



Endoscopic management of colovaginal fistulas in advanced cancer patients

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Background and Aims: Colovaginal fistula (CVF) in cancer patients can cause significant morbidity. In addition to causing local symptoms and infections, the constant stool leakage contributes to a poor quality of life, psychological distress, and possible social isolation. Patients with CVFs often have advanced disease, poor nutrition, and complex anatomy, making them poor candidates for major surgical interventions. Advancement in endoscopic tools has made endoscopic management possible. Endoscopic management is less invasive, is associated with prompt recovery, and can significantly improve the quality of life of patients and possibly allow them to resume systemic therapy.

Methods: In this video case series, 3 cases of CVF patients treated endoscopically are presented to demonstrate the use of the currently available tools and techniques. The strategy used for the closure of the 3 CVFs was dependent on the size and etiology of the fistulas.

Results: Technical and clinical success was achieved in all 3 situations. There were no procedure-related adverse events.

Conclusion: These cases demonstrate the use of the cap to perform vaginal endoscopy; the use of the over-the-scope clips, covered stents, and endoscopic suturing; and how they can facilitate the closure of fistulas in patients who are poor surgical candidates. (VideoGIE 2019;4:279-83.)

BACKGROUND AND AIMS

Colovaginal fistulas (CVFs) are pathologic epithelium-lined communications between the colon and vagina. They are commonly known to result from obstetric and operative trauma, colorectal and pelvic surgeries, infectious and inflammatory conditions like diverticulitis and Crohn's disease, respectively, and, less commonly, from radiation exposure (incidence range, 0.3%-6%)¹ and cancer. Small fistulas can be asymptomatic; however, when symptomatic, they cause passage of flatus and stool through the vagina, malodorous vaginal discharge, diarrhea, tenesmus, and an anorectal burning sensation, which can result in significant social and psychological distress. One of the simple diagnostic tests used is the injection of methylene blue into the rectum while a tampon is in the vagina. Staining of the tampon with methylene blue after being retained in the vagina for 15 to 20 minutes confirms the presence of a CVF.

Rectovaginal fistulas (RVFs), abnormal communications between the rectum and vagina, compose about 5% of anorectal fistulas.² They are classified into simple and complex,

depending on the size and location of the fistula. Simple RVFs have a diameter <2.5 cm and are usually located in the lower and middle third of the vagina. These kinds of fistulas are typically caused by trauma or infection. Complex RVFs have a diameter >2.5 cm and are located in the upper third of the vagina. These are typically caused by Crohn's disease, irradiation exposure, and malignancy.

Treatment of CVFs requires a multidisciplinary approach. Fistulas are usually repaired surgically if the patients can tolerate the surgery, which may include complete excision of the fistula tract, followed by multilayered closure by reapproximation of tissue surfaces.

CVFs have a considerable recurrence risk. This can be challenging because the surgery success rate decreases with each additional repair attempt. The first surgical repair attempt has a success rate of 88%, but this decreases to 85%, 45%, and 55% after previous 1, 2, and 3 repair attempts, respectively.³

The postoperative adverse events of CVFs were studied by McNevin et al.⁴ In that study, 16 patients with RVF were surgically treated. Two patients (12.5%) experienced fecal

incontinence postoperatively, and 5 patients (31%) had dyspareunia postoperatively.

When the patient is a poor surgical candidate, endoscopic or minimally invasive techniques are considered. Chen et al⁵ reported a case of RVF in a 22-year-old woman, which was successfully repaired by stratified suture with the use of transanal endoscopic microsurgery. In that case, the fistulous tract was removed, and the edges of the fistula were closed by simple continuous suturing. John et al⁶ reported a case of RVF secondary to diverticular disease in a 77-year-old woman. The fistula was seen in flexible sigmoidoscopy and was successfully treated with 2 endoscopically placed clips.

