

Rectal Teratoma coexistent with an Ovarian Teratoma: A Case Report¹

Yong Sun Jeon, M.D., Soon Gu Cho, M.D., Sun Keun Choi, M.D.², In Suh Park, M.D.³,
Won Hong Kim, M.D., Kyung Hee Lee, M.D., Chang Hae Suh, M.D.

We report a case of rectal teratoma coexistent with an ovarian teratoma. To our knowledge, this is the first radiologic report of rectal teratoma. Computed tomography (CT) showed a sharply demarcated cystic and fatty mass with amorphous calcification in the rectum. A double-contrast barium study showed a well-defined intraluminal rectal mass without mucosal destruction. Imaging findings of rectal teratoma allow for correct preoperative diagnosis. CT was helpful in differentiating rectal teratoma from other rectal lesions.

Index words : Rectum, neoplasms
Ovary, neoplasms
Rectum, CT
Teratoma

A teratoma is a mixed tumor containing elements of the three germinal layers. Although teratomas involving the ovary, testicle, and retroperitoneum are frequently found, rectal involvement is extremely rare. There have only been about 50 cases of primary rectal teratoma reported since 1864 (1). Herein, we present the radiologic features of a rectal teratoma that was identified with an asymptomatic ovarian teratoma and correctly diagnosed preoperatively using CT images.

Case Report

A 79-year-old woman was referred to our surgical department from a local clinic for the evaluation of a rectal mass. The patient had a history of difficulty in defeca-

tion for the preceding month. The previous medical history of the patient was unremarkable. The results of laboratory tests were normal. A hard palpable mass was present upon rectal examination. For the evaluation of the rectal mass, we performed computed tomography (CT) and a barium study.

Post-contrast CT scanning showed an 8 × 5 cm, well-circumscribed intraluminal rectal mass (Fig. 1A). The rectal mass contained calcifications and fatty components (Fig. 1B). The rectum was distended by the intraluminal mass, but no evidence of perirectal fat infiltration or rectal wall thickening was observed. A well-demarcated cystic ovarian mass with internal calcifications was also seen in the right pelvic cavity on post-contrast CT scan (Fig. 1B). There was no evidence of rupture or infiltration. A double-contrast barium study showed a large, well-defined intraluminal mass located 3 - 4 cm from the anal verge (Fig. 1C). The distended rectum showed no mucosal destruction or luminal obstruction.

With the impression of rectal teratoma coexistent with ovarian teratoma, doctors performed surgery on the pa-

¹Department of Radiology, Inha University College of Medicine

²Department of Surgery, Inha University College of Medicine

³Department of Pathology, Inha University College of Medicine

Received November 9, 2005 ; Accepted December 20, 2005

This work was supported by INHA UNIVERSITY Research Grant.

Address reprint requests to : Yong Sun Jeon, M.D., Department of Radiology, Inha University Hospital, 7-206, 3rd St., Shinheung-dong, Choong-gu, Incheon 400-711, Republic of Korea.

Tel. 82-32-890-2767 Fax. 82-32-890-2743 E-mail: radjeon@netian.com

tient. In the surgical finding, the rectal mass was soft and ovoid with a stalk protruding into the rectal lumen. The stalk of the tumor was located in the anterior wall of the rectum, 3 to 4 cm from the anal verge. The tumor

and stalk were transanally resected. The huge pelvic mass in the right ovary was removed by transabdominal right salpingoophorectomy. No relationship was observed between the ovarian mass and the rectum at the

