 years old female presented with a lump in her lower abdomen and recurrent episodes of whitish flaky discharge in urine since 5 years. This was associated with intermittent lower abdominal pain for the same duration. She had recurrent episodes of urinary tract infections for the last 4 years. The patient had visited multiple physicians for the past 5 years. She was prescribed multiple antibiotics and other medications, but none of them gave her long-term relief. She had a history of a laparotomy for lower abdominal pain in 1998 but no pertaining documents whatsoever were available. She was a known case of bronchiectasis but took no treatment for it. She had no other comorbidities, allergies, or addictions.

On examination the vitals were normal. Her respiratory examination revealed wheeze in bilateral basal lung regions. The abdomen was soft and showed a midline lower abdominal scar with mild tenderness in the lower abdomen. There was a solitary 10 × 8 cm intraperitoneal midline lump in the lower abdomen which was firm, mildly tender with a smooth surface, and mobile side to side. The inferior margin was not palpable. Other systemic examinations were normal.

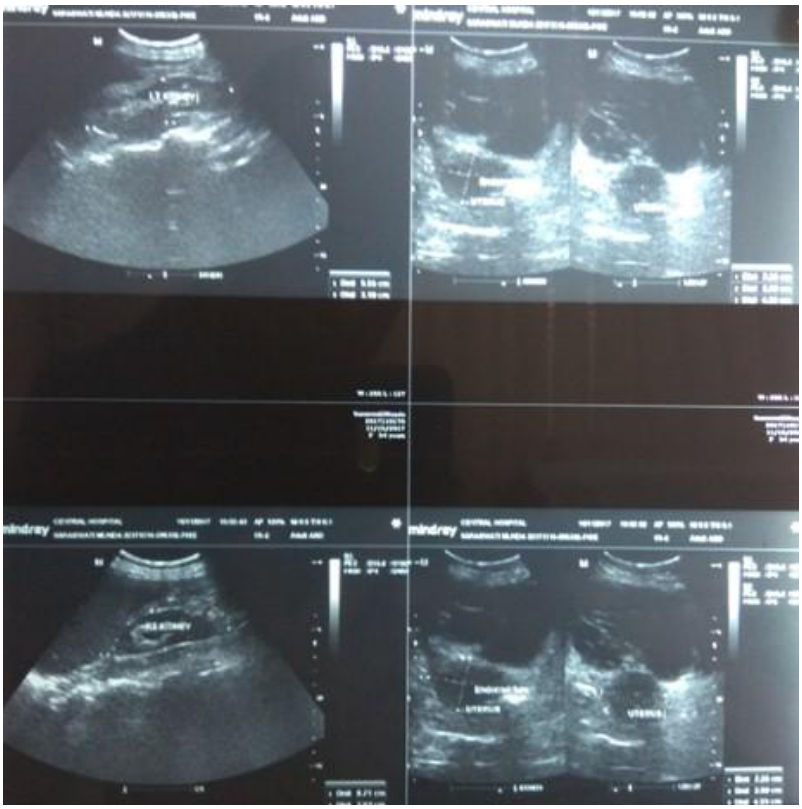
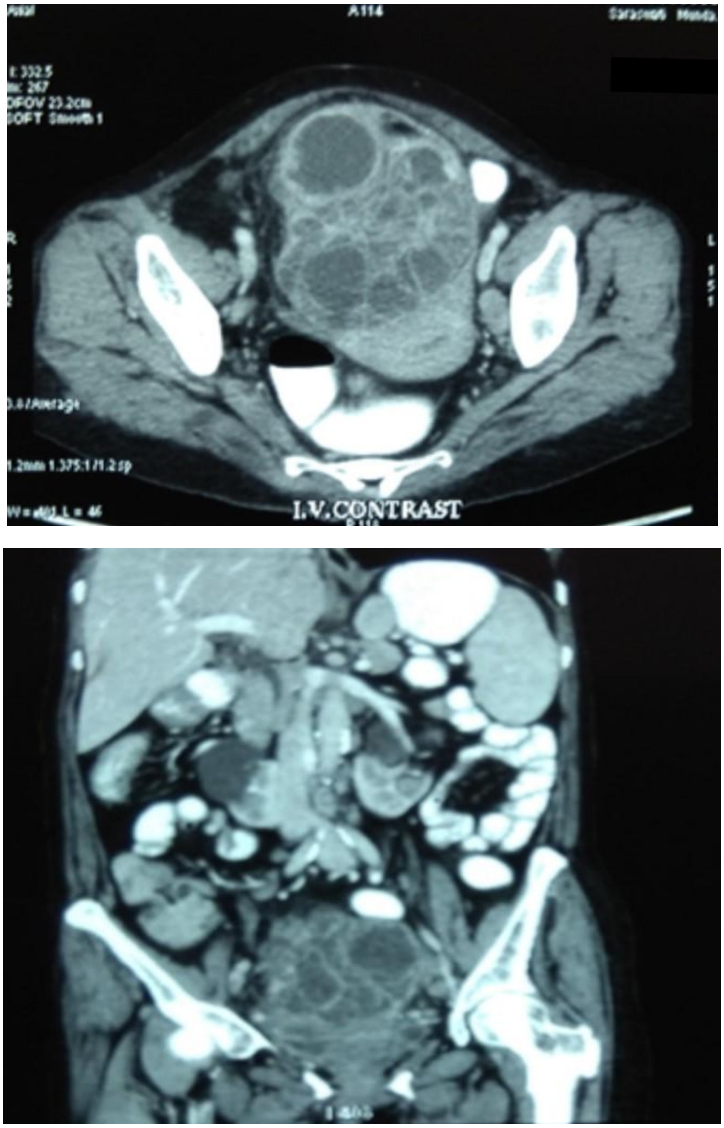


