Case Analysis

Prolapsing Mucosal Polyps without Prolapse of Rectal Mucosal – Report of 7 Cases

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Key Words
Prolapsing mucosal polyp;
Mucosal prolapse;
Colorectal polyp;
Colon tumor;
Colonoscopy.

Background. Prolapsing mucosal polyps were first described in 1985 as a new entity of benign colorectal polyp and were characterized by the association with mucosal prolapse. We examined and analyzed a series of seven cases with such lesions in hope of clarifying the clinicopathological features of this rare entity.
Methods. From the Database of Pathology in Chang Gung Memorial Hospital from 2002 to 2005, we retrospectively identified and studied seven patients who had a colorectal polyp with a pathologic diagnosis of prolapsing mucosal polyp.
Results. There were three male and four female patients. Their ages ranged from 30 to 86 years. All the polyps were located in the sigmoid colon or rectum. None of the patients had diverticular disease, solitary rectal ulcer syndrome, or symptoms of mucosal prolapse. The most consistent histological findings were: crypt abnormalities, fibromuscular obliteration of the lamina propria, splayed muscularis mucosae into lamina propria in the polyp, inflammatory cells infiltration in lamina propria and mucosal capillary abnormalities.
Conclusions. Prolapsing mucosal polyp is a rare but histologically distinct type of colorectal polyp, which may be not associated with clinical evidence of rectal mucosal prolapse.
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Mucosal prolapse can produce a group of inflammatory lesions in the lower gastrointestinal tract including polyps, masses and ulcers that are characterized by elongated and distorted glands surrounded by proliferation of smooth muscle fibers from the muscularis mucosae.[1] The term "prolapsing mucosal polyp" was first described by Franzin et al in 1985 as a new entity of benign colorectal polyp.[2] They reported that these benign colonic lesions are characterized by the appearance of inflammatory polyps with mucosal prolapse.[2] The common histological features include inflammatory granulation tissue in the lamina propria, proliferation of smooth muscle, and hyperplastic gland. Different terminologies such as inflammatory cloacogenic polyps,[3] inflammatory cap polyps,[4] and inflammatory myoglandular polyps,[5] describing similar histological features of prolapsing mucosal polyps, have been reported in the literature. We have identified polyps with histological features as prolapsing mucosal polyps in patients without clinical evidence of rectal mucosal prolapse. In the present study, we examined and analyzed a series of seven cases with such lesions in hope of clarifying the clinicopathological features of this rare entity.

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Methods

We retrospectively identified from the Database of Pathology in Chang Gung Memorial Hospital from 2002 to 2005 seven patients who had a colorectal polyp with a pathologic diagnosis of prolapsing mucosal polyp. All of these polyps were removed either via colonoscopy (n = 6) or transrectal excision (n = 1). The endoscopic images of these polyps were obtained from the records of the clinicians as well as the photos taken during endoscopic examination. Histological sections were re-examined by a pathologist (HYY) under light microscopy. In two cases, immunohistochemical staining was used to confirm smooth muscle fibers in the muscularis mucosae. Detailed histological features of each polyp were re-coded (absence or presence) by one of our authors (HYY). The first three codings were performed according to Tendler,[6] which included the major histological characteristics of (A) crypt abnormalities, including crypt elongation, distortion, branching, and hyperplasia; (B) fibromuscular obliteration of the lamina propria; and (C) thickening of muscularis mucosae with splaying and extension of muscle fibers vertically upwards into the lamina propria. Additional codings consisted of (D) the presence of mixed inflammatory cells and granulation tissue infiltration in the lamina propria, E) mucosal capillary abnormalities (congestion, hyalinization, thrombosis, dilation), F) hemosiderin deposition in the lamina propria, G)surface erosions with fully mature and normal epithelium, H) misplaced glands in mucosa, and I) presence of mucosal hemorrhage.

