Endoscopic removal of leiomyoma of the colon

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Colonic leiomyoma is a rare condition. Smooth muscle tumours arising from the colon constitute only 3% of gastrointestinal leiomyomas. Complete endoscopic removal of the tumour is a problem because it is often submucosal in origin. We report a patient with a 5 mm leiomyoma of the colon that was successfully removed by conventional colonoscopic snare electrocauterisation, without complications.

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Introduction

Polyps are frequently encountered during colonoscopy, but these polyps are rarely of smooth muscle in nature. Smooth muscle tumours arising in the gastrointestinal tract are most often found in the stomach and small intestine, with only 3% arising from the colon.[1] The treatment of choice for most leiomyomas is surgical excision.[2] We describe a patient who had a colonic leiomyoma removed by endoscopic snare electrocautery.

Case report

A 75-year-old woman developed three episodes of acute per-rectal bleeding one week before admission. Her past medical history revealed that she was suffering from hypertension and was taking anti-hypertensive medication. The physical examination was essentially normal and the per-rectal examination did not reveal any mass or blood. A bedside proctoscopy showed a haemorrhoid but there was no sign of active bleeding. Her haemoglobin level was 11.5 g/dL (normal range, 11.5-15.5 g/dL) and the haematocrit was 0.35 L/L (normal range, 0.33-0.43 L/L), with a mean corpuscular volume of 88.6 fL (normal range, 76-100 fL).

On day 2, colonoscopic examination revealed a colonic polyp (Fig 1) and a first-degree haemorrhoid. There were no signs of active bleeding noted over the polyp and the haemorrhoid. The polyp was 5 mm in size, attached to the descending colon 10 cm distal to the splenic flexure. It was removed by conventional snare electrocautery.

Pathological examination showed a non-pedunculated pinkish nodule 5 mm across with a smooth surface. Section showed colonic mucosa covering low cellular fascicles of spindle cells in the submucosa. The spindle cells showed features of smooth muscle, with fibrillary cytoplasm and elongated or cigar-shaped

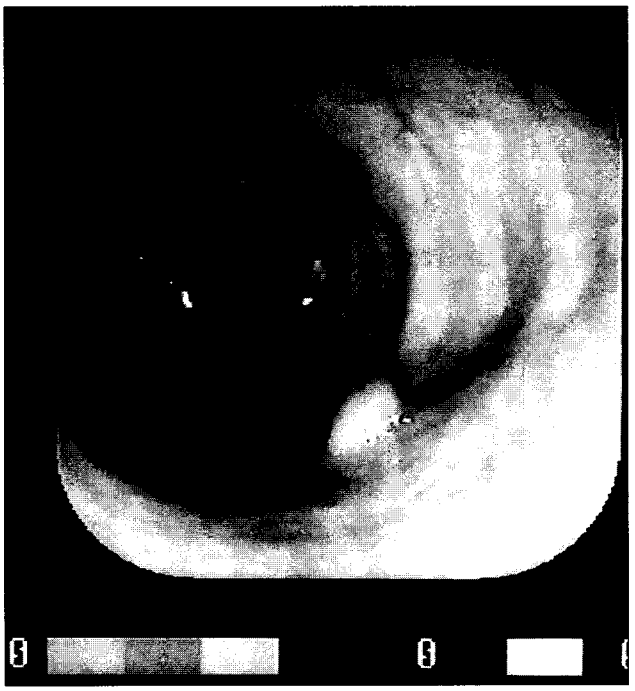

Fig 1. Colonoscopic features of the polyp in the descending colon. The polyp was sessile with a smooth surface and was approximately 5 mm in diameter

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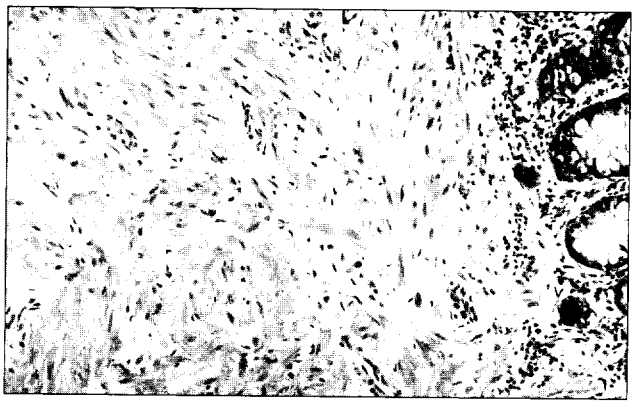

Fig 2. A section of the polyp shows colonic mucosa on the right margin with the submucosa consisting of fascicles of smooth cells with many capillary vessels. Note the fibrillary cytoplasm and elongated nuclei. Mitosis or necrosis are absent. (H&E, x 100)

nuclei (Fig 2). Many unremarkable capillaries were noted. There was no mitosis or necrosis. The lesion appeared to extend to the mucosal resection margin. The overlying mucosa was normal apart from a slight increase in chronic inflammatory cells and eosinophils. The pathological features were those of a benign colonic submucosal leiomyoma. The smooth muscle differentiation of the stromal cells was confirmed by positive immunohistochemistry reaction to smooth muscle actin and the muscle marker desmin. Reactions for the neural marker, S100, and the neuroendocrine marker, neuron-specific enolase, were both negative. Reaction for CD34, which is often positive in uncommitted gastrointestinal stromal tumours, was also negative. Therefore, the tumour could be classified as a gastrointestinal stromal tumour, smooth muscle type, and benign (leiomyoma).