Recent advancements in endoscopic tools are providing more options to tackle this problem endoscopically, especially in patients with advanced cancer for whom surgery carries significant morbidity and mortality. In this article and video, we demonstrate various tools and techniques currently available to the endoscopist to consider when tackling this problem (Video 1, available online at www.VideoGIE.org).

Until more data are available, some of these techniques may be appropriate mostly in patients with short-term survival, inasmuch as data on the long-term outcome are lacking.

METHODS

Patient 1

A 56-year-old woman with a recent diagnosis of stage 4 rectal cancer presented because of a few months of rectal bleeding and 2 weeks of stool coming out of her vagina, consistent with an RVF (Fig. 1). The fistula appeared to have developed secondary to malignant tumor invasion. Sigmoidoscopy was performed and demonstrated the rectal end of the fistula (Fig. 2). Vaginal endoscopy is usually difficult because the vagina cannot be inflated; thus, the mucosa often covers the tip of the endoscope and impairs visibility. The use of the cap overcomes this limitation and makes it easier to examine the vagina. It is advantageous to find the fistula on the vaginal side first, given the limited area where the fistula can be and the lack of folds that can cover the fistula on the colonic side. After identification of the fistula on the vaginal side, a wire is passed through it, leading to easy identification of the rectal or colonic end of the fistula.

In this patient, the distal location of the fistula in the rectum made stenting the fistula with a covered stent challenging. Stents in the distal 5 cm of the rectum are often painful and uncomfortable to the patients because they can have an impact on the dentate line, and thus they are traditionally contraindicated.

Because a covered stent is needed to cover the fistula and traditional colonic stents available in the United States are uncovered, a fully covered esophageal stent was used

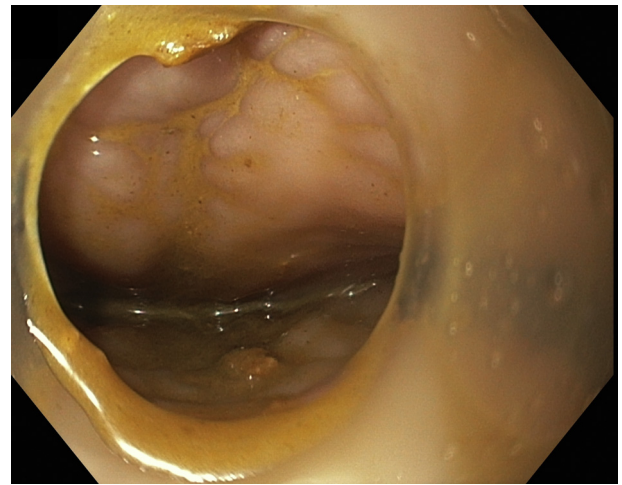


Figure 1. Vaginal endoscopic view showing stool in the vagina in patient 1.

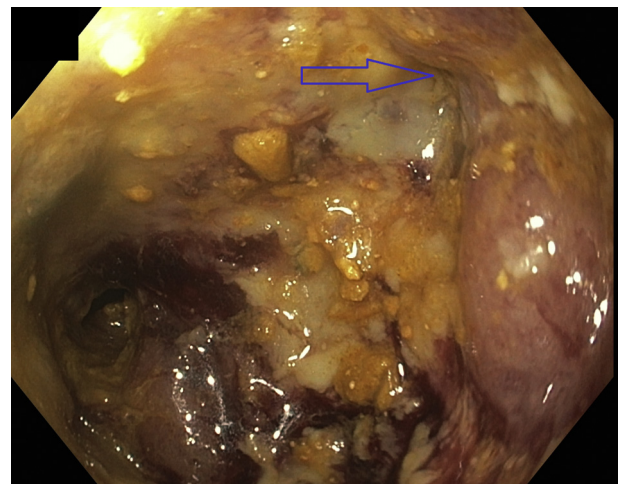


Figure 2. Colorectal view showing the rectal end of the fistula (blue arrow) in patient 1.

here instead. To prevent stent migration, 4 sets of sutures were placed distally through the rectal wall (Fig. 3). In the end, the fistula was completely closed, as seen from the vaginal side in Fig. 4. There were no procedure-related adverse events, and the patient did not experience any rectal or anal pain after the stent was placed. The patient was given prophylactic antibiotics for 5 days after the procedure and was given stool softeners to prevent straining, which could have dislodged the stent. After the procedure, a normal diet was resumed. The patient had relief of her symptoms. She elected hospice care for her advanced cancer and died 6 weeks later as a result of systemic adverse events related to the primary malignancy.

