A Case of Primary Mature Teratoma of the Rectum

Hyun Sung Park, Seung Goun Hong, Se Young Jung, Shin Myung Kang, Kyoungyong Lee, Dong Wook Yu

Department of Internal Medicine, SAM Anyang Hospital, Anyang, Korea

A mature teratoma is a tumor composed of normal derivatives of all three germ layers, and usually occurs in ovaries, testes, or mediastinum. Mature teratoma of the gastrointestinal tract occurs less frequently, and case reports of primary mature teratoma of the rectum have not been published much. Here, we report a 65-year-old woman patient presented with lower abdominal discomfort. Colonoscopy revealed a pedunculated polypoid tumor arising from the rectum with hairs on its surface, and endoscopic ultrasound revealed an exophytic pattern bulging from the serosa. The tumor was removed surgically and confirmed histologically as a benign, primary mature teratoma of the rectum.

Keywords: Teratoma; Rectum; Exophytic; General surgery

INTRODUCTION

A mature teratoma is a tumor composed of parenchymal cell types representative of more than one germ layer, usually all three, and occurs in ovaries, testes or mediastinum [1,2]. Mature teratoma arising from the gastrointestinal tract occurs less frequently, and case report of mature teratoma of the rectum with endoscopic ultrasound (EUS) features has not been published much. Here, we report a case of primary mature teratoma of the rectum presenting with lower abdominal discomfort, and treated with surgery.

CASE REPORT

A 65-year-old woman presented with lower abdominal discomfort which began two months ago. The patient had history of hypertension and appendectomy performed 30 years ago. She had no significant family history or social history. On her initial visit, blood pressure of 136/90 mm Hg, pulse rate of 74 beats per minute, respiratory rate of 20 breaths per minute and body temperature of 36.3°C were measured. On physical examination, mild tenderness in her left lower quadrant without rigidity or rebound tenderness was noted with normal bowel sound and no palpable abdominal mass. In a laboratory test, hemoglobin level was 11.9 g/dL and the other findings were within normal limits. Colonoscopy revealed a protruding mass with a long stalk which resembled a submucosal tumor at 12 cm from the anal verge in the upper rectum. The mass was 2.5 cm in size, firm in consistency when probed with a biopsy forceps, and had hairs on its surface with distorted long neck fixated on the surrounding colonic mucosa (Fig. 1). An abdominal computed tomography (CT) revealed a 3.6 cm-sized, low density mass with internal nodular calcifications on the rectosigmoid junction (Fig. 2). EUS revealed an about 4 cm-sized hyperechoic, heterogeneous mass in an exophytic pattern with irregular border. On Doppler image there was a central calcification without internal vascularity within the tumor (Fig. 3). Due to the hard nature of the mass, fine-needle aspiration could not gain sufficient materials and the cytology finding from small flakes of tissues in the needle showed degenerated cells and keratin materials, which were thought to be contaminated from the skin and were reported as non-diagnostic.

The patient was referred to the department of surgery for lower anterior resection of the tumor. On operation, we could see the intraluminal mass was connected to a 1.5 cm-sized protruding mass outside the serosa. Grossly, its cross section showed a $4 \times 2.5 \times 1.5$...
cm-sized dumbbell-shaped intraluminal polypoid mass containing yellow adipose tissue with surrounding white osteochondroid tissue extending through the serosa in an outgrowing pattern (Fig. 4). On microscopic examination, the tumor was entirely covered with squamous epithelium and sections revealed squamous epithelium, hair follicle, bone, and apocrine glands (Fig. 5). There was no immature element identified. All these findings were consistent with features of mature teratoma.

**DISCUSSION**

Mature teratoma is a tumor with components of the three germ-
Primary mature teratoma occurs less frequently in the rectum than in the usual sites. Only 54 cases worldwide and 4 cases in Korea have been published, and most of them arose in women with a wide range of age from 8 to 80 years [3,6,7]. Our case differs from other published rectal teratoma cases in that EUS played an important role in guiding treatment in our case which will later be discussed. Many of the patients presented with prolapse of the tumor or hair on stool. The shapes of the tumors were pedunculated polypoid in half of the patients and the size of the tumor ranged
from 1.2 to 15 cm [2,6]. Since teratomas usually originate from ovaries, testes, and midline organs, when rectal teratoma is found, one should look for other usual sites for any other mass lesions, as there was a case of ovarian teratoma with secondary rectal involvement [8]. It is usually difficult to determine whether the rectal teratoma is primary or secondary, and the presence of well-defined pedicle may indicate a rectum as a primary origin [9]. In addition, a primary rectal teratoma is entirely covered by squamous epithelium, whereas ovarian teratoma has squamous epithelium as one element in the form of cysts within the tumor [3]. In our case, typical twisted pedunculated polypoid tumor with hair, both ovaries free of any adhesion to adjacent tissues with no other mass lesions on abdominal CT or surgery, and squamous epithelium entirely covering the tumor on microscopic finding all supported rectum as a primary origin of teratoma.

Because malignant transformation of mature teratoma is uncommon, and no case of a malignant teratoma of the rectum has been reported, a minimally invasive surgery or endoscopic polypectomy is usually performed. The indication for endoscopic polypectomy is a tumor with size less than 4 cm and well-defined pedunculated type with no evidence of malignancy [6,8]. Since our lesion had a thick stalk and normal overlying mucosa, we could not rule out a submucosal tumor with certainty and therefore performed EUS. It showed an intraluminal polypoid tumor with exophytic pattern bulging from the serosa. Since endoscopic resection seemed very difficult, surgical resection was performed and the histology confirmed a primary mature teratoma of the rectum without any immature or malignant elements.

In summary, we experienced a case of primary mature teratoma of the rectum with exophytic pattern, which was successfully treated with surgical resection.

REFERENCES