

# Closure of Refractory Gastrocutaneous Fistula with Endoscopically Guided Percutaneous Suturing with the Use of SpyBite® Biopsy Forceps

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## Introduction

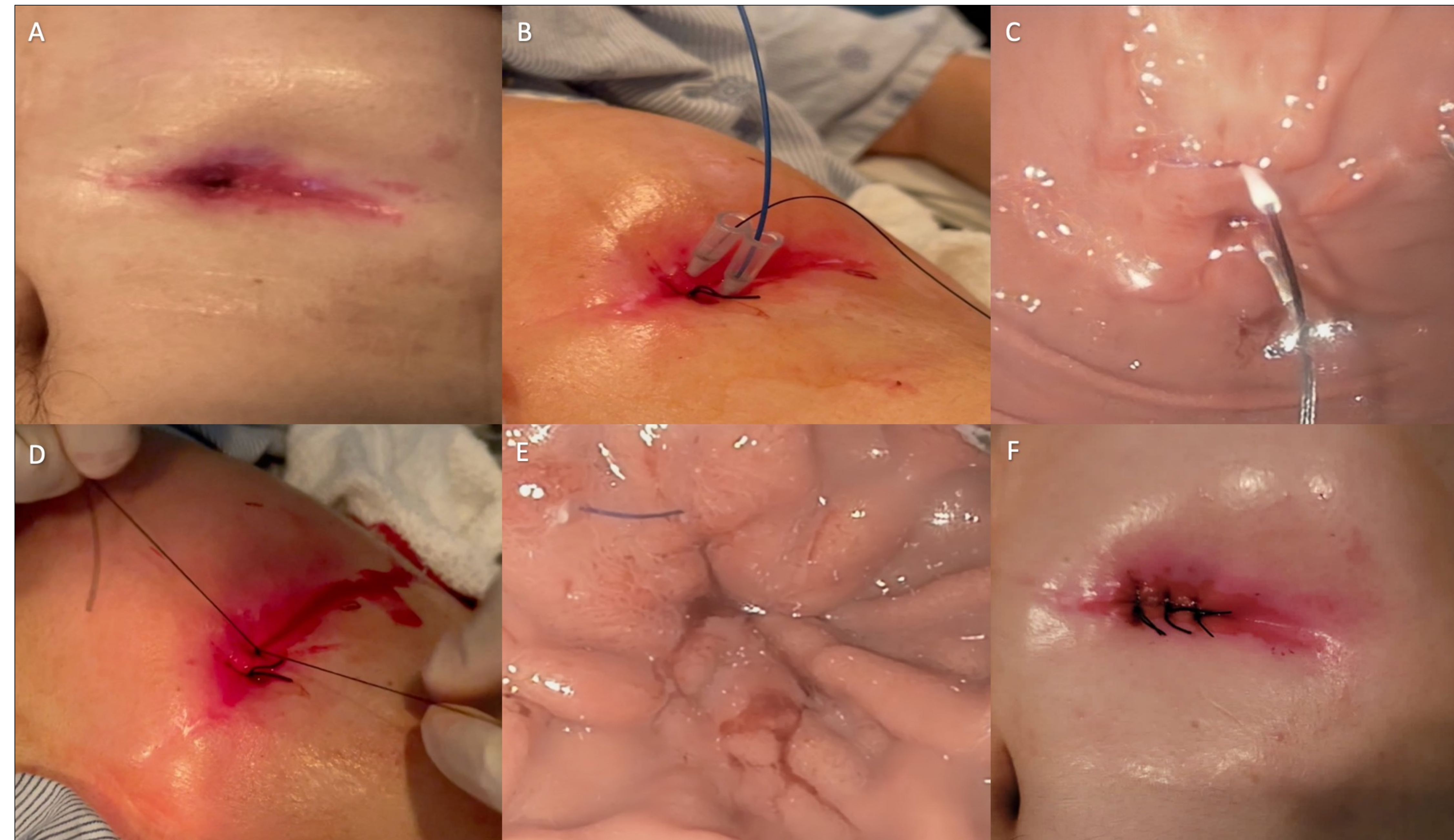
- Persistent gastrocutaneous fistula (GCF) is a rare but well-known complication of long-term Percutaneous Endoscopic Gastrostomy (PEG) tube use.
- To avoid invasive surgery, endoscopic closure has been used as an initial step for treatment but is not always successful.
- We present a case of successful GCF closure with a novel endoscopically guided percutaneous suturing technique using SpyBite® biopsy forceps.

