

Transanal endoscopic surgery with laparoscopic instruments for the treatment of a posterior sinus in an ileoanal pouch: a case report

Cirugía endoscópica transanal instrumentos de cirugía laparoscópica convencional para el tratamiento de un seno postanal secundario a reservorio ileoanal: reporte de caso

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Summary

Anastomotic leakage of an ileoanal pouch after a restorative proctocolectomy sometimes generates a chronic presacral sinus with a 36% rate and it is occasionally associated with pouch stenosis. There are multiple treatments for these complications and the results are variable. Resection of the pouch is the common treatment. The purpose is to report treatment with transanal endoscopic surgery for this complication. **Case Study:** 25-year-old female, treated with total proctocolectomy and ileoanal pouch with protective ileostomy for ulcerative colitis. After the protective ileostomy had closed, she suffered from abdominal sepsis, secondary to a pouch leak. It was determined to carry out a new ileostomy. She subsequently developed a pouch stenosis, and a presacral sinus was assessed through a pouchogram and a pelvic tomography. Transanal endoscopic surgery was used to unroof the full length of the presacral sinus, thus solving the stenosis and sinus. The patient was discharged the next day. Thirty days after the procedure, a new pouchogram found absence of abnormalities and the ileostomy was closed. After a 4-month follow-up period, the patient is without anorectal symptoms and incontinence. **Conclusions:** Unroofing of the presacral sinus using transanal endoscopic surgery is feasible and safe. This is a new alternative for the treatment of multiple anorectal pathologies.

Keywords: Transanal endoscopic surgery. Posterior sinus. Ileoanal pouch. Ulcerative colitis. Case report.

Resumen

La fuga anastomótica de un reservorio ileoanal después de una proctocolectomía restauradora genera un seno presacro crónico con una tasa del 36% y se asocia ocasionalmente con estenosis del reservorio. Existen múltiples tratamientos para sus complicaciones con resultados variables; la resección del reservorio el más común. El propósito de este estudio es reportar un tratamiento de cirugía endoscópica transanal para esta complicación. **Caso clínico:** Mujer de 25 años a quien se le realizó una proctocolectomía total con reservorio ileoanal e ileostomía protectora por colitis ulcerativa. Después de que se cerrara la ileostomía protectora sufrió sepsis abdominal, secundaria de una fuga en el reservorio; se decidió realizar una nueva ileostomía, subsecuentemente desarrollo estenosis del reservorio y se evaluó el seno presacro a través de un estudio

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contrastado del reservorio y una tomografía pélvica. Se utilizó la cirugía endoscópica transanal para destechar el seno presacro en toda su longitud, resolviendo así la estenosis y el seno. La paciente fue dada de alta el siguiente día; treinta días después del procedimiento, se realizó un nuevo estudio contrastado del reservorio en el cual no se encontraron anomalías, la ileostomía había cerrado satisfactoriamente. Después de un periodo de seguimiento de cuatro meses, la paciente se encuentra sin síntomas anorrectales e incontinencia. **Conclusiones:** El destechamiento del seno presacro mediante cirugía endoscópica transanal es factible y segura. Esta es una nueva alternativa para el tratamiento de múltiples patologías anorrectales.

Palabras clave: Cirugía endoscópica transanal. Seno posterior. Reservorio ileoanal. Colitis ulcerativa. Reporte de caso.

Introduction

Dehiscence of the ileoanal pouch anastomosis occurs in 7% of the instances, of which 36% develop a chronic presacral sinus or rear pouch sinus (PS). PS is characterized as a blind path that originates in an area of the anastomosis of the ileal pouch with the anus.¹ The treatment of the rear PS includes fibrin placing, the use of endo-sponges with negative pressure, percutaneous drainage, dismantling of the ileal pouch, derivative stoma, etc.² Treating this complication with roof removal has a reported nearly 100% success, at the same time solving stenosis at this level; however, technically, it is a matter that cannot be easily accomplished.²⁻⁴ Transanal endoscopic microsurgery (TEM) allows various rectal procedures to be performed, visualizing stereoscopy and favoring the use of both hands in the rectum; nevertheless, it requires an expensive equipment that not available in our area. The use of transanal endoscopic surgery (TES) systems with conventional surgical material appeared with Wise, et al. in 1999, and since then several platforms have been created, making the transanal endoscopic surgery affordable.⁵ The purpose of this paper is to present an unroofing and stricturotomy by TES case in a patient with a rear pouch sinus.

