

# Retroperitoneal Dermoid Cyst Between the Rectum and Vagina: A Case Report

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## ABSTRACT

**Background & Objective:** Mature cystic teratomas are rare neoplasms and consist of at least two to three embryonic layers. While these tumors are most commonly seen in the testes and ovaries, they have been reported elsewhere.

**Case Report:** A 22-year-old female patient referred to Mehr Hospital in Mashhad with symptoms of pelvic pain, tympanites, altered bowel habits, nausea, and vomiting. According to the performed examinations and evaluations, a mass of 37 × 20 mm was found in the retroperitoneum between the vagina and rectum. The patient underwent laparoscopic surgery and the cyst was completely resected. The patient was discharged a day after the surgery and no surgical complications were reported in conducted follow-ups. The pathologic finding also reported a dermoid cyst.

**Conclusion:** Resection surgery is the mainstay in the treatment of mature retroperitoneal teratomas. Although tumor characteristics can be diagnosed preoperatively by imaging modalities, a definitive diagnosis can only be made by histologic evaluations.

**Keywords:** Dermoid cyst, Retroperitoneum, Teratoma

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## Introduction

Mature cystic teratomas, also known as dermoid cysts, are neoplasms composed of at least two to three embryonic layers (ectoderm, mesoderm, or endoderm). Mature teratomas are rare neoplasms in which parenchymal tissue is well discernable (1-3). While these tumors are most commonly seen in the testes and ovaries, they have also been reported elsewhere, including intracranial, cervical, mediastinal, retroperitoneal, and sacrococcygeal regions (4-6). Metastasis of gland malignancies to the retroperitoneum is the cause of many retroperitoneal neoplasms; however, primary retroperitoneal neoplasms account for only 0.1% to 0.3% of all tumors, and 1% to 11% of them are teratomas (1). In children, the most prevalent retroperitoneal tumors are neuroblastoma and Wilms' tumor (7). Primary retroperitoneal teratomas are characterized by a lack of attachment to other organs, such as the kidneys, adrenal glands, and pancreas. The cases are usually reported in infants or young women.

The most common sites are the sacrococcygeal region and the upper left quadrant in infants and adults, respectively (1,8). Studies have indicated that surgery is the best treatment for dermoid cysts (9). Since the Retroperitoneal teratomas are very rare in adults and only a few cases have been reported, this study aimed to present a rare case of a retroperitoneal dermoid cyst between the rectum and vagina in a 22-year-old woman.

## Case Report

The patient was a 22-year-old woman who referred to Mehr Hospital in Mashhad with symptoms of pelvic pain, tympanites, altered bowel habits, nausea, and vomiting. She had a history of laparoscopic surgery performed for simple ovarian cyst resection. The patient's medical record was reviewed after obtaining her consent to report the case. All blood tests, including

CBC diff, coagulation tests, blood biochemical tests, and urine analysis, were normal.

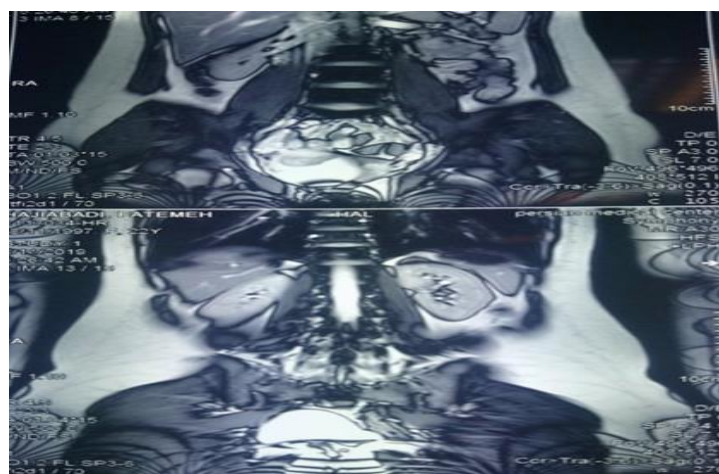
The ultrasound findings were as follows:

The uterus was observed with normal echoic dimensions and the thickness of the two endometrial layers was 17mm. An echo-free focal point was seen with a primary pregnancy sac in the fundal region of

the uterus with a diameter of 6.5 mm. A 50 × 90 mm cystic focal point with internal echoes and a 37 × 20 mm internal echogenic component from the right adnexal part extending to the posterior part of the uterus at posterior cul-de-sac was observed, appearance of which was most in favor of dermoid cyst ([Figure 1](#)). Another diagnostic method was performing an MRI for this patient ([Figure 2](#)) (10).



