CASE REPORT

Rectal mature teratoma: A case report

Jia-Li Liu, Ping-Liang Sun

Jia-Li Liu, Department of Anorectal Surgery, Nanjing University of Chinese Medicine, Nanjing 210023, Jiangsu Province, China

Ping-Liang Sun, Department of Anorectal Surgery, The First Affiliated Hospital of Guangxi University of Chinese Medicine, Nanning 530023, Guangxi Zhuang Autonomous Region, China

Corresponding author: Jia-Li Liu, PhD, Attending Doctor, Surgeon, Surgical Oncologist, Department of Anorectal Surgery, Nanjing University of Chinese Medicine, No. 138 Xianlin Road, Qixia Area, Nanjing 210023, Jiangsu Province, China. 875398819@qq.com

Abstract

BACKGROUND
Rectal mature teratoma is rare and has been reported as a case report in this study. Herein, clinical presentation, magnetic resonance imaging findings, and immunohistochemistry showed a pelvic rectal mature teratoma. The case report and the surgical treatment procedure have been discussed below.

CASE SUMMARY
A 29-year-old Chinese female showed up with over a 1-mo history of perianal mass that emerged after defecation. Physical examination indicated that the mass was 4 cm × 3 cm × 3 cm. The intraoperative procedure involved ligation of the sigmoid colon 10 cm above the upper edge of the tumor, followed by ligation of the rectum 3.5 cm above the upper edge of the tumor, and subsequent complete removal of the mass. The histopathology confirmed the mature teratoma.

CONCLUSION
The tumor can be completely removed using surgery to prevent its recurrence.

Key Words: Rectal; Mature teratoma; Therapy; Case report

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Core Tip: Herein, a rectal mature teratoma patient was reported. However, only a few similar cases have been reported. Currently, it is difficult to diagnose mature rectal teratoma using a computed tomography scan. However, complete removal of the tumor using surgery can prevent its recurrence.
INTRODUCTION

Teratoma is a tumor caused by pluripotent cells, especially the embryonic stem or seed cells in the gonad or embryonic part of the body. It occurs in the midline or on both sides of the body. It often originates from the Hensen’s node, the location of pluripotent stem cells. Teratoma also occurs in the sacral region where pluripotent cells are located. Teratoma is mostly benign with low malignant potential, but it can also develop into a malignancy. Rectal teratoma is rare, and there are few reports worldwide. Mature teratoma is a benign tumor (dermoid cyst) and accounts for over 95% of teratomas. Mature teratoma mostly occurs in women of childbearing age and sometimes in young girls and postmenopausal women. It rarely occurs in males. This study aimed to review the diagnosis and treatment of rectal teratoma and to determine the clinical characteristics associated with this rare tumor.

CASE PRESENTATION

Chief complaints
A 29-year-old female, G1P0, with over a 1-mo history of a perianal mass that emerged after defecation, was hospitalized in the First Affiliated Hospital of Guangxi Chinese Medicine University.

History of present illness
She reported a 1-mo medical history of perianal mass that emerged after defecation and complained about the anal bulge. The patient had not used contraceptives, was not injured, had no pain, chills, or fever, and no difficulty during defecation.

History of past illness
The patient had no past illness.

Personal and family history
The patient had a history of artificial abortion and no family history of rectal mature teratoma. The condition was diagnosed as a rectal mass (nature to be investigated).

Physical examination
The mass was 4 cm × 3 cm × 3 cm inside the anus with a dentate line distance of about 6 cm and was smooth upon palliation. A non-tender mass was seen outside the anus.

Laboratory examinations
Hematological examinations, including serum electrolyte levels, human chorionic gonadotropin, comprehensive metabolic panel, and complete blood count, were normal.

Imaging examinations
Electronic colonoscopy: Rectal mass (nature to be investigated) (Figure 1).

The computed tomography (CT) scan revealed: (1) A 6.3 cm × 4.7 cm × 5.1 cm round mass, flaky low-density shadow and calcification on center, enhanced scanning lesions with circular mild enhancement, non-enhancement on center, and clear boundary on the pelvis (unclear if this is a teratoma); and (2) Double-sided adnexal area low-density shadow (cyst) (Figure 2).

A rectal mass resection was performed via laparoscopy under anesthesia to alleviate the patient’s symptoms.

