Case Report

A Polyp-like Carcinoid Tumor of Rectum, Small Size and Unusual Location in Chareongkrung Pracharak Hospital

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ABSTRACT

A 56-years-old man with a small rectal carcinoid tumor without carcinoid syndrome was admitted at Chareongkrung Pracharak Hospital with rectal bleeding. Proctoscopy revealed a small 7-mm rectal polyp, at 6 cm above the dentate line. Histology was diagnostic of a carcinoid tumor without atypical histopathologic feature or invasion into the muscularis propria . Immunohistochemical study was positive for NSE and synaptophysin (neuroendocrine marker) and non-reactive for argyrophil silver granules. The tumor did not express p53 antigen and was negative for Ki 67, suggesting a low malignant potential and a low metastatic activity. Total colonoscopy up to the ileocecal valve with subsequent polypectomy was carried out. There was neither tumor recurrence nor distant metastasis at 1-year follow-up.

Key words : carcinoid, neuroendocrine, argyrophil silver granule, p53

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INTRODUCTION

Carcinoid tumors of the rectum are uncommon[1]. Over 90% of all carcinoid tumors arise in the gastrointestinal system (GI). Within the GI, GI carcinoids comprise 2% of all GI tumors, and are usually located in the small intestine and the appendix. Gastric, rectal, and mesenteric carcinoids are rare. However, a recent study shows that the number of reported cases has increased rapidly in both Japanese and non-Japanese series[2], possibly related to the constantly increasing number of colonoscopic examinations, The rectum is the most common site of gastrointestinal carcinoid tumors in Japan and the third most common site in American-European countries[3-5]. Frequent symptoms include bleeding, constipation, rectal pain, and tenesmus, although approximately half of the patients with rectal carcinoids are asymptomatic[6,9,13]. Rectal carcinoid tumors are often detected incidentally by digital examination, and by proctoscopic or sigmoidoscopic examination as a distinctive yellow, firm or hard, dis-

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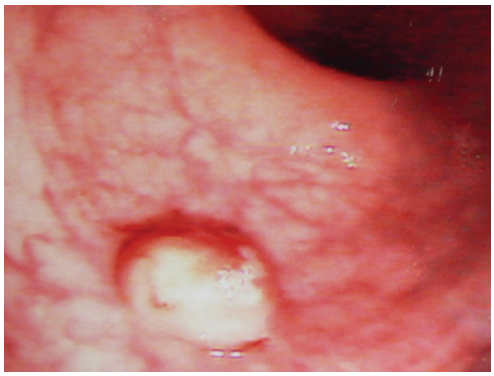
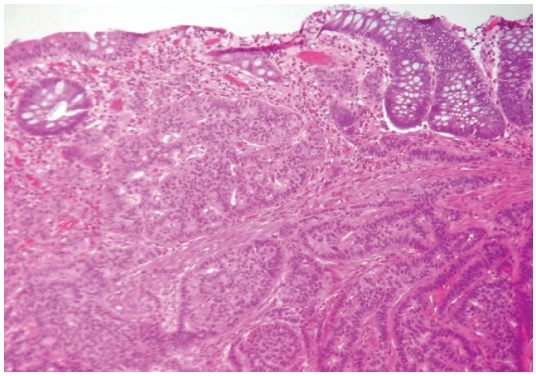
crete, smooth and mobile submucosal masses. We hereby report a case of a small rectal carcinoid presenting as a small polyp with rectal bleeding.

Case Report

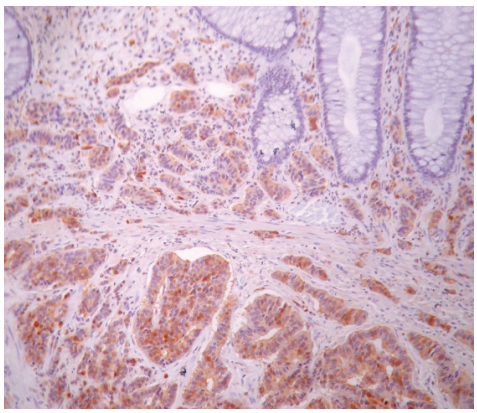
A previously healthy 56-year-old man complained of intermittent rectal bleeding for 6 months. There were no fever and no classic carcinoid symptoms (flashing, diarrhea and palpitation). Physical examination and laboratory data including serum tumor marker and hormones (such as 5-HIAA) were all normal. Proctoscopy revealed a small polyp in the rectum, located at 6-cm above the dentate line. Polypectomy was routinely performed. The endoscopic diagnosis prior to pathological reporting was "a benign rectal polyp". The