**Fig. 1. USG Abdomen showing complex bladder mass**

The patient was then thoroughly investigated. Routine blood investigations were essentially normal. Urine was sent for examination, which revealed numerous pus cells with scanty RBC. There was no albumin or glucose. The culture showed growth of E. coli with low colony-forming units. However, she was started on antibiotics based on the sensitivity report.

Ultrasound of the abdomen showed a solitary heterogeneous complex echogenic lesion, 10 × 8 × 8 cm, with few thin-walled cystic areas, adjacent to the uterus and urinary bladder with mild right hydronephrosis. There was no organomegaly or any other abnormalities.

A contrast-enhanced CT scan was done for better delineation which showed a non-enhancing large complex cystic midline abdominopelvic mass, 9.7 × 8.0 × 10.5 cm in size, communicating with an ileal loop, abutting the uterus and inseparable from the vesical wall. Ovaries were not seen separately, suggesting that perhaps the previous laparotomy was related to some ovarian pathology. The lesion showed entrapped air anteriorly, indenting the superior vesical wall and abutting ileal loops. Additionally, a horseshoe kidney was present. The CECT suggested that the mass was arising from the urinary bladder, but could not give any provisional diagnosis.




**Figs. 2 and 3. CECT showing the dermoid cyst**

HRCT Thorax was done to assess bronchiectasis. It showed extensive clusters of bronchiectasis in the right lower lobe of the lung with air-fluid levels in some of them. Pulmonary function test showed a moderately restrictive and moderately obstructive pattern, lung age-99 years.

A colonoscopy was done to assess any lower GI extensions, but there were no findings as such. Serum CEA and Serum CA-125 were done to point us towards any malignancies, but they were normal.

Cystoscopy was also done to assess the intravesical condition. It revealed an opening of a diverticulum in the posterosuperior part of the urinary bladder with organized pus inside it. Intra-vesical drainage of the abscess was done. The patient seemed to get better for a few days post drainage, but the symptoms recurred. Also, the abdominal lump was not resolving. So it was planned to take her for a laparotomy. Pre-operatively double J stenting of bilateral ureters was done.

Laparotomy was done via midline lower abdominal. Extensive adhesions were seen between the anterior abdominal wall, uterus, and urinary bladder. Careful adhesiolysis was done. A urinary bladder *'diverticulum'* was visualized with multiple abscesses between bladder and uterus found. A large amount of pus was drained. Some small cysts were also found in proximity to the bladder which were taken out. The suspected *'diverticulum'* was excised and the defect was primarily closed in two layers. An omental patch was given over it. The abdomen was then closed. The post-op period was uneventful and the patient recovered well.