Patient 2

A 51-year-old woman with a history of cervical cancer that had been progressing after multiple sessions of

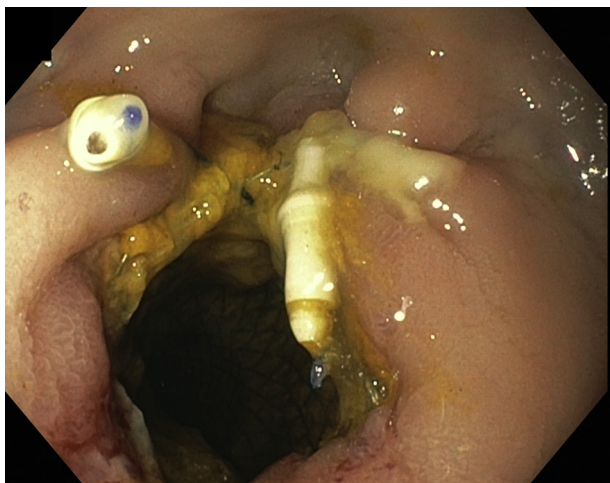


Figure 3. Fully covered esophageal stent used to close the fistula in patient 1. Four sets of sutures were placed distally through the rectal wall to prevent the stent migration.

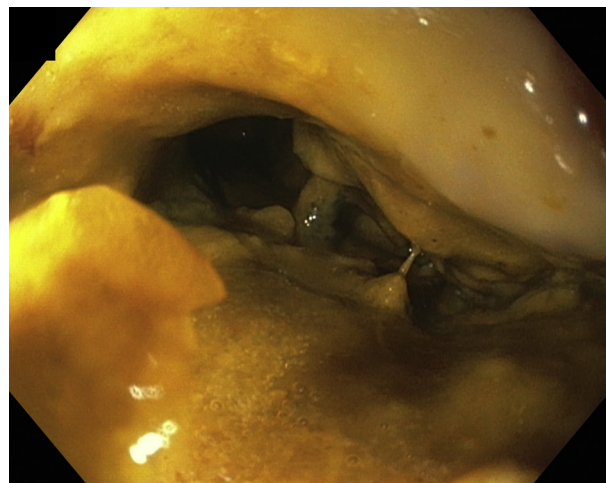


Figure 5. Vaginal endoscopic view showing stool in the vagina in patient 2.

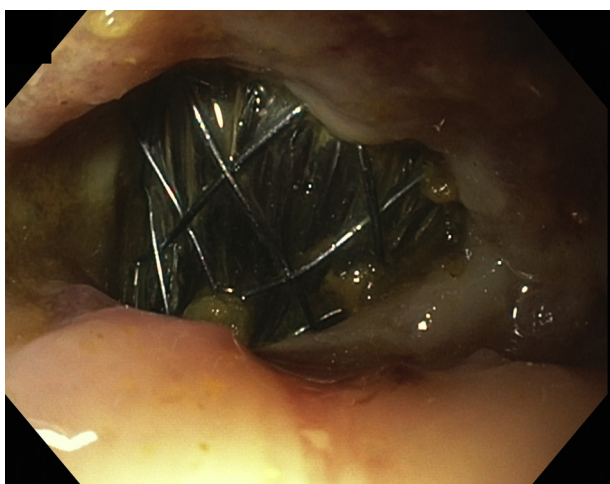


Figure 4. Vaginal endoscopic view showing the appearance of the stent covering the fistula from the vaginal side in patient 1.