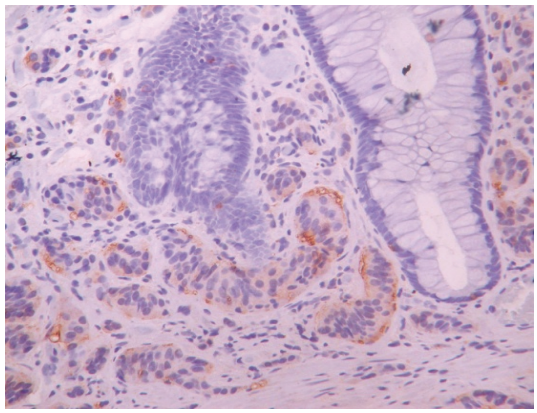
A. Gross finding: polyp, sized 0.7 cm



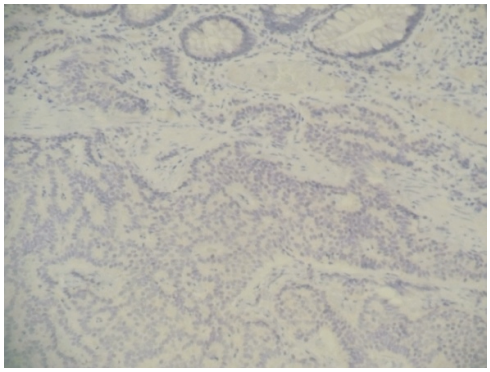
B. Microscopic finding: uniform cells without atypia cells, arranged in nest cords, ribbon patterns in submucosa



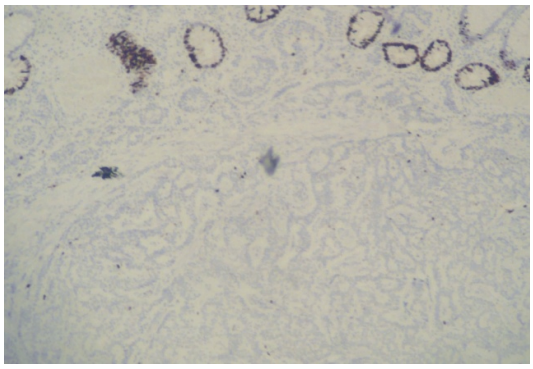
C. Immunohistochemistry reveals positive for synaptophysin



D. Immunohistochemistry reveals weakly positive for chromogranin



E. Immunohistochemistry reveals negative for Ki67



F. Immunohistochemistry reveals negative for p53

removed polyp was 0.3 × 0.6 × 0.6 cm. in size. Histology was reported as being carcinoid tumor, consisting of small uniform mononuclear cells with bland-looking nuclei arranged in nests and cords in the submucosal layer, with infiltration in to the surface in an anastomosing ribbon-like pattern. No mitotic features were detected. There was neither muscularis propria nor lymphatic or vascular invasion. Immunohistochemical study revealed positive cytoplasmic staining by NSE and synaptophysin. The latter is the most sensitive neuroendocrine marker, but is negative for chromogranin (a marker for neuroendocrine that is less sensitive than synaptophysin). Ki 67 and p53 stains, which were marker of aggressiveness in such tumor, were negative. Colonoscopy up to the ileocecal valve displayed no other lesions, indicating that this carcinoid was unicentric. At 1-year follow-up, the patient remained healthy without distant metastasis or GI symptoms.

