

We present here our experience with three patients who underwent endoscopic examination of the stomach for reasons unrelated to tumor diagnosis or treatment. They were all found to have submucosal tumors as incidental findings. Endosonographic examination showed that these tumors originated from the muscularis propria layer. We injected 4–6 ml of saline solution into the submucosal layer before a 5-mm incision was made into the mucosal layer on top of the tumor using a needle-knife, while avoiding cutting into the tumor itself. An insulated-tip knife was used to extend the incision, according to the tumor size, and the tumor was then enucleated using the insulated-tip knife and biopsy forceps (Figures 1, 2).

All three tumors were resected without significant hemorrhage, and subsequent clinical investigations revealed no signs of perforation. Histological examination confirmed the diagnosis of gastrointestinal stromal tumor (GIST) in all three patients. The tumors were all classified as “very low risk” or “low risk”, based on the criteria for GIST classification [1].

This result would probably not have been achieved by any other diagnostic method except for surgical exploration. The mainstay of treatment for localized GIST is surgery, but it is questionable whether a surgical procedure is really necessary in such “low risk” cases. We confirmed the observation of Park et al. [2] that endoscopic resection of these tumors is a feasible and low-risk form of treatment. A recent study by Rösch et al. [3] on the resection of submucosal tumors excluded tumors that originated from the muscularis propria, in order to prevent perforation.

Is endoscopic enucleation sufficient treatment for these tumors, however? We consider a solely endoscopic resection as being adequate only in a low-risk situation, where a benign course is probable [4]. In our opinion, surgical therapy should follow if histological examination

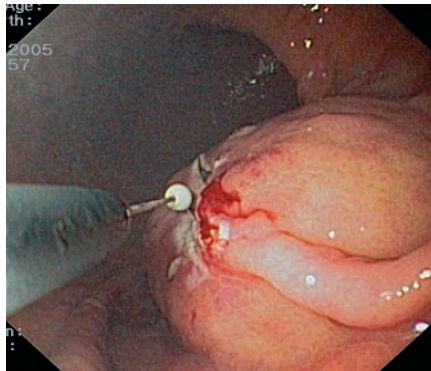


Figure 1 An incision was made in the mucosal layer, on the top of the tumor, after injection of saline solution.

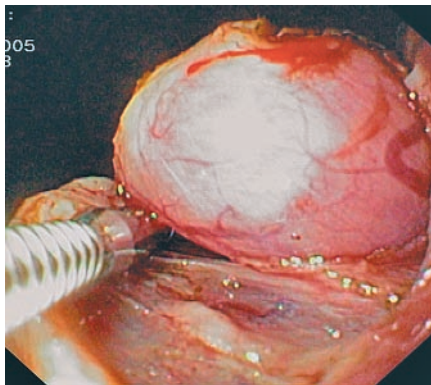


Figure 2 Further maneuvers with forceps and an insulated-tip knife were used to cut the tumor out of the muscularis propria layer.

of the specimen shows a higher mitotic index than is consistent with a “low-risk situation”.

#### Competing interests: ■

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#### References

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- <sup>2</sup> Park YS, Park SW, Kim Tlet al. Endoscopic enucleation of upper-GI submucosal tumors by using an insulated-tip electro-surgical knife. *Gastrointest Endosc* 2004; 59: 409–415
- <sup>3</sup> Rösch T, Sarbia M, Schumacher Bet al. Attempted endoscopic en bloc resection of mucosal and submucosal tumors using insulated-tip knives: a pilot series. *Endoscopy* 2004; 36: 788–801
- <sup>4</sup> Nilsson B, Brümmering P, Meis-Kindblom JMet al. Gastrointestinal stromal tumors: the incidence, prevalence, clinical course, and prognostication in the pre-imatinib mesylate era. *Cancer* 2005; 103: 821–829

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