Case study

A 25-year-old female patient, whose history showed restorative proctocolectomy with ileal J pouch due to chronic idiopathic ulcerative colitis, and had a protective ileostomy. The protective ileostomy is closed 6 months after the procedure was performed, prior to a radiologic study with water-soluble medium for the pouch, "pouchogram". Within 48 hours abdominal sepsis occurs, and during the laparotomy a leaking of intestinal material from the ileal pouch is found; a cavity lavage is performed, as well as a new loop ileostomy. Subsequently, the ileal pouch began to present stenosis; reason why she was treated with scheduled

pneumatic dilation and scheduled with Hegar dilators, having a partial improvement, finding a rear pouch sinus in a second pouchogram (Figure 1). A year after the above treatment having no improvement, the resolution was made to take a transanal endoscopic approach in order to solve the condition.

The patient was placed on lithotomy with a 30° Trendelenburg position, and the procedure was performed under general balanced anesthesia. For TES, we used a single port Endorec® (Aspide Medical) (Figure 2), which was fixed to the perianal skin with 0 prolene sutures. The insufflator was programmed with a continuous flow to keep a pneumorectum to 10 mmHg. 5 mm conventional forceps for abdominal laparoscopic surgery were used, as well as 30° 5 mm lens. 5 cm from the anus margin, in the back of the pouch, a 1 cm diameter erythematous area draining hemopurulent material was identified. Surrounding the found injury, the pouch with stenosis was observed (Figure 3). After scanning the distal and proximal loops of the pouch, EnSeal PTC® (Ethicon Endosurgery) forceps were used to unroof the wall between the pouch and the sinus, simultaneously releasing the stenosis. The surgery lasted 210 minutes, and there a 60 mL bleeding occurred. There were no events on the postoperative course and the patient was discharged after 24 hours. A proctogram was performed again 30 days after surgery with no evidence of leakage, and then the loop ileostomy was closed (Figure 4). After a 4-month follow-up period, the patient is on daily evacuation and without incontinence.

Discussion

The surgical treatment for chronic idiopathic ulcerative colitis, if indicated, is restorative proctocolectomy with ileal J pouch, which is currently suggested to be performed in two parts in order to decrease the morbidity of the procedure.⁶ However, it is associated with several postoperative complications, many of which are an actual challenge for the surgeon. Among the complications are:

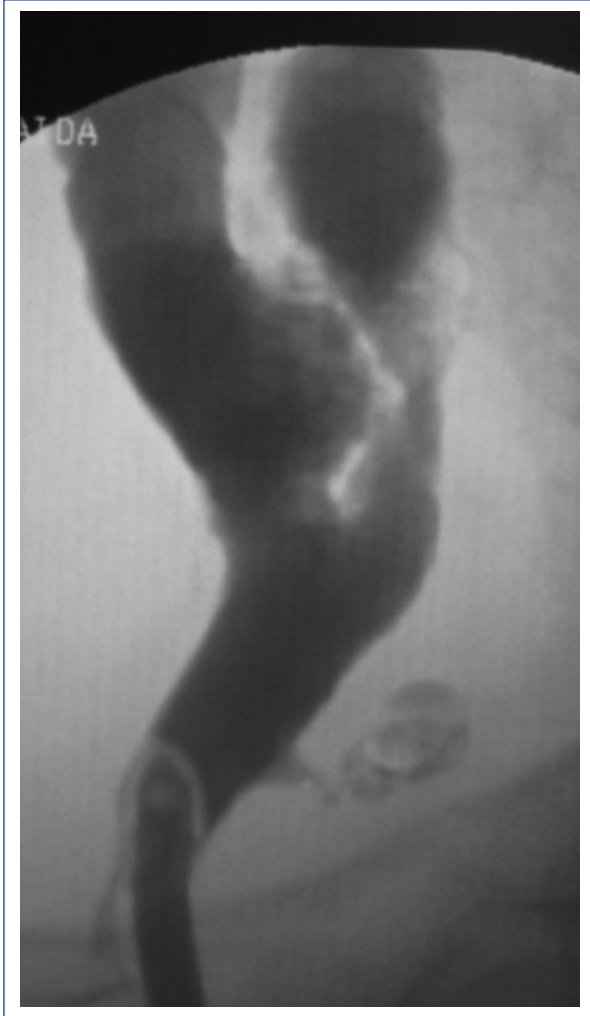


Figure 1. Pouchogram with posterior anal sinus.

peri-pouch sepsis, leakage of the anal pouch anastomosis, stenosis, intra-abdominal abscesses, pouch sinus, pouchitis, cuffitis, pouch-vaginal fistula, enterocutaneous fistulas, ileal pouch prolapse, etc.⁷

