

Spiration Valve to Manage Esophago-Bronchial/Pleural Fistulas: A Novel Approach

FNU Deepali, M.B.B.S.¹, Prabh G. Singh, M.B.B.S.¹, Michal Reid, M.D.², Louis Wong Kee Song, M.D.¹, Navtej Buttar, M.D.¹
¹Division of Gastroenterology & Hepatology, ²Division of Interventional Pulmonology, ^{1,2}Mayo Clinic, Rochester, MN

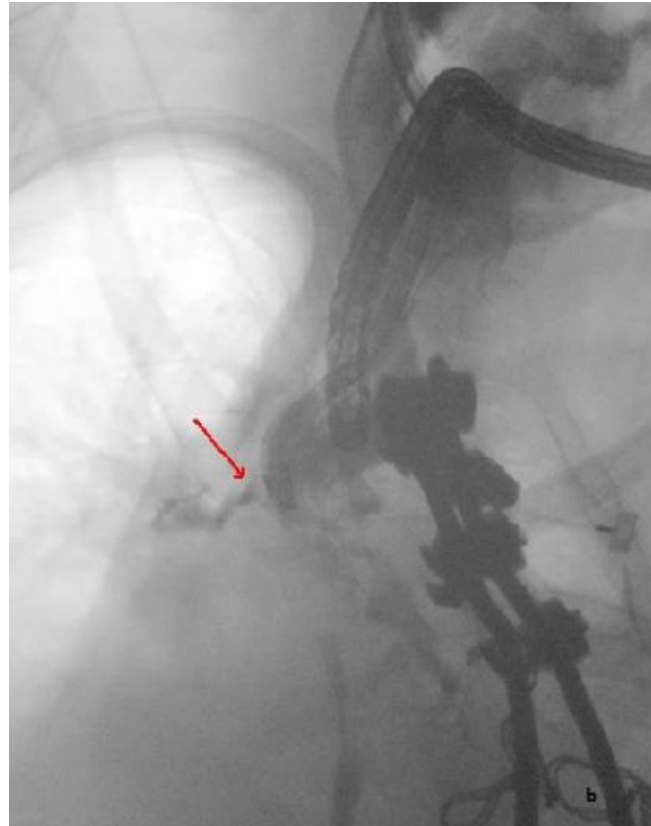
BACKGROUND & AIMS

Esophago-bronchial/pleural fistulas are the source of considerable morbidity & mortality. Surgical management is not possible in all patients and recurrence after conventional methods like clipping is common. Our aim was to develop novel endoscopic strategies to treat these fistulas where conventional methods either failed or were not advised.

METHODS

A case report presented here illustrates this concept- in January 2022, a 39-year-old male with an esophago-bronchial fistula was treated with a spiration valve. He was diagnosed in 2020 when he presented with an esophageal diverticulum with a fistulous opening at its base. This was treated with a padlock clip which subsequently migrated. A repeat padlock clip was placed, which migrated again with the formation of exuberant granulation tissue likely related to the padlock clip. Considerable edema was noted, and a feeding tube was placed before deciding about further intervention. A decision was made to use a combined endoscopic-bronchoscopic approach to place a spiration valve. Valve placement was challenging and was accomplished under fluoroscopic, endoscopic, and bronchoscopic guidance. Only a small amount of contrast leak was noted, and that too only when contrast was injected under pressure in the esophagus.

FIGURE 1



Fluoroscopic esophagogram showing no contrast leak into the tracheobronchial tree.

FIGURE 2



Fluoroscopic image taken 2 months after the procedure- the spiration valve can be seen in situ.

FIGURE 3



Endoscopic image of a successfully placed 9mm Spiration Valve.

RESULTS

Immediate clinical success was noted. A fluoroscopic esophagogram after 14 days showed no oral contrast entering the tracheobronchial tree (Fig 1). Further, follow-up esophagograms in February and March 2022 showed persistent but considerably improved sinus tract adjacent to the spiration valve (Fig 2).

CONCLUSIONS

Spiration valve placement is an effective way to manage esophago-bronchial/pleural fistulas, especially where conventional methods have either failed or were not feasible. Trials on more cases are required to see the efficacy of this novel approach.