

Colonic muco-submucosal elongated polyp: diagnosis with endoscopic ultrasound

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Abstract. Colonic muco-submucosal elongated polyp is a new clinical entity first reported in 1998. The purpose of this report is to determine the value of endoscopic ultrasound in the diagnosis of this condition. We reviewed the endosonographic and histological findings of seven colonic muco-submucosal elongated polyps that were removed completely by endoscopic resection or surgery. The lesions appeared as pedunculated submucosal tumours, measuring 1–4 cm in maximal diameter. Endosonographically, all lesions consisted of mucosal and submucosal layers, and microcystic components were found in the submucosal layer. There were no echogenic masses or muscularis propria within the polyps. These endosonographic features corresponded to histological findings of this type of polyp which was covered with normal mucosa and composed of submucosal layer alone. The submucosal layer consisted of oedematous, loose, connective tissue and/or fibrous tissue, accompanied by dilated blood vessels and lymphatics. Endoscopic ultrasound enabled differentiation of colonic muco-submucosal elongated polyp from other submucosal lesions.

Colonic muco-submucosal elongated polyp (CMSEP) is a new clinical entity first described by Matake et al in 1998 [1]. Endoscopically, CMSEPs appear as an elongated, drumstick-shaped polyp. Histologically, the polyp is covered with normal mucosa and consists of oedematous, loose, fibrous connective tissue with a dense, fibrous submucosal layer, often showing dilation of blood vessels and lymphatics. The incidence of CMSEP was 0.39% in one endoscopic polypectomy series. Because of its rarity, the endoscopic ultrasound (EUS) features of CMSEP have been reported in only one case [2]. This report describes the characteristic EUS features of seven CMSEPs.

Patients and methods

Between June 1999 and April 2004, seven CMSEPs (in five men; age range 35–89 years) were evaluated by EUS at our institute prior to endoscopic or surgical removal. All patients were suspected of having a CMSEP at initial colonoscopy, and endoscopic biopsy revealed only

non-specific findings. EUS was performed subsequently using an ultrasound catheter probe (SP-701; 12–20 MHz; Fujinon, Oomiya, Japan) with a filling technique using de-aerated water. As EUS showed all lesions to be limited to the mucosa and submucosa, with the patients' informed consent we successfully performed endoscopic resection in six of seven patients without complications. The lesion in the fifth patient was surgically resected owing to nearby advanced colonic cancer. The specimens were subjected to histological examination.

We retrospectively compared the histological features with EUS findings.

Results

Patient characteristics are summarized in Table 1. The affected site was the rectum in three lesions, the sigmoid colon in two lesions, and the ascending colon in two lesions. The lesions appeared as pedunculated, submucosal tumours on endoscopy (Figure 1). All the polyps had the same endosonographic and histological features. On EUS, the first to third layers were intact in all lesions, reflecting preservation of the mucosal and submucosal layers. There

Received 19 July 2004 and in revised form 18 October 2004, accepted 6 December 2004.

Table 1. Summary of patients characteristics

Patient no./gender/age (years)	Polyp			Symptoms	Treatment
	Location	Size (cm)	Shape		
1/m/49	Sigmoid colon	2	Pedunculated	Soft stool	Endoscopic resection
2/m/59	Ascending colon	1	Pedunculated	Occult blood in faeces	Endoscopic resection
3/m/35	Sigmoid colon	1.5	Pedunculated	Abdominal pain, diarrhoea	Endoscopic resection
4/m/88	Rectum	1	Pedunculated	Abdominal pain	Endoscopic resection
5/f/78	Rectum	1	Pedunculated	Abdominal distension ^a	Surgical resection
6/f/70	Rectum	1	Pedunculated	Bloody stool	Endoscopic resection
7/m/66	Ascending colon	4	Pedunculated	Abdominal pain	Endoscopic resection

^aAdvanced colonic cancer coexisted in this case. (Simultaneous pathologies could not be detected in the other patients.)

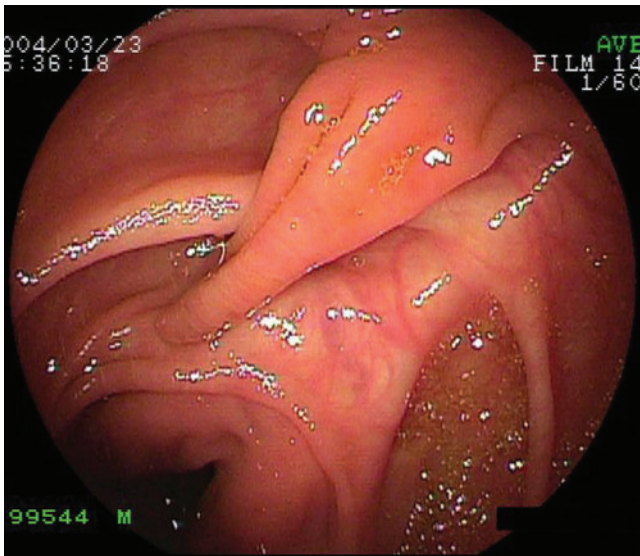


Figure 1. Patient 7. Colonoscopy of the ascending colon shows a pedunculated polypoid lesion. The surface is smooth and covered with normal colonic mucosa.

was no muscularis propria layer or echogenic mass within the polyp (Figure 2). In the third layer, microcystic components were found (Figure 3). Histologically, atypia and hyperplasia of the mucosa and lamina propria were not observed, and there was no evidence of specific inflammation (Figure 4). The submucosal layers were composed mainly of oedematous stroma with mild, chronic inflammatory infiltration. Dilated blood vessels and lymphatics were observed in all lesions (Figure 5).

