Ovarian teratoma with recurrent urinary retention is misdiagnosed as bladder disease: A rare case report and review of the literature

Ning Wang,1* Kai Wang,2* Xi Xie,3* Lin Cao,4 Huadong He3 and Ning Li3

Abstract
We present a 22-year-old ovarian teratoma female patient with recurrent urinary retention. It was first misdiagnosed as bladder disease and the treatment is catheterization. During the follow-up, urinary abdominopelvic examination showed a heterogeneous hypoechoic zone of 66 mm × 25 mm on the upper wall of the bladder with 1125 mL residual urine, so the patient was reevaluated. Vaginal ultrasound showed no obvious abnormalities in the uterus and accessories. In the further evaluation, urinary computed tomography (CT) revealed a visible huge space-occupying lesions in the pelvis and lower abdomen, was considered a benign lesion, and it might be the accessories teratoma. Abdominal magnetic resonance imaging (MRI) revealed a visible huge cystic shadow in the pelvis and lower abdomen. Post-operative pathology confirmed the presence of pelvic mature cystic teratoma and mature neural tissue. Post-operative follow-up for 1 year, the patient had no symptoms such as abdominal pain, dysuria, or urinary retention. The clinical manifestations of ovarian teratoma are complex, but imaging examinations (e.g. CT, MRI, and ultrasound) are characteristic and valuable for clinical diagnosis.

Keywords
bladder disease, imaging examinations, misdiagnose, ovarian teratoma, urinary retention

Date received: 16 January 2019; accepted: 8 April 2019

Introduction
Ovarian teratoma is the most prevalent germ cell neoplasm in women. The cellular components of this lesion are derived from two or more embryonic tissues. It is a benign neoplasm, accounting for 13%–17% of all ovarian tumors. Mature teratomas are the most common type, accounting for approximately 97% of the total cases of ovarian teratomas. The disease occurs in patients of almost any age,
although the peak incidence is reported in women aged 20–40 years. Most ovarian teratomas occur on one side which accounts for approximately 95%. This disease, which lacks specific clinical manifestations, usually occurs in women of childbearing age, while its pathogenesis is still unclear. Imaging studies have shown that the complex content of tumors often leads to difficult diagnosis. At present, the relevant literature mainly reports the imaging diagnosis of ovarian teratoma. The case of ovarian teratoma with recurrent urinary retention has been misdiagnosed as bladder disease, and there is no in-depth study of the clinical features, imaging diagnosis, treatment, and prognosis of the disease. We presented one case of clinical data on pathologically confirmed ovarian teratoma with lower urinary tract symptoms, and further investigated the clinical and imaging diagnostic value of ovarian teratoma with lower urinary tract symptoms.

Case description

A 22-year-old female patient presented with symptoms of intermittent lower abdominal pain for more than half a year, accompanied by frequent urination, urgency, dysuria, aggravating 6 h. The patient suffered from intermittent and tolerable pain in the lower abdomen with no obvious cause half a year ago. The pain lasted for about half an hour and relieved by itself. Bloating, intermittent urinary frequency (8–10 times a day, 2–4 times a night), and urgency were also observed. The abdominal ultrasound revealed urinary retention, and indwelling catheterization was performed. Since then, she received indwelling catheterization therapy several times. The lower abdominal symptom was aggravated at 6 h ago. There was no significant relief after rest, accompanied by difficulty in urinating. Abdominopelvic ultrasound examination showed a heterogeneous hypoechoic area of 66 mm × 25 mm on the upper wall of the bladder and a small amount of strong echoes in the bladder, and the bottom of this area was wide and connected to the bladder wall. There was 1125 mL of residual urine in the bladder (Figure 1). Physical examination revealed deep tenderness around the right lower abdomen and around the umbilicus with no rebound tenderness or muscular tension. The sound of percussion on the bladder was positive for dull sounds. Indwelling catheterization was performed, and about 1000 mL urine was intermittently discharged. Vaginal ultrasound showed no obvious abnormalities in the uterus and accessories. Urodynamic examination revealed no significant abnormalities. An additional ultrasound examination revealed no significant residual urine. Urinary computed tomography (CT) revealed a visible huge space-occupying lesions in the pelvis and lower abdomen, was considered a benign lesion, and it might be the accessories teratoma. Abdominal magnetic resonance imaging (MRI) prompts the following: visible huge cystic shadow in the pelvis and lower abdomen; T2-weighted imaging and fat-suppressed T2-weighted MR image show high-signal intensity, low-signal intensity within/opposed phase, low signal with fat-suppressed T1WI, low signal such as diffusion-weighted imaging (DWI), high signal such as apparent diffusion coefficient (ADC), clear boundary, upper and lower diameters of 181.7 mm, left and right diameters of 155.4 mm, anteroposterior diameter of 78.5 mm, and a cystic short T2WI low-signal shadow can be seen in the upper front
edge of the fat-suppressed imaging and shows visible separation; T2WI imaging shows high-signal intensity, high signal within/opposed phase, and a little low signal in the local; and T1WI fat-suppressed imaging shows extreme low-signal intensity, as well as DWI, and mixed low signal such as ADC. The accommodating area on the right side of the attachment has a clear edge (Figure 2).

