Endoscopic closure of a gastropleural fistula

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.

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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Video 1

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