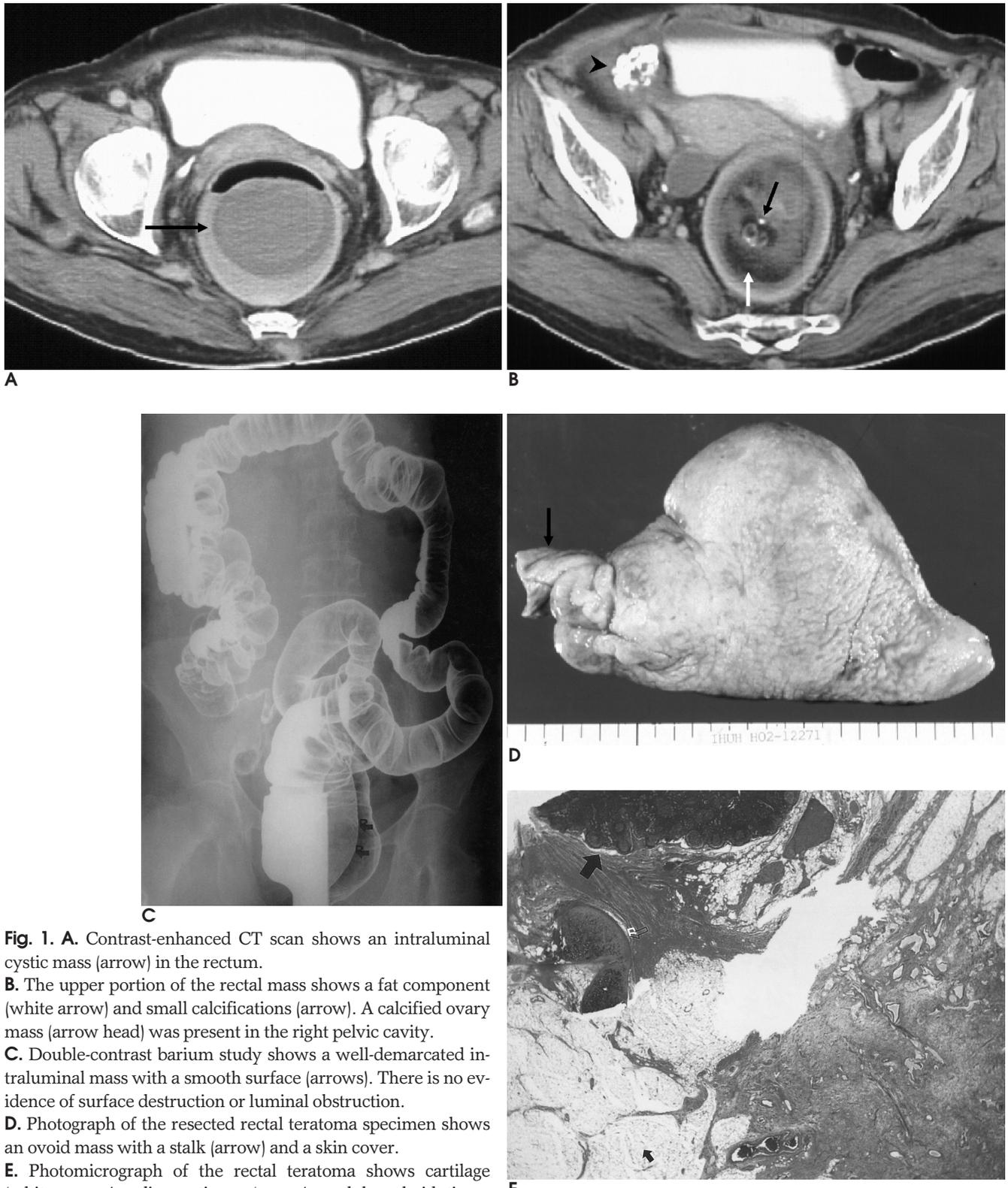


Fig. 1. **A.** Contrast-enhanced CT scan shows an intraluminal cystic mass (arrow) in the rectum.
B. The upper portion of the rectal mass shows a fat component (white arrow) and small calcifications (arrow). A calcified ovary mass (arrow head) was present in the right pelvic cavity.
C. Double-contrast barium study shows a well-demarcated intraluminal mass with a smooth surface (arrows). There is no evidence of surface destruction or luminal obstruction.
D. Photograph of the resected rectal teratoma specimen shows an ovoid mass with a stalk (arrow) and a skin cover.
E. Photomicrograph of the rectal teratoma shows cartilage (white arrow), adipose tissue (arrow), and lymphoid tissue (thick arrow) (H & E, $\times 12.5$).

time of surgical excision.

Upon gross examination, the rectal mass was characterized as a soft, relatively ovoid mass that was covered with skin and measured 15 × 9 × 7 cm (Fig. 1D). The skin was relatively intact. The cut surface showed fibroadipose tissue and cystic spaces containing a blood clot and tan, friable tissue. Hard bony tissue, measuring 2 × 0.3 cm, was also present. Upon microscopic examination, the rectal mass was covered with keratinizing squamous epithelium. Abundant adipose tissue, fibrous tissue, irregular blood vessels, nerves, melanin pigments, and a small cartilage island were present (Fig. 1E). These findings were compatible with a mature teratoma. On gross sectioning, the right pelvic mass was identified as a unilocular cyst containing dark brown, turbid material and measuring 13 × 11 × 7 cm. Microscopic findings showed keratinizing squamous epithelium, hairs, ciliated pseudostratified columnar epithelium, and thyroid tissue. The findings were compatible with a benign cystic teratoma of the ovary.