The dehiscence of an anal pouch anastomosis is a major risk factor with regard to malfunctioning, and is associated with high morbidity.⁸ An optimal treatment for the pouch sinus has not been established, and there are reports about its management only with gastric bypass with a 40-50% success rate.⁹ Rear pouch sinus-related symptoms differ depending on whether or not the patient carries an ileostomy, if so, suffering from fever, perianal or lumbar pain and transanal secretion; and opposed to that the above symptoms are exacerbated, and diarrhea, irritation, itching and serious anal burning also occur.^{1,10}

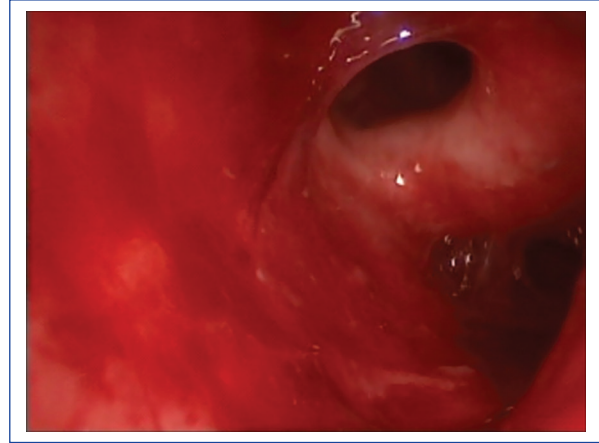


Figure 2. Pouch sinus.

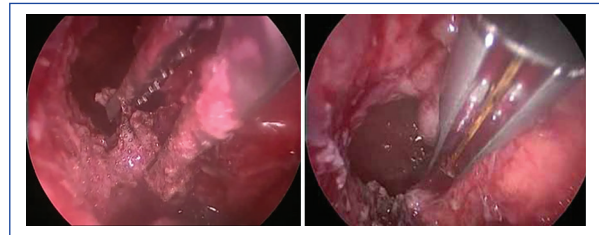


Figure 3. Deroofing technique.

The pouchogram with water-soluble medium allows the identification of a rear pouch sinus in 50% of the cases, with studies in which the use of this exploration is not recommended as a routine, reserving it only for those patients with suspected PS or presenting such symptoms.¹¹ The endoscopic study, endoscopic ultrasonography, and the examination under anesthesia do not have a defined role, leaving their performance to the surgeon's preference; however, they make the pouchogram complete.¹²

There have been several modifications to TEM technique and equipment described by Buess in recent years: video-endoscopic transanal microsurgery (VETM), VETM without insufflation, TEM with a lens for conventional laparoscopy, and using only endoscopic surgery common tools.¹³ The TEM described by Buess requires a complex system, where the instruments are highly specific and expensive. That has driven several colorectal surgeons to adapt current technology for conventional and single port laparoscopic surgery. The Endorec® (Aspide Medical) platform was developed in 2007 and it is the transanal endoscopic surgery system used in our hospital.

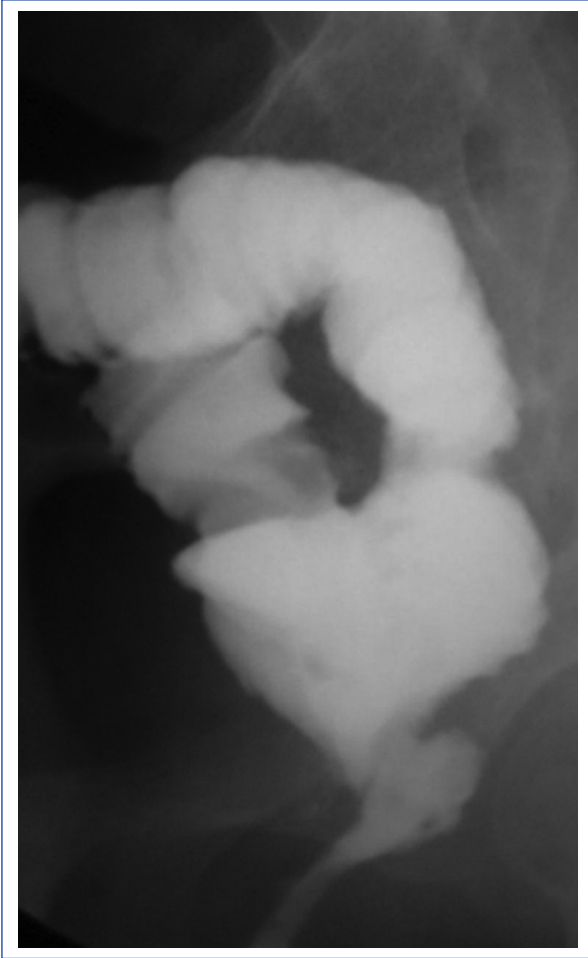


Figure 4. Pouchogram a month later after treatment.