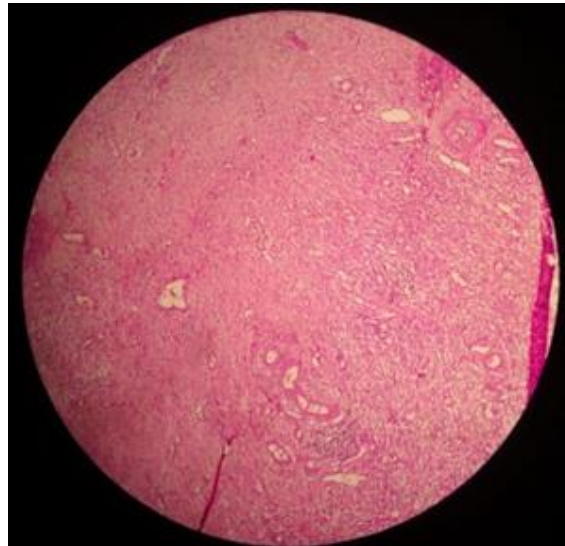
**Figure 1.** The ultrasound view of the dermoid cyst observed in the retroperitoneal region between the rectum and vagina



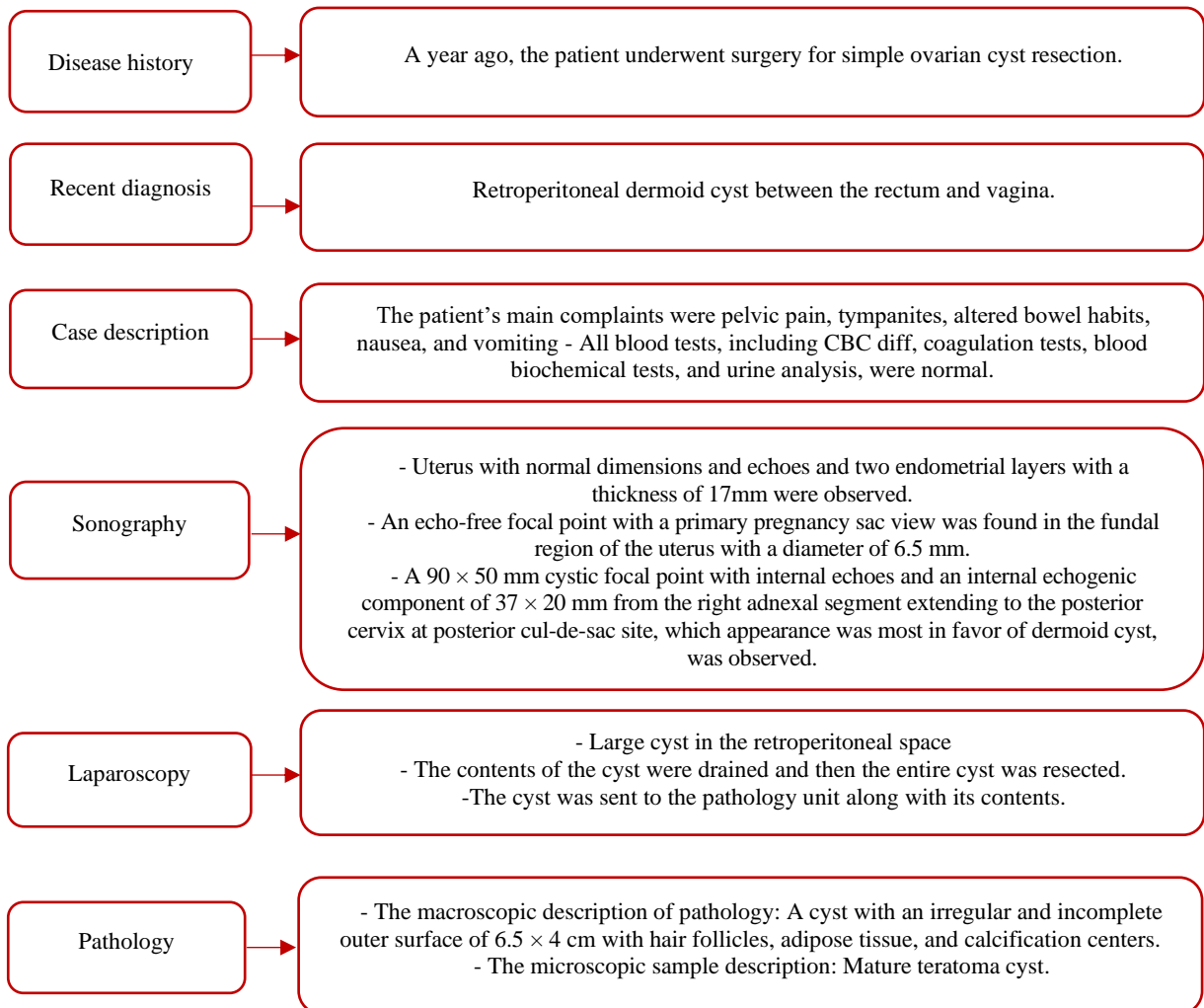
**Figure 2.** The MRI image of the pelvic region and dermoid cyst