Results

Table 1 lists the clinical features of the patients. There were three male and four female patients. Their ages ranged from 30 to 86 years. Most of the patients presented with rectal bleeding. One patient (case #4) complained of constipation. Another patient (case #3), whose polyp was found and removed via colonoscopy during a physical checkup, was asymptomatic. None of the patients had diverticular disease, solitary rectal ulcer syndrome, or symptoms of mucosal prolapse. Colonoscopic polypectomy was performed in six patients. Another patient (case #5) had a recurrent polyp at the operative site 1 year later and underwent colonoscopic polypectomy. All of the polyps were located in the sigmoid colon or rectum and were larger than 10 mm in diameter. The heads of all the polyps were hyperemic with erosion of the surface (Fig. 1). All polyps had a long and paler pedicle (Fig. 1). Table 2 summarizes the histopathological findings. All of the polyps had histologic features of crypt abnormalities, inflammatory cell infiltration in the lamina propria, mucosal capillary abnormalities, and surface erosion. Histologic finding of misplaced glands in submucosa and mucosal hemorrhage (coding H and I) were the least common finding; only five out of seven polyps revealed such finding. Fig. 2 shows immunohistochemical staining of polyp from case 4 The strong staining of actin illustrates the extent of smooth muscle bundles in the lamina propria was noted. Fig. 3 shows the pictures of the characteristic histopathological findings.

Table 1. Clinical features and gross findings of 8 prolapsing mucosal polyps

Case id #	Age (y/o)	Sex	Treatment[a]	Symptoms[b]	Site[c]	Long pedicle	Size of polyp head (mm)	Erosions of polyp head
1	30	F	CP	RB	S	Presence	10 × 7 × 6	Presence
2	86	F	CP	RB	S	Presence	10 × 9 × 8	Presence
3	36	M	CP	Absence	S	Presence	15 × 12 × 10	Presence
4	46	F	CP	Constipation	S	Presence	18 × 15 × 15	Presence
5	62	M	TRE	RB	R	Absence	20 × 17 × 13	Presence
6	66	M	CP	RB	S	Presence	15 × 15 × 12	Presence
7	70	F	CP	RB	S	Presence	12 × 12 × 10	Presence

[a] CP: colonoscopic polypectomy; TRE: transrectal excision; [b] RB: rectal bleeding after bowel movements; [c] S: sigmoid colon; R: rectum.

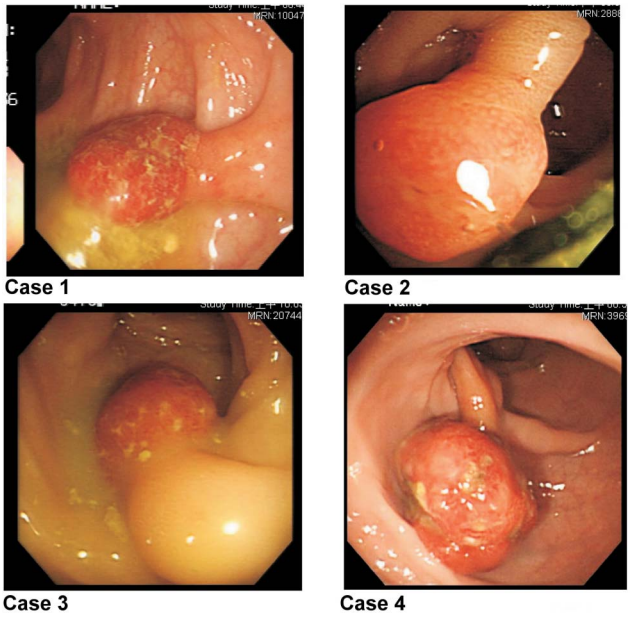

Fig. 1. Colonoscopic appearance of polyps in cases # 1, 2, 3, and 4. Note the elongated stalks and hyperemic heads with multiple superficial ulcerations.