Laparoscopic pelvic mass resection was performed under general anesthesia. The tumor was about 20 cm × 20 cm in size and was located in the pelvic cavity. The tumor adhered to the left uterine round ligament and ovary, and it was completely removed after separation. Post-operative pathological findings suggested pelvic mature cystic teratoma and mature neural tissue (Figure 3). Post-operative follow-up for 1 year, the patient had no symptoms such as abdominal pain, dysuria, and urinary retention. The patient had signed informed consent to participate in the study.

Discussion and review of the literature
Most of the patients with teratoma do not have specific clinical manifestations. A small number of patients may have abdominal pain due to the growth of one side of the tumor. There may be complications such as tumor rupture, pedicle torsion and infection, or even acute abdominal syndrome.3–5 The clinical manifestations of this patient were repeated lower abdominal pain with dysuria, intermittent urinary excretion for more than half a year, no obvious constipation, no perineum and lower extremity numbness, and no history of trauma. However, the patient was an adult in this case, and there has been no similar literature
reported in the past. Combined with the clinical characteristics of this patient, the reasons for the lower urinary tract symptoms may be as follows: relatively large teratoma compressed the bladder neck and caused bladder spasm, leading to frequent symptoms such as frequent urination. A long-term compression of the bladder neck results in edema, leading to dysuria or even urinary retention. It is also possible that the ovarian tumors compress the pelvic floor nerves and cause urinary dysfunction or excretory disorder. Ovarian teratoma in juvenile female patients with lower urinary tract symptoms such as dysuria, urinary retention may result from the ovarian tumor of the child is large and active, compressing the bladder or rectum and causing dysuria and constipation.\(^6\)–\(^9\) Surgical resection is an effective method for the treatment of ovarian teratoma and can relieve abdominal pain and urinary tract obstruction. When women exhibit acute urinary retention with or without acute abdomen symptoms, incorporate gynecological disorders such as pelvic teratoma should be considered. Imaging examination is recommended to reduce the rate of clinical misdiagnosis.

**Declaration of conflicting interests**
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**
The author(s) received no financial support for the research, authorship, and/or publication of this article.

**ORCID iD**
Ning Wang https://orcid.org/0000-0002-4389-2796
References

1. Chefdeville A, Treilleux I, Mayeur ME et al. (2019) Immunopathological characterization of ovarian teratomas associated with anti-N-methyl-D-aspartate receptor encephalitis. *Acta Neuropathologica Communications* 7(1): 38.

2. Poncelet E, Delpierre C, Kerdraon O et al. (2013) Value of dynamic contrast-enhanced MRI for tissue characterization of ovarian teratomas: Correlation with histopathology. *Clinical Radiology* 68(9): 909–916.

3. Binder Z, Iwata K, Mojica M et al. (2015) Acute urinary retention caused by an ovarian teratoma: A unique pediatric presentation and review. *The Journal of Emergency Medicine* 49(5): e139–e142.

4. Yiee JH, Betts J and Baskin LS (2011) Ovarian pathology for the pediatric urologist. *Urology* 77(6): 1455–1459.

5. Takagi H, Ichigo S, Murase T et al. (2012) Early diagnosis of malignant-transformed ovarian mature cystic teratoma: Fat-suppressed MRI findings. *Journal of Gynecologic Oncology* 23(2): 125–128.

6. Asgari SA, Mansour Ghanaie M, Simforoosh N et al. (2005) Acute urinary retention in children. *Urology Journal* 2(1): 23–27.

7. Pascual MA, Graupera B, Pedrero C et al. (2017) Long-term results for expectant management of ultrasonographically diagnosed benign ovarian teratomas. *Obstetrics and Gynecology* 130(6): 1244–1250.

8. Dhingra KK, Jain P, Garg A et al. (2009) Coexistent struma ovarii and serous cystadenofibroma in the same ovary. *International Journal of Gynecological Pathology* 28(3): 231–233.

9. Hori M, Kim T, Onishi H et al. (2012) Ovarian masses: MR imaging with T1-weighted 3-dimensional gradient-echo IDEAL water-fat separation sequence at 3T. *Magnetic Resonance in Medical Sciences* 11(2): 117–127.