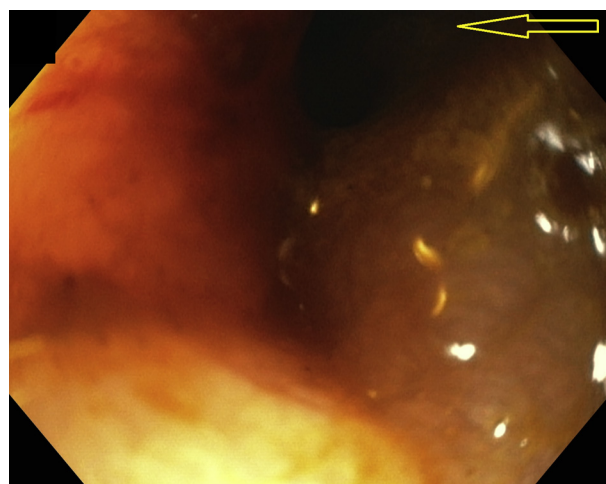


Figure 6. Colorectal view showing colorectal end of the fistula in patient 2.

chemotherapy presented with stool coming out of her vagina for a few days, consistent with a CVF. The fistula was located in the rectosigmoid area and was caused by the primary malignancy. She was a poor surgical candidate because of her advanced disease, malnutrition, and poor functional status, so she was evaluated for endoscopic management. A vaginogram was performed which demonstrated the fistula, with contrast material seen flowing from the vagina into the colon. Vaginal endoscopy showed stool in the vagina (Fig. 5). Sigmoidoscopy was performed and the rectal end of the fistula was identified (Fig. 6). Sigmoidoscopy also showed a severe colonic stricture, requiring a neonatal endoscope to be used to identify the fistula on the colonic side. Contrast material injection demonstrated the severe malignant stricture with a leak of contrast material into the vagina. A wire was then

placed, and a fully covered stent was placed over the wire. The stent covered the fistula and relieved the colonic obstruction. Given the low possibility of stent migration because of the severe narrowing, the stent was not fixed with suture or clipping. The patient was given prophylactic antibiotics for 5 days, and she was able to resume a normal diet after the procedure. This provided the patient with relief of her symptoms. The patient was enrolled in hospice care afterward and died of her systemic disease a few weeks later with no recurrence of her CVF symptoms or any procedure-related adverse events.

Patient 3

A 57-year-old woman with metastatic colon cancer, who had undergone multiple resections and still had

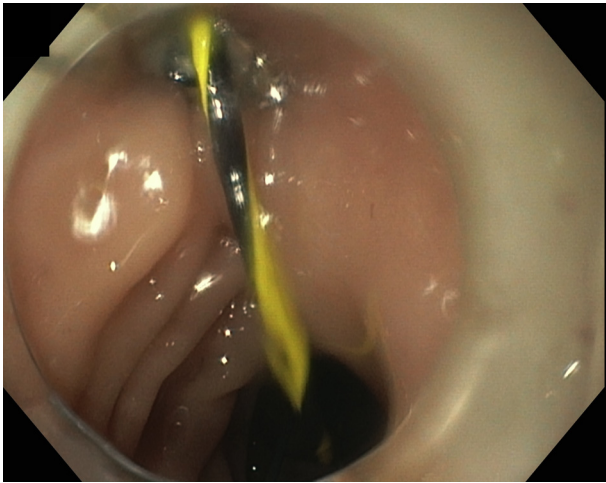


Figure 7. Appearance of the fistula from the colonic end after passage of wire from the vaginal end in patient 2.

