Perforation posterior to endoscopic band ligation of a gastric submucosal tumor

In a 45-year-old woman with epigastric discomfort for 1 year, upper gastrointestinal endoscopy and endoscopic ultrasonography (EUS) showed a hypoechoic solid mass originating from the muscularis propria of the posterior wall of the gastric fundus (Fig. 1). EUS revealed that this 0.8 × 0.6 cm mass was probably a gastrointestinal stromal tumor (GIST) because of its morphological characteristics; the tumor was growing towards the gastric lumen and was partly connected with the muscularis propria.

The patient underwent band ligation of the submucosal lesion, using a standard endoscope (Olympus GIF-XQ240 Gastroscope, Olympus Optical Co., Tokyo, Japan), to which was attached a ligator cap with a diameter of 1.0 cm. The lesion was sucked sufficiently into the ligator cap and the rubber band (6 Shooter Saeed Multi-Band Ligator, Wilson-Cook Medical, Winston-Salem, North Carolina, USA) was released to fully ligate the lesion (Fig. 2). After the procedure, the patient was prescribed esomeprazole 20 mg twice daily. However, 41 hours after band ligation, the patient developed severe epigastric pain that persisted for 34 hours, after which the patient attended the hospital. On physical examination, she had rebound tenderness in the upper abdomen. An abdominal X-ray revealed intraperitoneal free air, suggestive of a gastrointestinal perforation. Endoscopy revealed that the perforation occurred in the present case and in the two cases with perforation after band ligation reported by Sun et al. [4].

Thus perforation is avoided as the tumor drops off. If all the layers of gastric wall including the serosa are ligated, the rapid necrosis and sloughing of the lesion might result in acute perforation. This may have occurred in the present case and in the two cases with perforation after band ligation reported by Sun et al. [4]. In conclusion, endoscopic band ligation is a relatively safe approach for removal of submucosal tumors located in gastric muscularis propria. However, to avoid the complication of perforation, it is vital that only tumors with the appropriate volume are selected for this approach and the sucking force is carefully controlled so that a minimum part of gastric wall is ligated.

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