A pediatric case of endoscopic fistula closure using a polyglycolic acid sheet

Recurrent tracheoesophageal fistula is a common postoperative complication of esophageal atresia [1]. The surgical treatments utilize muscle and pleural flaps [2]. Furthermore, endoscopic fistula closure with fibrin glue, a biomaterial, can be achieved by epithelializing, promoting circulation, and inhibiting leukocyte infiltration [1]. In adults, endoscopic fistula closure using a polyglycolic acid (PGA) sheet is useful for treating postoperative esophageal anastomotic fistulas [3]. However, no such pediatric reports are available.

Herein, we report the first pediatric case of endoscopic fistula closure with PGA sheet (Video 1).

A 3-year-old girl was admitted with the chief complaint of persistent fever and cough after eating. She underwent postnatal thoracoscopic radical esophagectomy for type C esophageal atresia. Owing to postoperative complication, she underwent multiple endoscopic balloon dilations. Esophagogastroduodenoscopy revealed an esophageal fistula on the oral posterior wall of the esophageal anastomosis.
Tracheal esophagography (▶ Fig. 2) revealed tracheoesophageal fistula.

First, mucosa around the fistula was cauterized using hot biopsy through a single-channel upper gastrointestinal endoscope (▶ Fig. 3). Subsequently, small pieces of PGA sheet (Neoveil; Gunze Co., Osaka, Japan) were grasped with biopsy forceps, immersed in fibrinogen solution, and used to fill the fistula through the scope (▶ Video 1). Finally, fibrinogen and thrombin solutions of fibrin glue (Beriplast P Combi-Set; CSL Behring Pharma, Tokyo, Japan) were applied to the PGA sheets (▶ Fig. 4).

Endoscopy 3 weeks later confirmed fistula closure (▶ Fig. 5), and oral intake by the patient was possible without symptoms.

Fibrin glue is generally used in the treatment of pediatric tracheoesophageal fistula. PGA sheets acting as tissue-regenerative scaffolds may effectively help in the healing process, as granulation tissue can fill and cover the fistula [3].

References


Competing interests

The authors declare that they have no conflict of interest.