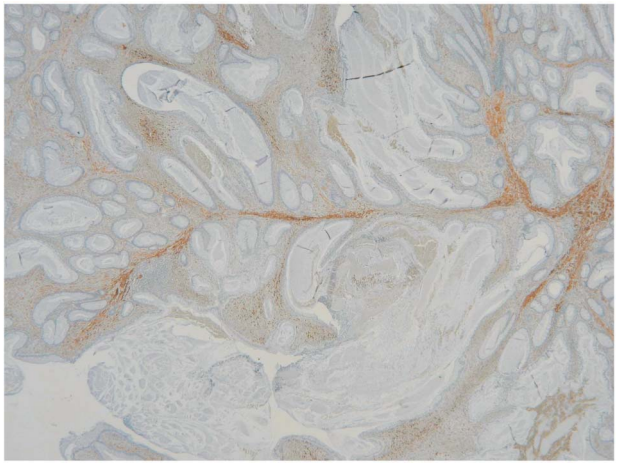

Fig. 2. Immunohistochemical staining of polyp from case 4. The strong staining of actin illustrates the extent of smooth muscle bundles in the lamina propria. (SMA, x40).

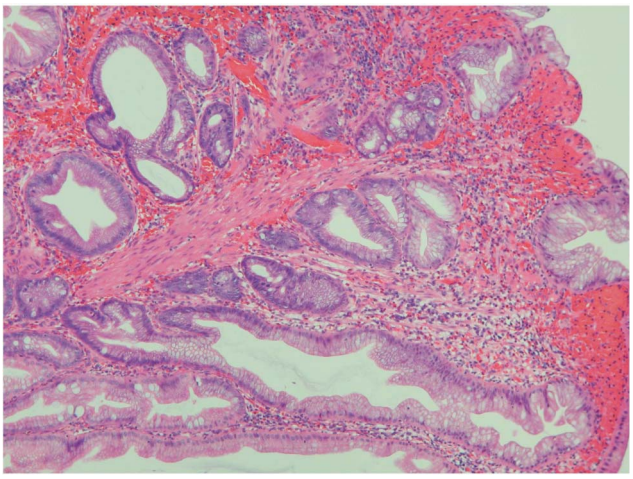

Fig. 3. High power microscopic view of polyp in case 1. Fibromuscular obliteration of the lamina propria is noted. (H & E, x100).

Discussion

The polyps in our study were larger than 1.0 cm in diameter in size and were located in the rectum or sigmoid colon. These findings are consistent with those of previous reports.[3,7] All of the polyps had a long stalk. The color of the stalk was similar to that of the underlying normal mucosa, but was paler than the polyp's hyperemic head. Although such features of polyps have not been reported before, the findings suggest that a round, big, hyperemic, and mosaic head plus a redundant and pale stalk may alert the endo-

Table 2. Histopathological findings in 7 prolapsing mucosal polyps

Histopathological findings[a]	Case id #							%
	1	2	3	4	5	6	7	
A. Crypt abnormalities	+	+	+	+	+	+	+	100
B. Fibromuscular obliteration of LP	+	+	+	+	+	+	+	100
C. Splayed muscularis mucosae into LP	+	+	+	+	+	+	+	100
D. Inflammatory cells infiltration in LP	+	+	+	+	+	+	+	100
E. Mucosal capillary abnormalities	+	+	+	+	+	+	+	100
F. Hemosiderin deposition in LP	+	+	+	+	-	+	+	86
G. Surface erosions	+	+	+	+	+	+	+	100
H. Misplaced glands in submucosa	-	+	+	+	-	+	+	71
I. Mucosal hemorrhage	+	-	+	+	+	-	+	71

[a] detailed description refered to the "Methods" section; LP = lamina propria.

scopists to a possible diagnosis of prolapsing mucosal polyps.