At the follow up examination two months later, the patient was noted to be doing well after the polypectomy procedure; there was no further per-rectal bleeding.

Discussion

Most gastrointestinal leiomyomas occur in the stomach, but some may occur in the oesophagus, small intestine, colon, rectum, and anal canal. Those in the colon represent only 3% of all digestive tract leiomyomas.[1] The sigmoid colon and transverse colon appear to be the most frequent sites of tumour occurrence in the colon.[3] Most reported leiomyomas are sessile intraluminal or intramural tumours that usually cause bleeding, mechanical obstruction, or perforation. They can also present as a pedunculated extraluminal mass of the colon.[4] Many tumours are discovered incidentally.

Smooth muscle tumours constitute the largest group of primary gastrointestinal non-epithelial neoplasms. With more sophisticated immunohistochemical and ultrastructural studies, the phenotypic differentiation appears more complex. While the smooth muscle tumour still constitutes the largest group, there are tumours that show neural elements (gastrointestinal autonomic nerve tumours), dual differentiation of both smooth muscle and neural elements, or have no differentiation.[5] On light microscopy, many symptomatic or larger tumours cannot easily be categorised into the above groups and consequently, the general term of gastrointestinal stromal tumour has been suggested. The small, and sometimes multiple, subserosal or submucosal tumours that are often found incidentally, nearly always show smooth muscle differentiation, which is evident even on light microscopy, as in the present case. These tumours can arise from the muscularis propria, muscularis mucosae, or vessel-related smooth muscle cells. The following discussion is applicable to both smooth muscle tumours or gastrointestinal stromal tumours.

The biological behaviour of smooth muscle tumours varies from benign to locally aggressive, to highly malignant.[6] The biological behaviour may not be reflected by the histology as even benign-looking smooth muscle tumours may metastasise.[1] Thus, a combination of the site, tumour size, histological appearance, and mitotic count give the best predictor of behaviour.[7] It is also often impossible to assess the malignant potential from a biopsy sample. The pathological diagnosis may be benign, intermediate grade, or malignant smooth muscle tumour. The intermediate grade or borderline tumour comprises a subset of tumours of uncertain or low grade malignant potential.

Endoscopically, these tumours can present as pedunculated intramural or intraluminal polyps.[8] They may look like the more usual adenomas and have no endoscopic features to suggest a colonic leiomyoma.

The treatment of choice for most leiomyomas is surgical excision.[2] Wide resection is recommended for smooth muscle neoplasms of the digestive tract owing to the difficulty in differentiating benign from malignant tumours. Reports of the endoscopic removal of gastrointestinal leiomyomas are rare in the literature. In recent years, there have been two case reports describing the endoscopic removal of colonic leiomyomas. Friedman et al[8] removed a 6 mm sessile rectal leiomyoma, 25 cm from the anus, using electrocautery but no specific technique as to the use of hot biopsy forceps or snare electrocautery was described.

They suggested that, unlike small mucosal lesions, large deep submucosal lesions should not be removed by electrocautery. Cummings et al[9] removed a 4 cm mobile polypoid mass from the colon of an 8-year-old child who required a laparotomy within hours of the colonoscopy because of a perforation at the polypectomy site.

Kadakia et al[10] offer possible explanations for the scanty experience in the endoscopic removal of gastrointestinal leiomyomas. Firstly, the mostly intramural location of tumours makes the diagnosis difficult despite the taking of endoscopic biopsies using large biopsy forceps and the technique of repeated biopsies at the same site. Most patients require surgery to enable adequate diagnosis and removal. Secondly, the lesions may be very large, making endoscopic removal either unsafe or impossible. Finally, leiomyoma may not be easily distinguished from leiomyosarcoma even with endoscopic ultrasound and patients thought to have the latter should have a formal open surgical excision, if they are reasonable surgical candidates.

In summary, we report a case of colonic leiomyoma removed endoscopically without complications. Unfortunately, there is little information regarding the endoscopic removal of leiomyomas of the large bowel. We recognise that others may have performed such a procedure, but we have not come across such a report in a search of the literature. One cannot conclude that it is safe or unsafe to remove colonic leiomyomas endoscopically, although an occasional pedunculated leiomyoma will be removed endoscopically because it looks like an adenoma. We believe that small pedunculated polyps can be removed colonoscopically. Large pedunculated and sessile polyps thought to be intramurally located should be removed surgically to allow for complete tissue diagnosis.

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