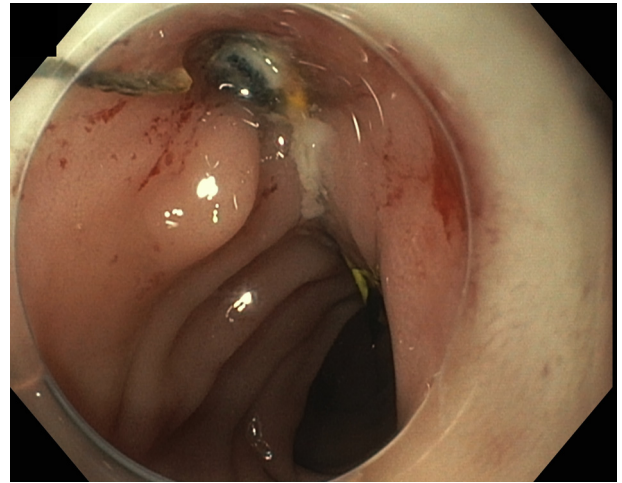


Figure 9. Colorectal view showing the closed fistula from the colorectal side in patient 3.

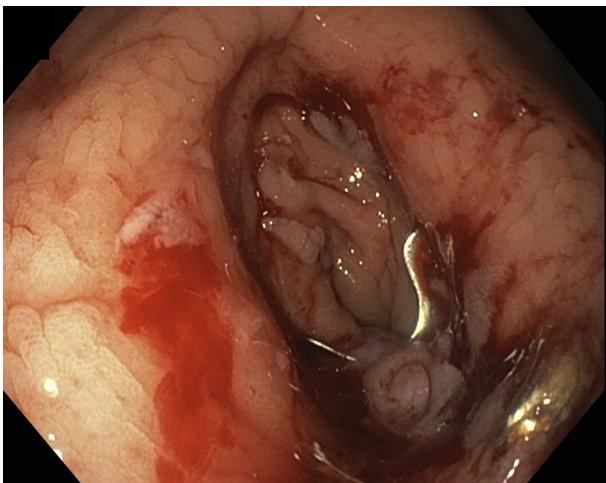


Figure 8. Over-the-scope clips deployed to close the fistula from the colonic end in patient 3.

ongoing disease, presented with stool coming out of her vagina consistent with a CVF. The fistula was located in the rectosigmoid area and was caused by the primary malignancy. Surgery was deemed very complex, given her prior multiple surgeries, so she was evaluated for endoscopic repair. Endoscopy of the vagina with a cap demonstrated the fistula with no surrounding malignant tissue. A wire was placed to help with identifying the fistula from the colonic end (Fig. 7). Given the size and location of the fistula and the lack of surrounding malignant tissue, it was decided to close it with an over-the-scope clip. After the mucosal surface in the fistula tract was avulsed with forceps, the over-the-scope clip was deployed and closed the fistula (Fig. 8). The closure of the fistula was confirmed from the colorectal side by sigmoidoscopy (Fig. 9). The patient was given prophylactic antibiotics

for 5 days, with no restriction of diet after the procedure. The patient had relief of her symptoms and remained symptom free at her follow-up visit 4 months later.

The strategies used for closure of these 3 CVFs were dependent on the sizes and causes of the fistulas. When the fistula is small and the surrounding tissue is healthy (not malignant), the closure is usually attempted by use of the usual methods such as clips after ablation or avulsion of the mucosal lining of the fistula tract because the tissue has a good chance to heal. When the tissue around the fistula is malignant, stent placement with a covered stent is favored because closure is no longer an option, especially when there is an associated narrowing. The stenosis often favors the flow into the fistula. Therefore, placement of a covered stent to relieve the narrowing and cover the fistula will divert the stream away from the fistula. Anchoring the stent should be considered if that is technically feasible, and there is concern about migration.

RESULTS

Technical and clinical success was achieved in all 3 situations. There were no procedure-related adverse events.

CONCLUSION

CVFs in cancer patients are rare and are mostly seen in patients with advanced disease. They cause significant morbidity and can have a negative impact on quality of life. Endoscopic management may be considered when a patient is a poor surgical candidate. These cases demonstrate the use of the cap to perform vaginal endoscopy; the use of over-the-scope clips, covered stents, and

endoscopic suturing; and how they can facilitate the closure of fistulas in patients who are poor surgical candidates.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: CVF, colorectal fistula; RVF, rectovaginal fistula.

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