Laparoscopic surgery was performed to remove the retroperitoneal cyst. The patient underwent general anesthesia in the supine position. Pneumoperitoneum pressure was adjusted to about 14 mm Hg. Then, after the laparoscopic thoracic insertion, the uterus was pulled upward from the vagina. The posterior cul-de-sac was resected and the cyst was identified. Afterward, the cyst was released slowly with the help of a ligature. Since the cyst was large, it was discharged by suction. Then, the whole cyst was resected and, finally, the retroperitoneal space was rinsed using normal saline. A day after the surgery, the patient was

discharged with a good general condition. Postoperative complications were not reported in the follow-ups. The macroscopic description of the retroperitoneal samples was as follows: A cystic fragment with an irregular and incomplete outer surface of 6.5 × 4 cm in diameter with hair follicles, adipose tissue, and calcification foci. The microscopic description of the sample showed a mature teratoma cyst ([Figure 3](#)). The timetable for the course of the disease and its final diagnosis are summarized in [Figure 4](#). Also our patient signed the contest form for publication the report and use of her imagining study.



**Figure 3.** The microscopic appearance of the removed cyst



**Figure 4.** The timetable of the course of the disease and its final diagnosis

## Discussion

Retroperitoneal teratomas are very rare in adults and only a few cases have been reported (2). These tumors that usually develop in the left region, are symptomatic, and can be found in routine examinations (11). The peak incidence of retroperitoneal cystic teratoma is in the first 6 months of life and early adulthood (2). These cysts comprise 1% to 11% of all primary retroperitoneal neoplasms. Primary retroperitoneal teratomas are very rare, and only 10–20% of these tumors occur in adults older than 30 years old (12). The source of the retroperitoneal teratoma was not identifiable in the patient mentioned in this study and it was similar to other primary teratomas developed in early adulthood (2). These tumors' malignancy rate is significantly higher in adults compared to children (26% vs. 7.7%) (2). Radiographic evaluations are of significant importance in the diagnosis of these tumors. Simple radiography can be used to differentiate calcified teratoma components. Ultrasounds can distinguish between cystic and solid components, and CT scans can tell adipose tissues and bone masses apart (13). However, MRI is the best method that can provide a better resolution in soft tissues, precisely identifying benign and malignant features, and help in the tumor stage. Apart from their diagnostic roles, these radiological techniques are crucial in planning surgical treatment (10). Surgical resection of the tumor is essential for definitive diagnosis and is the primary treatment option. The overall five-year survival rate after tumor resection is approximately 100% (14). Peivandi *et al.* (2016), reported a 33-year-old woman with a mass in the upper and left side of her abdomen without any signs or symptoms. Radiological evaluations showed that the mature retroperitoneal teratoma cyst had calcification extending from the pancreas to the pelvic cavity. Eventually, the tumor was removed by medial laparotomy, confirming the pathological findings of the dermoid cyst (3). In the case reported in the current study, the patient underwent laparoscopic surgery for removing the cyst. Just like the mentioned study, the cyst was in the retroperitoneum.

In a study conducted by Hoang *et al.* (2019), a 22-year-old woman, who had previously had a mature teratoma cyst in her left ovary and underwent surgery, was hospitalized due to pain in the left hypochondriac region. Radiologic evaluations indicated the presence of a mature teratoma cyst in the upper right abdominal and lateral region, below the duodenum and retroperitoneum. Finally, the cyst was removed by laparotomy and no evidence of malignancy was observed (15). In the present report, the cyst was removed by laparoscopy and, just like the mentioned study, the cyst was located in the retroperitoneum. These lesions are highly resistant to radiotherapy and chemotherapy and these treatment methods are only used for malignant teratomas (2). Although mature teratoma cysts have a benign nature, patients should be closely monitored since malignancies occur in 3–6% of

the patients (16). In this study, the reported dermoid cyst was located in the retroperitoneal region between the vagina and rectum, and a laparoscopic procedure was performed to remove the cyst. The taken sample was sent to the pathologist for final diagnosis, confirming the dermoid cyst.

One of the limitations of the present study was that the MRI report was not available; therefore, it could not be presented as an appendix.

## Conclusion

Primary retroperitoneal teratomas rarely occur in adults and are usually asymptomatic. Although tumor characteristics can be diagnosed preoperatively by imaging modalities, a definitive diagnosis can only be made by histologic evaluations. Surgical resection is the mainstay in the treatment of mature retroperitoneal teratomas.

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## Conflict of Interest

Authors declared no conflict of interests.

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