## Case Presentation

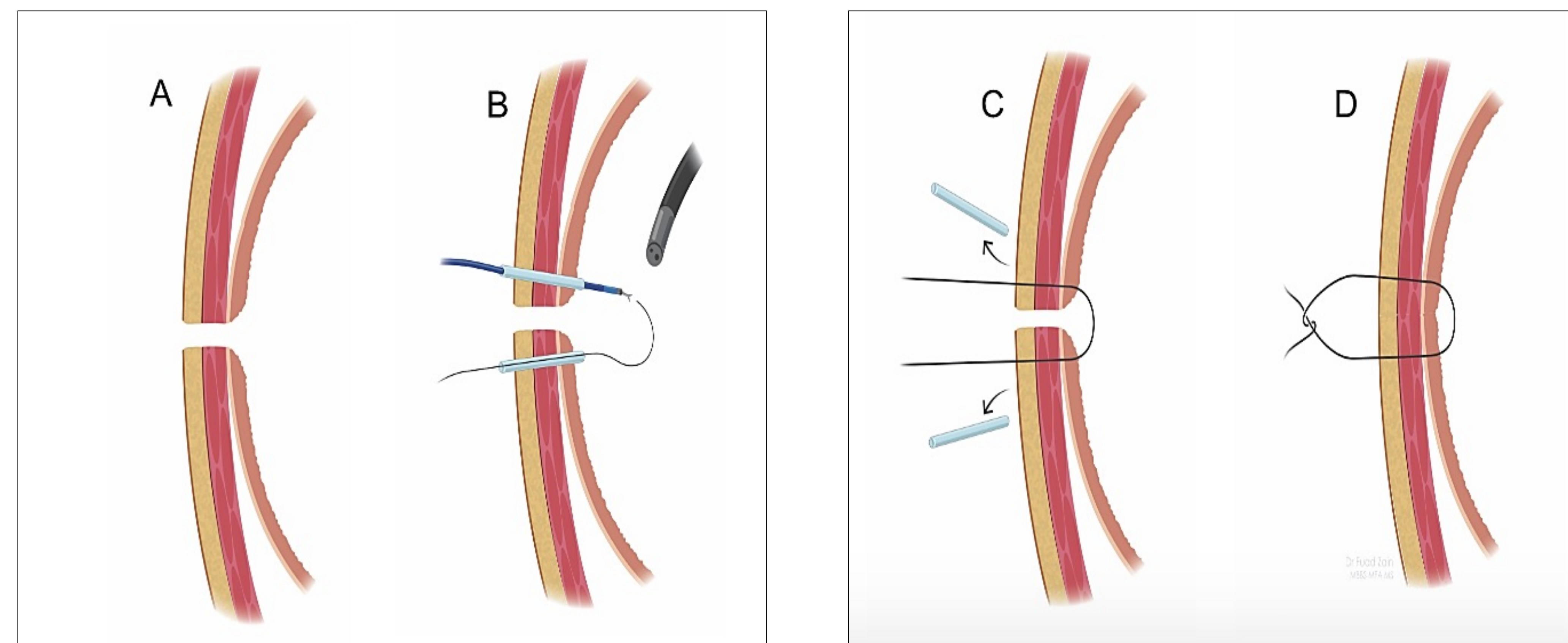
- A 28-year-old male with a history of cystic fibrosis complicated by malnutrition, requiring PEG tube placement since childhood.
- After starting cystic fibrosis therapy with elxacaftor/tezacaftor /ivacaftor and achieving optimal nutritional status, his PEG tube was removed.
- He developed a persistent GCF, and initial attempts at closure with over-the-scope-clip and endoscopic suturing failed.

## Procedure

- GCF closure was performed by endoscopically guided percutaneous suturing using SpyBite® forceps.
- The patient received adequate sedation and prophylactic antibiotics prior to the procedure.
- Under endoscopic guidance, two 16G long angiocaths were advanced into the gastric lumen, one caudal and one cranial to the fistula tract in a sterile fashion. (Figure 1- B)



**Figure 1.** Step-by-step demonstration of endoscopically guided percutaneous suturing with the use of SpyBite® biopsy forceps for closure of a persistent GCF.



**Figure 2.** A) The gastrocutaneous fistula was visualized. B) Two 16G long angiocaths were advanced into the gastric lumen. A 2-0 silk suture was advanced through one of the angiocaths and externalized through the adjacent angiocath with a SpyBite biopsy forceps C) The suture was externally secured, and the two angiocaths were removed over the suture. D) A loop was tied down using a surgical knot to close the fistula.

## Procedure

- A 2-0 silk suture was advanced through one angiocath and externalized using SpyBite® biopsy forceps through the other angiocath. (Figure 1- B & C)
- The angiocaths were removed over the suture and the loop was tied down using a surgical knot. (Figure 1- D & E)
- This process was repeated twice along the fistula tract, 5mm from each other. (Figure 1 –F)
- Internal closure of the GCF was then performed using endoscopic suturing. One interrupted and two running sutures were placed along the border and cinched to reinforce the site.
- There were no immediate adverse events or delayed skin inflammation. The patient had no further leakage from the GCF site at follow-up two months later.

## Discussion

- With the emergence of novel cystic fibrosis therapies, the dependence on feeding tubes has decreased. Unfortunately, these patients, often with life-long PEG tubes, are at high risk of GCF formation after removal.
- Given the difficulty in closing GCF, we advocate a multimodality approach using transcutaneous and endoscopic suturing.
- In previously described endoscopically guided percutaneous suturing, the suture loop is externalized through the GCF tract or the mouth. Our technique differs in using SpyBite® forceps to externalize the suture through a second catheter.
- This method is simple and provides a safe and effective alternative for the closure of refractory GCF.