

## Endoscopic treatment of rectovesical fistula after colorectal anastomosis: tube-in-tube endoscopic vacuum therapy method

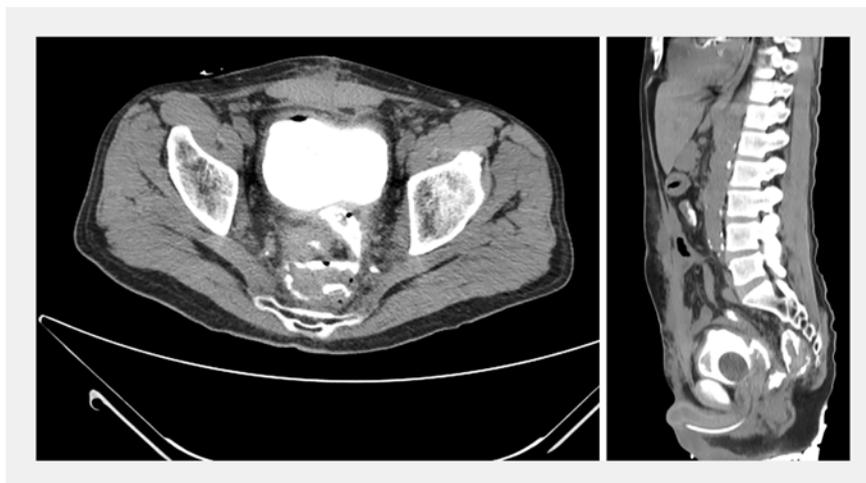
A 56-year-old man underwent rectosigmoidectomy, partial cystectomy, and derivative colostomy for locally advanced distal rectal adenocarcinoma, persistent after chemoradiation. On the 25th post-operative day, he presented clinical worsening and increased abdominal drain output, and was submitted to tomography with intravesical contrast infusion, which showed a rectovesical fistula communicating with the surgical drain (► **Fig. 1**).

Rectoscopy showed a semi-circumferential leak of the colorectal anastomosis. Endoscopic exploration of the pelvic cavity allowed removal of clots and necrosis, and cleansing with 3% hydrogen peroxide was done. While the surgical drain was in place, tube-in-tube endoscopic vacuum therapy in the intracavitary position was performed. A guidewire was inserted through the pelvic drain and captured with a grasper. The guidewire was then used to introduce a 14-Fr Levine tube into the surgical drain. Continuous aspiration with 125 mmHg negative pressure was started (► **Video 1**). The pump was disconnected daily so tubes could be used to irrigate the cavity [1–3].

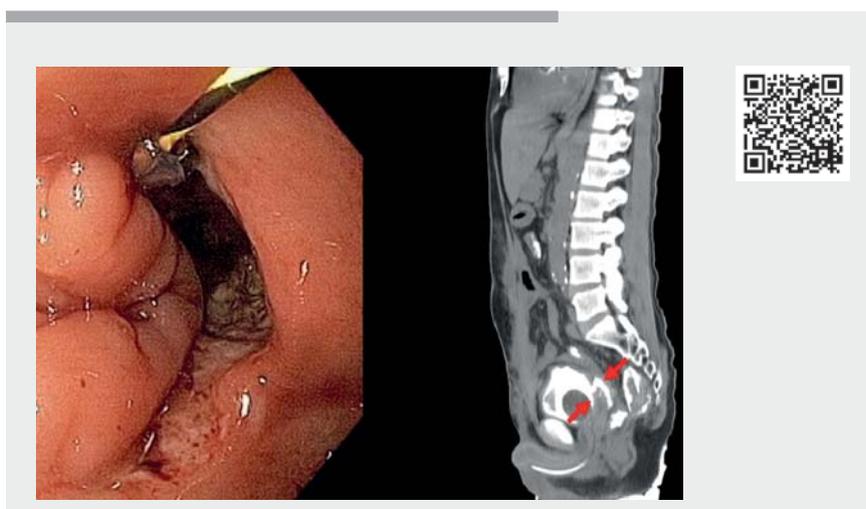
After 10 days, a new rectoscopy showed significant reduction of leakage and the pelvic cavity, with granulation tissue formation. A full-thickness endoscopic clip was deployed, achieving complete closure of the colorectal anastomotic fistula (► **Fig. 2**). The decision was to maintain the intracavitary tube-in-tube endoscopic vacuum therapy to drain the urinary fistula.

After another 10 days, a third rectoscopy showed sustained closure of the anastomotic fistula. An ultra-slim endoscope (4.9 mm) was inserted through the drain path, which was thin and long, mimicking a remaining “cystostomy.” Negative pressure was turned off and a Penrose drain was left near the vesical wall.

Repeat tomography with intravesical contrast infusion 25 days later showed a



► **Fig. 1** Computed tomography with intravesical contrast infusion showing rectovesical fistula communicating with surgical drain.



► **Video 1** Tube-in-tube endoscopic vacuum therapy method (TT-EVT).

well-positioned clip without extravasation of contrast. The pelvic drain was removed and the patient discharged. Control rectoscopy confirmed a defective closure and allowed reconstructive surgery.

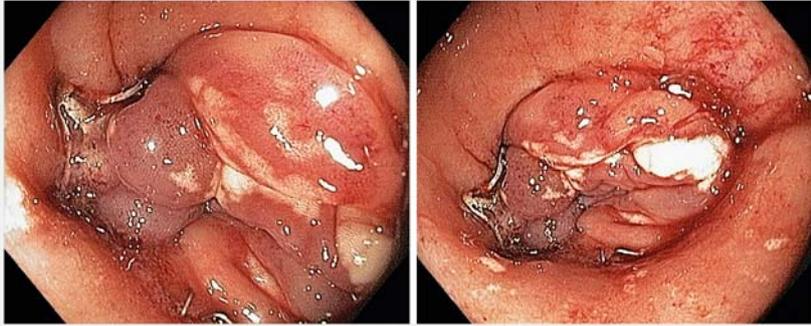
Tube-in-tube endoscopic vacuum therapy can be done through previously placed surgical drains into the intracavitary position. It is an effective, easy-to-

assemble, and low-cost treatment option even for complex digestive fistulas.

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### Competing interests

The authors declare that they have no conflict of interest.



► **Fig. 2** Full-thickness endoscopic clip deployed, achieving complete closure of colorectal anastomotic fistula.

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