Discussion

It is thought that rectal teratomas may arise from abnormal germ cells in the embryonic digestive tract (1). Primordial germ cells are observed at about 3 to 4 weeks of gestation in the endoderm of the umbilical vesicle wall and then move from the dorsal mesentery of the hindgut through the mesenchyme toward the gonadal ridge (1). The adrenal gland, urinary tract, gonads, and rectum are adjoining structures, and the germ cells can potentially enter the rectum aberrantly and create a rectal teratoma (1).

Our case revealed a rectal teratoma coexisting with an ovarian teratoma. It is difficult to determine whether the rectal tumor was a primary rectal teratoma or a teratoma of an adjacent organ or tissue that had migrated through the rectal wall. Some cases of benign cystic teratoma of the ovary that ruptured into the rectum have been reported (2, 3). Peterson et al. (4) collected 1,007 cases of benign cystic teratoma of the ovary, of which rupturing occurred in only 13; this rupturing extends either into the intraperitoneal cavity or into the adjacent viscus. However, no conclusive decision could be drawn due to the extremely rare pathology in this case. We postulate that our case is a primary rectal teratoma because of the lack of a relationship between the ovarian teratoma and the rectum by radiological and surgical findings, the presence of a well-defined stalk, and the

lack of histopathologic evidence of ovarian tissue in the rectal teratoma.

The major clinical symptoms of rectal teratoma are anal bleeding, bloody stools or melena, and constipation. Protrusion of the tumor itself or of hair has been also reported occasionally (5). The most common site of primary rectal teratoma growth is the anterior wall of the rectum, as was seen in our case (6). In most reported instances, the primary rectal teratoma itself had pedunculated character (5, 6).

In our case, the diagnosis could be established preoperatively by a barium study and cross-sectional CT imaging. The barium study showed an intraluminal mass in the rectum with no evidence of mucosal destruction or barium leakage. CT scan is particularly well-suited to the diagnostic evaluation of a teratoma because of its high specificity in detecting fat and calcification. In our case, CT imaging showed the characteristic fat component, small calcifications, and cyst. In a retrospective study of gastrointestinal teratomas, the borders of the teratomas were round and sharp because of encapsulation, as was observed in our case (7). The findings of imaging and location of the tumor raise the differential diagnoses that include lipoma, angiomyolipoma, lymphangioma, leiomyosarcoma, and abscess. Lipoma and angiomyolipoma contain fat tissue on CT scans, but are not cystic and do not contain calcifications. Lymphangioma, leiomyosarcoma, and abscess may appear cystic, but the absence of fat or calcification enables the radiologist to differentiate rectal teratoma from these conditions.

In conclusion, we report a rare case of rectal teratoma coexistent with an asymptomatic ovarian teratoma. Rectal teratoma could be correctly diagnosed by imaging features at a preoperative stage. Although very rare, rectal teratoma should be considered in the differential diagnosis of a rectal mass that contains internal fat tissue or calcifications.

References

1. Takao Y, Shimamoto C, Hazama K, Itakura H, Sasaki S, Umegaki E, et al. Primary rectal teratoma: EUS features and review of the literature. *Gastrointest Endosc* 2000;51:353-355
2. Farkouh E, Allard M, Paquin JG. Benign solid teratoma of the ovary with rupture into the rectum. *Can J Surg* 1982;25:77-78
3. Landmann DD, Lewis RW. Benign cystic ovarian teratoma with colorectal involvement. Report of a case and review of the literature. *Dis Colon Rectum* 1988;31:808-813
4. Peterson WF, Prevost EC, Edmunds FT, Hundley JM Jr, Morris FK. Benign cystic teratomas of the ovary: a clinico-statistical study

of 1,007 cases with a review of the literature. *Am J Obstet Gynecol* 1955;70:368-382

5. Green JB, Timmcke AE, Mitchell WT Jr. Endoscopic resection of primary rectal teratoma. *Am J Surg* 1993;59:270-272

6. Tabuchi Y, Tsunemi K, Matsuda T. Variant type of teratoma ap-

pearing as a primary solid dermoid tumor in the rectum: report of a case. *Surg Today* 1995;25:68-71

7. Bowen B, Ros PR, McCarthy MJ, Olmsted WW, Hjermsstad BM. Gastrointestinal teratomas: CT and US appearance with pathologic correlation. *Radiology* 1987;162:431-433

2006;54:417 - 420