DISCUSSION

For rectal carcinoids, carcinoid syndrome is almost virtually unknown[9], and the levels of urine 5-hydroxyindoleacetic acid or (5 HIAA) and serum serotonin are usually within normal limits[8]. A recent report from the USA showed that primary carcinoid tumors of the rectum were most frequent among all gastrointestinal carcinoid tumors[6]. Rectal carcinoids occur most commonly in the 5th to the 6th decades, with the male : female ratio of 1.0 : 1.11[7,8]. The tumors usually arise singly, with only fewer than 10 cases of multiple carcinoid tumors reported in the English literature[1,9-11]. Most tumors are located between 4 and 13 cm above the dentate line[2,6,9]. In a study by Bridget *et al*, rectal carcinoids were 9.2 ± 3.4 cm (mean values) from the anal verge, and 9.0 ± 6.0 mm (mean values) in size, and the presenting fraters were bowel habbit changes (38%), rectal bleeding (38%) and abdominal pain or distention (31%)[33]. Seventy-two percent of all reported rectal carcinoids are localized[3]. Several parameters have been suggested as being predictive of a malignant potential for rectal carcinoids, including tumor size, depth of invasion, lymphatic permeation, histologic growth pattern, presenting symptoms, morphologic factors, atypical histology, etc.[1,2,9,12,13]. Tumor size and depth of histologic invasion have been proposed as the two most important guides as to the malignant nature of rectal carcinoid tumors[3,4,9,12,15-28], although some exceptional cases have also been reported[29,30]. Tumors greater than or equal to 2.0 cm have 60 to 89 percent incidence of metastasis, while tumors measuring from 1.0 to 1.9 cm have a 10 to 15 percent metastatic incidence of, and tumors less than 1.0 cm have less than 2 to 5.5 percent incidence of metastasis[1,31] (Table 1). The combined histologic invasion into the muscularis propria and size has also been reported to be an accurate predictor of metastasis[1,4,12,16,18,26]. Shirouzu *et al*. reported that rectal carcinoid tumors less than 2 cm in diameter were associated with neither muscular invasion nor lymph node metastasis[19].

Approximately 80 percent of rectal carcinoid lesions are less than 1.0 cm in size, submucosal in location, and without evidence of metastatic spread. As such, local therapy including endoscopic excision (endoscopic mucosal resection or EMR and other methods) and local resection (transanal resection, etc.), is adequate and curative[6,8,9,12,13,16,17,27-29,32] (Table1). For tumors between 1.0 and 1.9 cm in size without preoperative evidence of lymph node metastasis or invasion into the muscularis propria, a proper local excision method is recommended, which would enable an adequate specimen to evaluate the depth of invasion, lymphatic permeation as well as other parameters predictive of a malignant potential[2,13,25]. When the size is 2.0 cm or greater, or when muscular invasion or node metastases is present, radical extensive surgery including low anterior resection with total or tumor specific mesorectal excision, or abdomeno-perineal resection,

Table 1 Frequency of lymph node metastasis and treatment modality

Tumor size	≤1 cm	1-1.9 cm	≥2 cm
Lymph node metastasis	<2-5.5%	10 - 15%	60-89%
Treatment modality	local therapy (EMR*/local excision)	local excision or colectomy	colectomy (lymph clearance)

*EMR: endoscopic mucosal resection

should be performed. However, this latter approach for bigger lesion has been challenged recently by Sauven *et al*., who found no survival benefit even with aggressive surgery[9,23]. The authors concluded that local excision is quite adequate, provided the entire tumor can be removed. Thus far, local therapy seems to be adequate for single tumors less than 2.0 cm with no signs of muscular invasion or lymph node spread preoperatively. Total excision may be employed to obtain adequate specimen for proper histologic evaluation. Multicentric carcinoids may be approached differently, as they are usually regarded as malignant even if tumors are less than 1.0 cm. However, this setting is extremely rare[1,9]. Involvement of lymph nodes has been reported in cases of multiple carcinoid tumors of the rectum[10,11]. Hasegawa et al. reported that carcinoid tumors expressing p53 and Ki-67 had a high malignant potential and a metastatic activity[34]. In future, the induction of molecular biology may be helpful in predicting the prognosis of carcinoid tumor[35].

In summary, a case of small polypoid rectal carcinoid less than 1 cm in sized was reported. The case was uncommon, showing no invasion into the muscular propria, no atypical histologic features and no multicentric origin with expressing immunomarker synaptophysin (a specific marker for neuroendocrine origin), and without expression of Ki 67 and p53, (an indicator of low malignant potential and low metastatic activity).

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