Endoscopic closure of a gastropleural fistula

A 25-year-old woman underwent a sleeve gastrectomy for morbid obesity. Over the next 6 weeks, she was hospitalized three times for recurrent pneumonia. She presented to our hospital with the same problem 8 weeks after the surgery. Computed tomography of the chest showed consolidation of the left lower lobe and a left-sided pleural effusion (Fig. 1). A thoracentesis drained purulent fluid; therefore, a thoracostomy tube was placed. Given the abrupt onset of the recurrent pneumonia after the surgery, a fistula was suspected. An upper gastrointestinal series showed extravasation of contrast from the stomach into the left hemithorax, so that a diagnosis of gastropleural fistula was established.

At endoscopy, the gastric opening of the fistula was identified (Fig. 2). Under fluoroscopic guidance, a 0.35-wire was advanced into the left pleural space. After the injection of contrast, extravasation was observed at the stomach, pleural space, and thoracostomy tube (Fig. 3). A cytology brush was used to abrade the tract and facilitate closure. The gastric opening was then fulgurated with argon plasma cautery, and the tract was sealed with human fibrin (Fig. 4). The fibrin was injected through a triple-lumen ramp, starting at the pleural space and ending at the gastric opening. The procedure was finalized by deploying an over-the-scope clip at the gastric opening (Fig. 5). The patient was discharged two days later and has remained asymptomatic since the procedure, which is shown in Video 1.

Gastropleural fistulas are infrequent. The few reported cases suggest such underlying causes as malignancy, trauma, and complications of abdominal and thoracic surgery [1, 2]. Recently, bariatric surgery has been associated with gastrobronchial fistula, which is a slightly different entity but with identical pathophysiology [3]. The treatment of gastropleural fistula to date has been strictly surgical [4, 5]. We report a novel endoscopic approach in which a combination of established endoscopic techniques and recent accessories was used for the successful treatment of this rare condition.

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Competing interests: None

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References

Fig. 1 Computed tomographic scan of the chest showing left lower lobe consolidation and pleural effusion in a 25-year-old woman at 8 weeks after a sleeve gastrectomy for morbid obesity.

Fig. 2 Gastric opening of the fistula.

Fig. 3 Extravasation of contrast at three different sites (arrows): the stomach, left pleural space, and thoracostomy tube.

Fig. 4 Human fibrin sealant used to close the fistula.

Fig. 5 Over-the-scope clip deployed at the gastric opening of the fistula.

Video 1
Endoscopic closure of a gastropleural fistula.

Bibliography
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