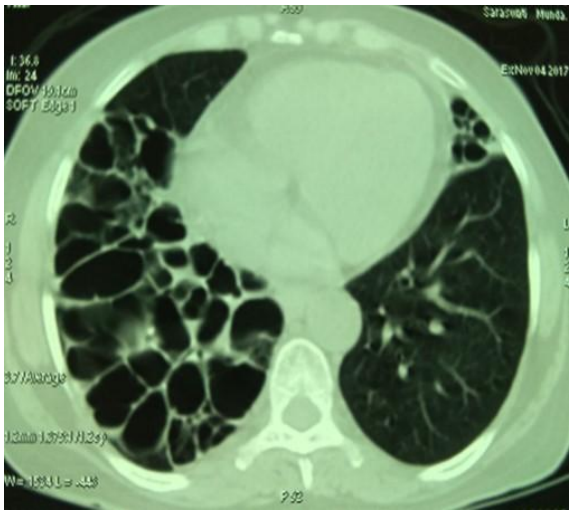


**Fig. 4. HRCT Thorax showing bronchiectasis**

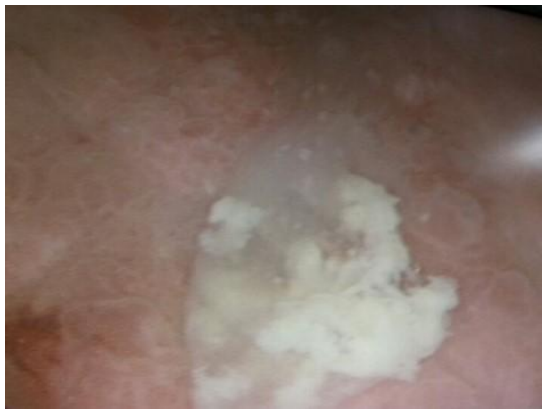


**Fig. 5. Cystoscopy showing Urinary Bladder diverticular opening with white flaky discharge**

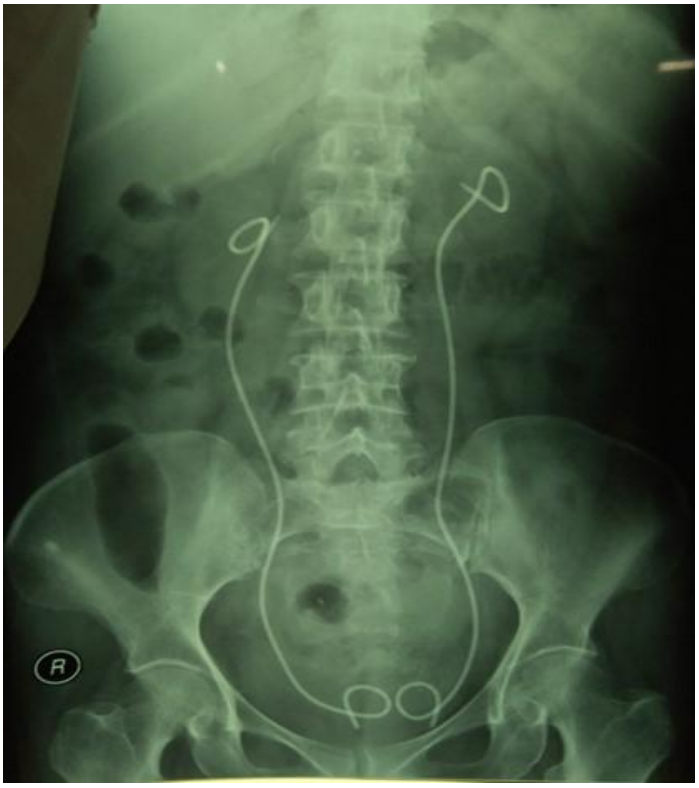


**Fig. 6. Preoperative DJ stenting of ureters done**

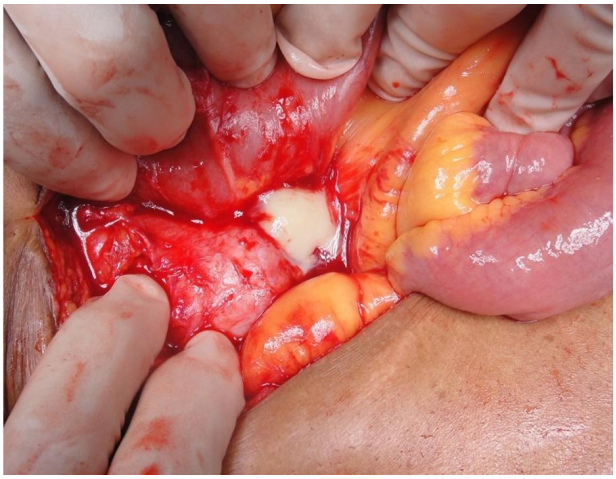


**Fig. 7. Pus seen in the pockets between the uterus and urinary bladder**

The histopathology of the specimen surprised us by revealing a dermoid cyst of the urinary bladder with some cartilaginous and skin components within it. No evidence of malignant foci was present.