Mucosal prolapse syndrome was first described by Du Boulay et al in 1983.[7] They compared 19 cases of classical solitary ulcer of the rectum syndrome (SURS) with 16 cases of rectal mucosal prolapse. The similarities in the histological and histochemical features of these two groups of disorders led the authors to propose that the term "mucosal prolapse syndrome" should be used to describe these disorders in which mucosal prolapse is the common underlying pathogenetic mechanism. Since then, intestinal mucosa prolapse has been proposed as the underlying etiological mechanism in many gastrointestinal conditions such as solitary rectal ulcer syndrome,[8] diverticular disease,[9] prolapsing stomas,[10] inflammatory cloacogenic polyps,[11] and prolapsing mucosal polyps.[6,12] Bhathal et al[12,13] suggested that theses lesions were part of a spectrum with variations in histological appearance, and that they were all caused by mucosal prolapse. On the other hand, Nakamura et al[5] described a unique type of polyp which was independent of the mucosal prolapsing syndrome in clinical and histological features. They reported 32 pedunculated polyps with characteristics of cystic dilatation of glands and an excess of inflamed lamina propria. In their opinion, such inflammatory myoglandular polyps were different from those of mucosal prolapsing syndrome, which were usually villous, granular, or cauliflower-like in appearance, and never had long stalks.[5] Naohiko et al[14] also suggested that inflammatory myoglandular polyp be distinguished from other polyps because there is no association with mucous diarrhea and tenesmus, which are characteristic features of mucosal prolapse syndrome. Recently, Tendler et al[6] reported 15 cases of prolapsing mucosal polyps which were histologically similar to those of inflammatory myoglandular polyp except only one fifth of the polyps had a pedicle. Therefore, we suggest that the inflammatory myoglandular polyp might also be a variant of prolapsing mucosal polyp, with which no clinical presentations of mucosal prolapse are associated.

The histogenesis of prolapsing mucosal polyps remains unclear. The enlarged mucosal fold in diverticular disease[9] and in solitary rectal ulcer syndrome[15] may be elongated by the drag of the fecal stream. Polyps might arise from the elongated mucosa which is subject to episodic congestion and ischemia from repeated trauma. The hypothesis of mucosal prolapse-induced polyp formation might not be applicable to some cases without symptoms of mucosa prolapse. There could be other causes of these polyps.

Macroscopically, prolapsing mucosal polyps are similar to juvenile polyps. Juvenile polyps are found mostly in children and only occasionally in adults. Characteristic features of these polyps are pedunculated, cystic dilatation of glands, and an excess of inflamed lamina propria.[16] Juvenile polyps do not show proliferation of the muscularis mucosae into the lamina propria. Prolapsing mucosal polyps also can be differentiated from Peutz-Jeghers (P-J) polyps, which are characterized by their tree-like muscularis mucosae covered by colonic mucosa with essentially normal crypts.

In summary, prolapsing mucosal polyp is a histologically distinct type of colorectal polyp, which may be not associated with clinical evidence of rectal mucosal prolapse. The heads of the polyps are big, hyperemic, and characterized by multiple small ulcers or erosions on the surface. The pedicle is usually long and paler than the head. Unlike adenomatous polyps, prolapsing mucosal polyps have no potential for malignant transformation. However, incomplete excision of the polyp (for example, in our case #5) results in polyp recurrence.

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病例分析

黏膜性瘜肉脫垂 —7 病例報告

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目的 黏膜性瘜肉脫垂 (prolapsing mucosal polyps) 最早於 1985 年被提出，爲新定義之良性結腸瘜肉，合併黏膜脫垂症狀爲其特徵，本研究收集 7 例黏膜性瘜肉脫垂並 ???。

方法 本研究回顧並收集財團法人長庚紀念醫院之病理學資料庫於 2002 至 2005 年間，經診斷患有結腸瘜肉，且病理診斷結果爲黏膜性瘜肉脫垂之病患共 7 位。

結果 7 位病患中有 3 位男性、4 位女性，年齡分布自 30 至 86 歲。所有患者之瘜肉皆分佈於乙狀結腸或直腸位置，且皆無憩室症、直腸單一潰瘍症候群 (solitary rectal ulcer syndrome)、或黏膜脫垂等症狀。組織學觀察方面呈現下列一致的結果：隱窩 (crypt) 異常、固有層 (lamina propria) 之纖維肌肉閉塞症 (fibromuscular obliteration)、瘜肉內黏膜肌層外展至固有層內、發炎細胞滲透至固有層內以及黏膜微血管異常等。

結論 黏膜性瘜肉脫垂爲一罕見症狀，且組織學觀察結果與結腸瘜肉相異，並與直腸黏膜脫垂無關。

關鍵詞 黏膜性瘜肉脫垂、黏膜脫垂、結腸瘜肉、結腸腫瘤、結腸鏡檢查。