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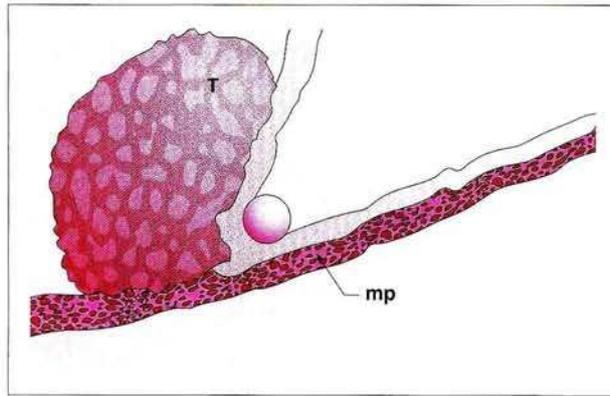
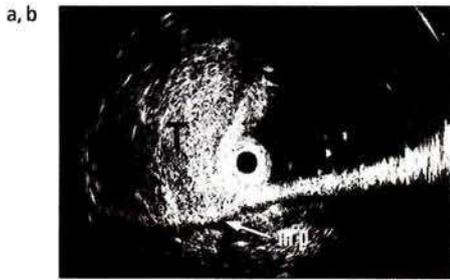
### Endoscopic Resection of a Colonic Lipoma Under Endoscopic Ultrasound Guidance

Recent trials have examined the usefulness of endoscopic resection in the treatment of colonic submucosal tumors, as an alternative to invasive surgery (1–4). Perforation attributed to snaring of the muscularis propria during endoscopic removal has also been reported (2). The present report describes a case in which endoscopic resection under endoscopic ultrasound guidance was used to remove a colonic lipoma.

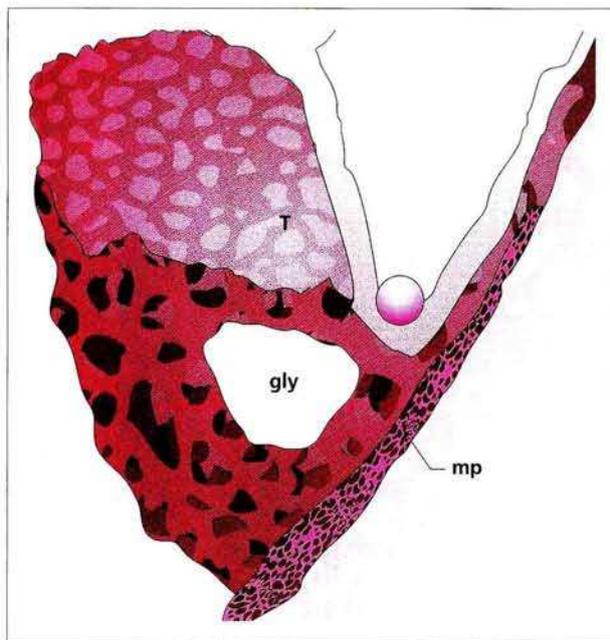
A 57-year-old man was admitted to hospital for examination and treatment of a submucosal tumor in the descending colon. Total colonoscopy showed a yellowish, semipedunculated polypoid lesion, with a

smooth surface, in the descending colon. The lesion was relatively soft, and showed a cushion sign. A biopsy showed only normal colonic mucosa. We inserted a flexible sonographic probe through the biopsy channel of the colonoscope during direct visualization of the lesion, and carried out endoscopic ultrasonography (EUS) using an ultrasonic miniprobe (SP-501, frequency 15 MHz, Fuji Photo Optical Co., Omiya, Japan). EUS demonstrated a slightly hyperechoic solid tumor in the submucosa, with no continuity with the muscularis propria layer (Figure 1). The lesion was diagnosed as a lipoma, and was considered to be resectable by endoscopic resection.

Endoscopic resection guided by the endoscopic ultrasound probe was carried out as follows. Using an endoscopic injector, about 10 ml of concentrated glycerin solution mixed with a small volume of epinephrine was injected underneath the lesion. Adequate separation (about 8 mm) of the margin of the hyperechoic tumor from the underlying muscle layer was then confirmed using EUS (Figure 2). A snare polypectomy was performed at the base of the lesion. There were no complications. Histological examination of the specimen confirmed a complete resection of the colonic lipoma.



**Figure 1a:** EUS demonstrates a hyper-echoic solid tumor in the submucosal layer, without continuity with the muscularis propria layer. **b** Diagram clarifying the EUS findings. mp: Muscularis propria; T: Tumor.



**Figure 2a:** EUS image of the lesion after injection of an epinephrine-supplemented glycerin solution into the submucosal layer. There is adequate separation of the margin of the hyper-echoic submucosal tumor from the underlying muscle layer. **b** Diagram clarifying the EUS findings. gly: Glycerin solution; mp: Muscularis propria; T: Tumor.

EUS is now an indispensable procedure, not only for diagnosing submucosal tumors but also in planning treatment (3–5). In addition, EUS can monitor intramural lesions during endoscopic resection, including whether adequate separation of the tumor from the underlying muscularis propria has been achieved by the injected solutions (5). Information of this type provided by EUS before resection is very useful in avoiding complications. Endoscopic resection is contraindicated if the lesion has infiltrated the muscularis propria or is located in the subserosa, or if the lesion is too large to snare. We believe that, because of its safety, endoscopic resection under endoscopic ultrasound guidance will become widely used in the treatment of submucosal tumors throughout the digestive tract.

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