Discussion

Morson and Dawson [3] divided colonic polyps into four classes: neoplastic, hamartomatous, inflammatory, and unclassified. Matake et al [1] first characterized CMSEP in 15 patients in 1998. Signs and symptoms include occult blood-positive faeces, bloody stool,

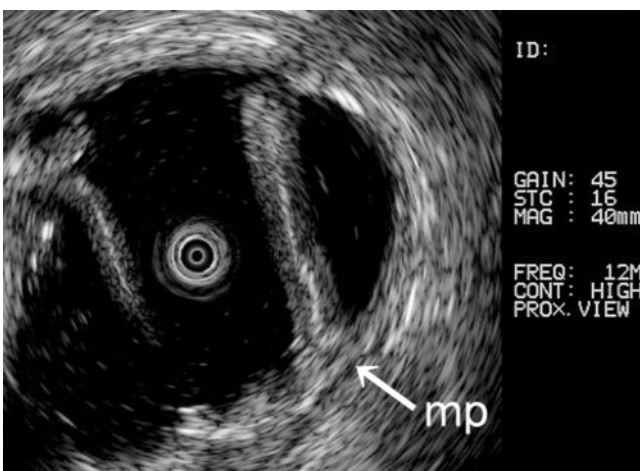


Figure 2. Patient 7. Endoscopic ultrasound shows an elongated polypoid lesion consisting of intact first to third layers, revealing mucosal and submucosal colonic layers. There is no echogenic mass or muscularis propria (arrow-mp) layer in the polyp.



Figure 3. Patient 7. Endoscopic ultrasound of the head portion of the polyp demonstrates multiple microcystic components (arrows) in the submucosal layer.

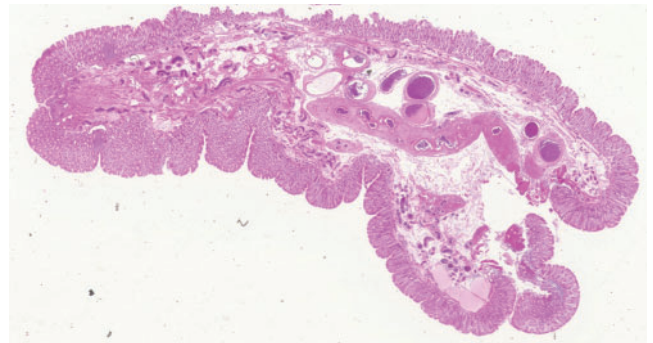


Figure 4. Patient 7. Histology showing the cross-section of a polyp consisting of mild, chronically inflamed mucosa and submucosa, with oedematous, loose, fibrous connective tissue.

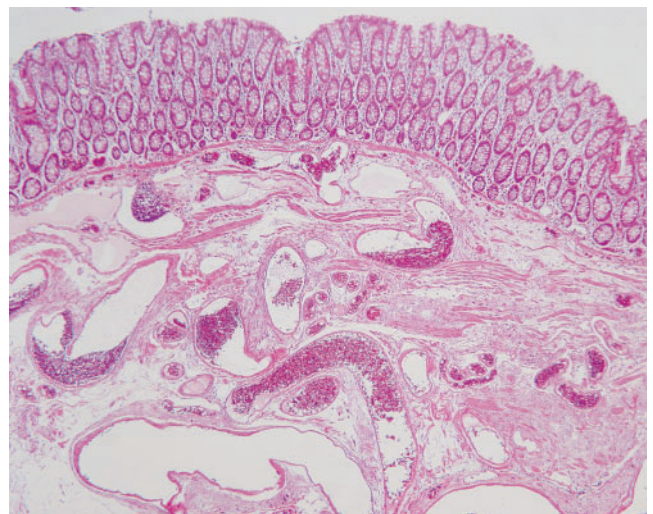


Figure 5. Patient 7. Microscopic findings of a polyp showing the submucosal oedema, with dilated vessels and lymphatics.

constipation, back pain, and abdominal pain [1, 2]. At present, the pathogenesis and treatment-of-choice of this type of polyp is undetermined [1]. Better characterization of CMSEP in future studies should help resolve these issues.

EUS is a highly accurate way of determining the characteristics of a submucosal tumour by identifying the layer of origin and echotexture [4, 5]. Catheter US probes that can be inserted through the accessory channel of standard endoscopes facilitate EUS, and the diagnosis of submucosal lesions using these devices appears to be highly accurate [5]. Although EUS has been widely used in the diagnosis of submucosal lesions, because of its rarity there has been only one case report describing the EUS findings of CMSEP in one patient [2]. In this study, we performed EUS in seven patients with endoscopic resection or surgically proven CMSEP. In this investigation, characteristic EUS features of this disease were polyps consisting of mucosal and submucosal layers. There were no echogenic masses or muscularis propria within the polyps. All lesions had multiple microcystic components in the third layer, which probably reflected submucosal dilated vessels and lymphatics. These EUS findings corresponded well to the pathological characteristic of CMSEP, as described by Matake et al [1]. Therefore, EUS can differentiate CMSEP from other submucosal lesions such as leiomyoma [5, 6], lipoma [7] and lymphangioma [8]. Pre-therapeutic endoscopic biopsy is not useful in the diagnosis of CMSEP. EUS appears to permit the definitive diagnosis of CMSEP prior to excision.

Although our study is preliminary and further investigations are necessary, we believe that the EUS features

described herein are important in diagnosis of CMSEP, a benign entity, so inappropriate treatment can be avoided.

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