FINAL DIAGNOSIS

The condition was diagnosed as mature rectal teratoma based on the above physical examinations and imaging data.
TREATMENT

Surgical procedure
A rectal mass resection was conducted via laparoscopy under anesthesia. Intraoperative ligation was conducted on the sigmoid colon 10 cm above the upper edge of the tumor and on the rectal area 3.5 cm above the upper edge of the tumor, followed by complete removal of the mass. Full hemostasis, sigmoid colon and rectal suture repair, placement of a negative pressure drainage tube in the anus and abdominal cavity, and layer-by-layer suture repair of the incision was then conducted (Figure 3).

Pathological examination
In the intestinal section, two connected tumors, about 6 cm × 5 cm × 4 cm and 2 cm × 2 cm × 2 cm, were seen in the intestinal mucosa and intestinal serosal layer, respectively. In the microscopic view, skin and appendages, glands, fat, bone tissue, bone marrow tissue, and brain tissue indicated mature teratoma. No tumor tissue was seen at the two ends (upper and lower margins) after the examination. Six lymph nodes were found, and no tumor metastasis was identified (0/6). Therefore, the condition was diagnosed as mature teratoma (Figure 4).

OUTCOME AND FOLLOW-UP
Postoperatively, the patient was discharged after healing. She returned for a follow-up in August 2018. On examination, there was evident wound healing and no tumor recurrence. Additionally, the patient was free of discomfort, pain, and fecal incontinence.
The colonoscopy and CT scan revealed a rectal mass, 6 cm × 5 cm × 4 cm in the intestinal mucosa and 2 cm × 2 cm × 2 cm in the intestinal serosal layer, which was diagnosed as mature rectal teratoma. Laparoscopic tumor resection was conducted to remove the tumor. No tumor metastasis was found 6 mo after successful 1-mo treatment. The teratoma was located in the rectal wall, which is close to the pelvic cavity. The teratoma volume increases and breaks into the intestinal wall, and bulging occurs to the posterior wall of the rectum. The teratoma then comes out of the anus and can only be returned by hand.

**DISCUSSION**

Clinical reports of teratoma are common in the sacrococcygeal, appendix, ovary, testis, retroperitoneum, mediastinum, etc. Several studies have shown that the incidence of teratoma may be related to various
Table 1 Reported cases of rectal mature teratoma

| Ref.                  | Year | Age/sex | Symptoms                              | Previous history                  | Method                           | Final diagnosis               |
|-----------------------|------|---------|---------------------------------------|-----------------------------------|---------------------------------|-------------------------------|
| Murdock and Abbas[25] | 2010 | 26/female | Right-sided pelvic pain radiating down her lower extremities | Transanal drainage of a presumed presacral abscess | Laparoscopic abdomino-paracoccygeal resection | Anorectal cystic teratoma |
| Wang et al[26]       | 2019 | 44/female | Submucosal rectal mass               | Not described                     | Laparoscopic tumor resection     | Mature retrorectal teratoma   |
| Aiken et al[27]      | 2020 | 47/female | Bleeding from the rectum for 10 d     | Partial resection of the rectum   | Rectum mature teratoma          |                               |
| Nam and Kim[28]      | 2021 | 68/female | Hematochezia                          | Not described                     | Polypectomy                      | Primary mature teratoma of the rectum |
| Our case              | 2021 | 29/female | Perianal mass that emerged after defeication | Not described                     | Laparoscopic                    | Rectal mature teratoma       |

CONCLUSION

Rectal teratoma remains a rare disease despite a recent uptick in diagnoses. Radiological imaging is helpful to preoperative diagnosis and planning. Complete surgical excision is the treatment of choice, and regular follow-up after surgery is needed to prevent recurrence. The prognosis of mature teratomas...
is excellent, and we report this case to raise awareness of this disease.

FOOTNOTES

Author contributions: Liu JL and Sun PL designed the research and equally contributed to this work; Liu JL and Sun PL provided figure legends; Liu JL and Sun PL drafted the manuscript; All authors reviewed and approved the final submitted manuscript.

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Country/Territory of origin: China

ORCID number: Jia-Li Liu 0000-0001-6244-1010; Ping-Liang Sun 0000-0001-7524-872X.

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