

A new suturing procedure for closure of a gastrocutaneous fistula

Gastrostomy is a useful technique for feeding patients. Gastrostomy tubes are removed when patients recover an acceptable nutritional status and can eat again. Usually, the puncture site closes spontaneously in a short time; however, in some cases, a gastrocutaneous fistula can persist and may affect the patient's quality of life. Different closure techniques are available, such as clip placement, with or without electrochemical cautery [1], use of biological fibrin glue [2], or complex percutaneous endoscopic suturing [3]. We have developed a novel and easier suturing procedure for closure of a gastrocutaneous fistula.

A 60-year-old man was treated with chemoradiotherapy for a tumor of the tonsil. Gastrostomy feeding was planned along with this, with introduction of a feeding tube using a classical surgical procedure prior to his anticancer treatment. Enteral feeding was continued throughout his oncologic treatment and until 1 year after the end of his chemoradiotherapy, because of side effects and ongoing difficulties swallowing. As is more often the case after a surgical procedure, the puncture site did not close after removal of the tube. The resulting gastrocutaneous fistula was associated with skin irritation, pain, and therefore a poorer quality of life. First, we unsuccessfully attempted closure with a technique that used biological fibrin glue [2]. We then offered the patient a newly developed percutaneous endoscopic suturing procedure using a double-needle gastropexy device (● **Fig. 1**) from a gastrostomy kit (Freka-Pexat, 15 Fr; Frese-nius Kabi, Bad Homburg, Germany) [4]. At endoscopy, a loop was inserted through needle 1; then a second suture thread (we used polydioxanone [PDS] plus anti-bacterial silk threads of diameter 1) was inserted through needle 2 and passed through this loop. As a result, by crossing the two suture threads within the one process, we were able to suture the gastric wall to the anterior abdominal wall and incorporate the fistula within the stitches. (● **Fig. 2**; ● **Video 1**)

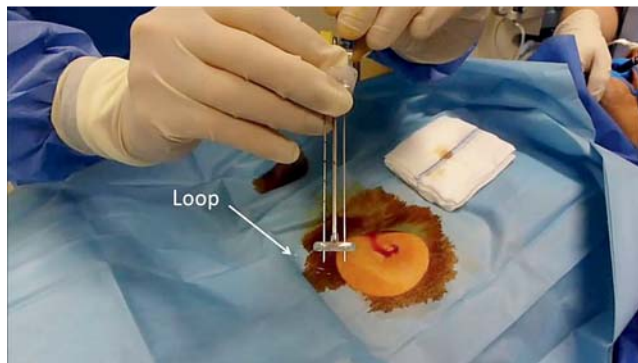


Fig. 1 The double-needle gastropexy device and preloaded suture loop.

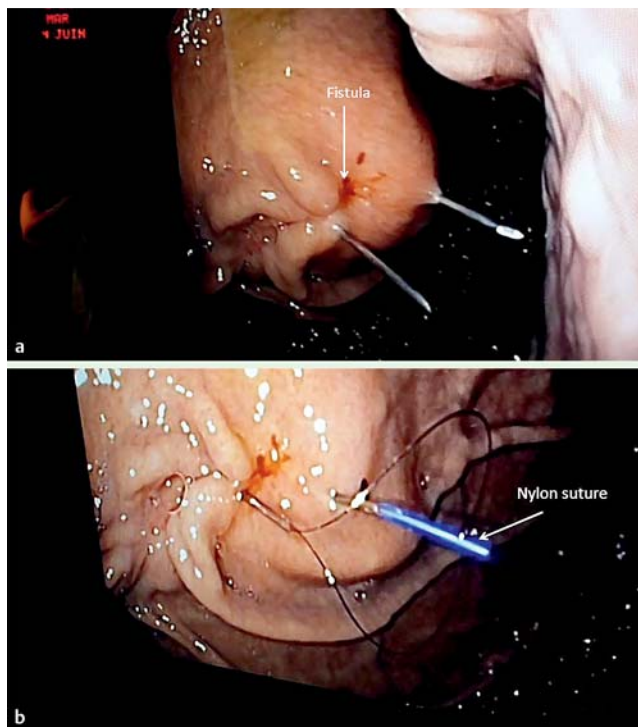


Fig. 2 Endoscopic images showing: **a** the two puncture points on either side of the fistula as the first suture is created; **b** the nylon thread being introduced via needle 2 and crossing through the loop of thread that had been previously introduced through needle 1.

We did not commence the patient on a proton pump inhibitor. The stitches were removed after 3 weeks, and when he was examined 3 months later, the patient's fistula had closed correctly and he had had no further symptoms.

Endoscopy_UCTN_Code_TTT_1AO_2AI

Competing interests: None

Video 1

Percutaneous endoscopic suturing procedure using a double-needle gastropexy device showing: the double-needle gastropexy device with preloaded loop; the punctures being made on either side of the fistula; endoscopic views of the sutures, with the introduction of the preloaded loop through needle 1, then the introduction of the nylon thread through needle 2, which is passed through the first suture loop; and the two sutures forming a cross to incorporate and close the fistula as the gastric wall is tethered to the anterior abdominal wall.

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