Unroofing using this new technology is feasible and, as in the case of our patient, safe and effective. Akbari et al. reported sinus curettage plus unroofing in 5 patients, 3 of them resulting with sinus and ileostomy closing without complications.⁸ Ahmed et al. reported 8 patients treated with unroofing, with a 50% success rate resolution;¹ Whitlow et al. reported 5 patients undergoing unroofing, all with good results on one year follow-up; and finally, Van Koperen et al. reported 2 cases managed with unroofing, for which the stoma could not be closed.² The present case is part of our experience with this system.¹⁴

Conclusion

The rear chronic sinus is a complication of the dehiscence of an ileoanal anastomosis, and unroofing with TES is feasible and safe compared to abdominal surgery to solve this type of conditions. Pouchogram with

water-soluble medium and examination under anesthesia are required to establish the presence of it during the preoperative stage. The TES is a new implementation to treat many anorectal pathologies, including anastomosis complications of this field.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Use of artificial intelligence for generating text. The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of images, graphics, tables, or their corresponding captions.

References

1. Ahmed U, Shen B, Remzi H, Kiran R. The management of anastomotic pouch sinus after IPAA. *Dis Colon Rectum*. 2012;55:541-8.
2. Van Koperen PJ, Van Berge Henegouwen MI, Slors J, Bemelman W. Endo-sponge treatment of anastomotic leakage after ileo-anal pouch anastomosis: report of two cases. *Colorectal Dis*. 2008;10:943-4.
3. Garcea G, Sutton C, Lloyd T, Jameson J, Scott A, Kelly MJ. Management of benign rectal strictures: a review of present therapeutic procedures. *Dis Colon Rectum*. 2003;46:1451-60.
4. Alsanea N, Alabbad S. Use of the endostapler for the treatment of non-healing sinus secondary to a dehiscid colorectal anastomosis. *Tech Coloproctol*. 2010; 14:249-51
5. Kato K, Saito T, Matsuda M, Imai M, Kasai S, Mito M. Successful treatment of a rectal anastomotic stenosis by transanal endoscopic microsurgery (TEM) using the contact Nd: YAG laser. *Surg Endosc*. 1997; 11:485-7
6. Suchan K, Muldner A, Manegold B. Endoscopic treatment of postoperative colorectal anastomotic strictures. *Surg Endosc*. 2003;17:1110-3.
7. Sagar P, Pemberton JH. Intraoperative, postoperative and preoperative problems with ileoanal pouches. *Br J Surg*. 2012;99:454-68.
8. Akbari R, Madoff R, Parker S, Hagerman G, Minami S, Bullard Dunn K, et al. Anastomotic sinuses after ileoanal pouch construction: incidence, management, and outcome. *Dis Colon Rectum*. 2009;52:452-5.

9. Van Koperen PJ, Van der Zaag ES, Omluo JM, Slors JF, Bemelman WA. The persisting presacral sinus after anastomotic leakage following anterior resection or restorative proctocolectomy. *Colorectal Dis.* 2011;13: 26-9.
10. Michelassi F, Lee J, Rubin M, Fichera A, Kasza K, Karrison T, et al. Long-term functional results after ileal pouch anal restorative proctocolectomy for ulcerative colitis: a prospective observational study. *Ann Surg.* 2003;238:433-41.
11. Lawal TA, Falcone RA, van Allmen D, Denson LA, Levitt MA, Warner C, et al. The utility of routine pouchogram before ileostomy reversal in children and adolescents following ileal pouch anal anastomosis. *J Pediatr Surg.* 2011;46:1222-5.
12. Phitayakorn R, Delaney C, Reynolds HL, Champagne BJ, Heriot AG, Neary P, et al. Standardized algorithms for management of anastomotic leaks and related abdominal and pelvic abscesses after colorectal surgery. *World J Surg.* 2008; 32:1147-56.
13. Verlaan T, Bartels S, Van Berge Henegouwen MI, Tanis PJ, Fockens P, et al. Early, minimally invasive closure of anastomotic leaks: a new concept. *Colorectal Dis.* 2011;13:18-22.
14. Villanueva-Herrero JA, Alarcón-Bernes YL, Carreon G, Jimenez-Bobadilla B. Endoscopic endorectal surgery with the Endorec system and conventional laparoscopic instruments. (Poster Abstract) *Dis Colon Rectum.* 2013;56:E218-E219