The patient is on follow-up and has no symptoms or complaints whatsoever.

## 3. DISCUSSION

Dermoid cysts, or cystic teratomas, are encapsulated tumors that are composed of well-differentiated derivations from at least two of the three germ layers (i.e., ectoderm, mesoderm, and endoderm). The germinal elements may be in the form of hair follicles, sweat glands, and

pockets of serum, fat, blood, bone, nail, teeth, cartilage, and thyroid tissue [3].

Midline dermoid cysts are thought to result from abnormal germ cells when the neural tube closes around the 3rd to 5th week of gestation [4,5]. Dermoid cysts consist of one or more types of cells originating from 3 germ layers. Histologically, they may contain mature or immature tissues and occasionally malignant elements. They commonly occur beside the areas of embryogenic fusion lines, in the midline and paraxial organs. A dermoid cyst in the urinary bladder is an extremely rare 'tumor' [6].

Urinary bladder dermoids, the few that have been documented, usually contain hair and calcified components [7]. It is very rare to find cartilage and skin in the bladder dermoid. They may also be associated with bladder diverticuli and vesical stones [8], as was in our case.

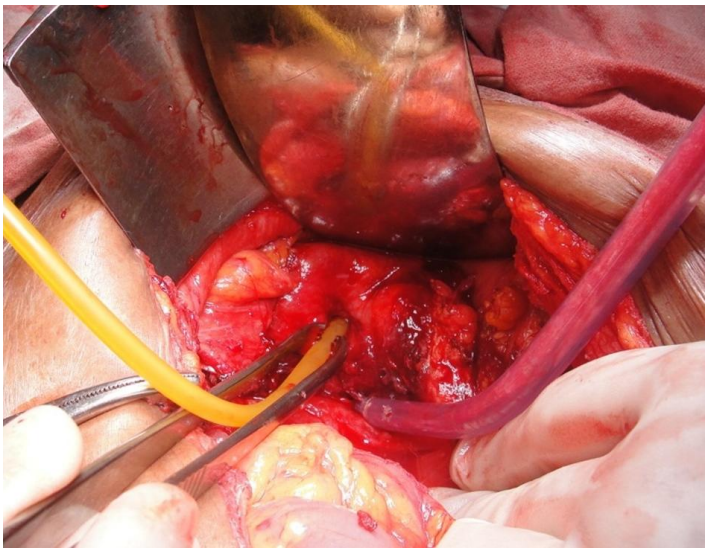


**Fig. 8. 1st glimpse of the dermoid cyst intraoperatively**

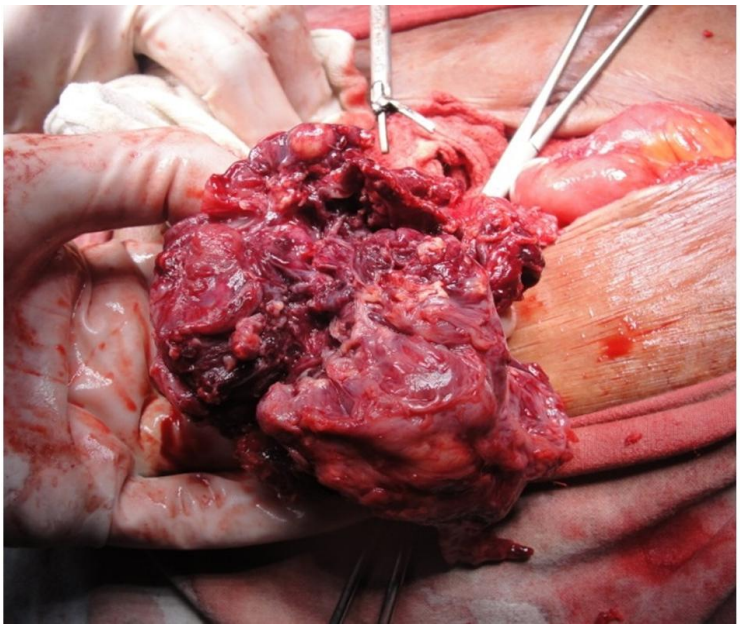


**Fig. 9. Dermoid cyst after dissection arising from the urinary bladder**

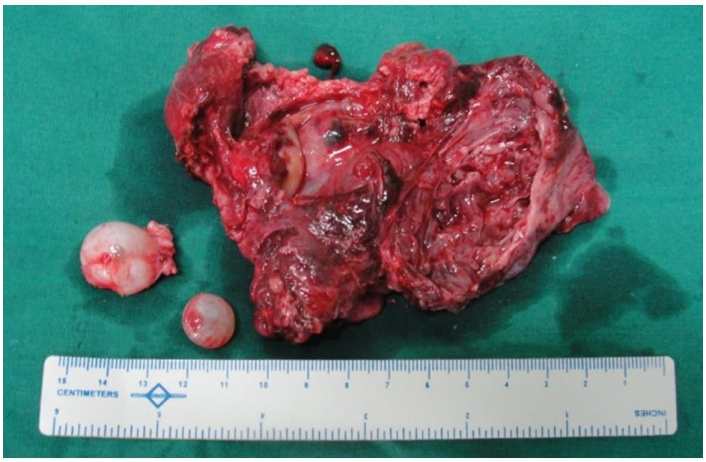


**Fig. 10. Postoperative specimen**

The first case of urinary bladder teratoma was reported by Marsden *et al*. in 1981 who studied the dataset of 137 children (age 0–14 years) from the Manchester University Children's Tumour Registry (MCTR) [2]. However, the essential nature of a teratoma was not clearly established in this review, and a broad term of "germ cell tumors" was used.

The first case of urinary bladder teratoma from Asia was described by Misra *et al*. in 1997 in a young Indian girl with a partially mobile mass on per rectal examination. The mass had tufts of hair on cystoscopic examination; a provisional diagnosis of bladder teratoma was corroborated by histopathological examination and the mass was resected surgically [9].

Agrawal *et al*. described another case in a 29-year-old female with a yellowish-to-grayish white bladder mass on cystoscopy with multiple hair on its surface. Transurethral resection of the mass was done, and a diagnosis of mature teratoma of the urinary bladder was confirmed [10].

Most of the documented bladder teratomas present with recurrent urinary tract infections. They may or may not have a lower abdominal mass. Our patient had both, but such is the rarity of this disease that one does not expect a dermoid tumor in the differential diagnosis. A tumor arising from the bladder but not causing any hematuria is again, quite rare, as was in our case.

It is frequently diagnosed on ultrasonography as an echogenic mass that shows a posterior acoustic shadowing owing to sebaceous material and hair in the cyst cavity or a calcific component within a cyst. A mural nodule corresponding to a mucus plug (Rokitansky nodule) may be demonstrated. In a few cases, multiple mesh-like hair in the cyst appears in a dot-dash pattern. Bladder dermoids show the same pattern on ultrasound as ovarian dermoid. CT scan is characteristic and has high sensitivity in demonstrating fat (areas of very low attenuation) and calcifications within a mass lesion. A Rokitansky protuberance or few tufts of hair may be identified [11].

The treatment of choice is transurethral resection of mass [9], but surgical excision of the lesion with a rim of the normal bladder mucosa and bladder repair is the definitive treatment [11,12]. It was not possible to resect out the bladder diverticulum by cystoscopy, so an open approach was taken for our case. One can or cannot put an omental patch on top of the repair. The catch is that the dermoid can mimic a bladder stone both clinically and radiologically. Whenever there is doubt, especially when the imaging findings suggest cystic/calcified mass confined to the bladder wall, bladder dermoid should be considered in the differentials. It is sought to share that one should consider a bladder dermoid cyst as one of the differential diagnoses of a urinary bladder mass, although rare, and if found, then the surgeon can rest assure that the lesion is benign and no radical surgery is warranted.

## 4. CONCLUSION

Urinary bladder dermoid tumors are very rare in incidence. Only a few cases have been reported

in English literature. We endeavor to highlight this case to show the presentation of such a disease and the management protocol for the same. One must keep this as a differential diagnosis in any case of bladder tumor or mass which has a dubious presentation. Also, no radical surgery is warranted in these cases.

## CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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