Transanal Endoscopic Resection Using the TEO® Platform

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INTRODUCTION

In the treatment of rectal adenocarcinoma (ADC), total mesorectal resection remains the surgical treatment of choice. Minimally invasive transanal techniques, including TEM® (Transanal Endoscopic Microsurgery), TEO® (Transanal Endoscopic Operation), and TAMIS® (Transanal Minimally Invasive Surgery), have been identified as viable alternatives for early-stage, low-risk carcinomas. These techniques have been shown to facilitate complete local resections with adequate margins, reduce recurrence rates, and enhance functional preservation.[1-3] Recent studies have demonstrated that, in selected patients, these techniques can achieve oncological outcomes that are comparable to those of radical surgery, while having a lesser impact on quality of life.[1,4,5]

DESCRIPTION

We present the case of a 71-year-old male patient with a history of resection of a soft tissue tumor and multiple endoscopic resections of colorectal adenomas with low-grade dysplasia. A subsequent colonoscopy revealed a 1-cm lesion in the posterior rectal wall, 10 cm from the anal verge, with a negative lifting sign (Fig. 1).

Figure 1. *Colonoscopy demonstrating a 10-mm sessile elevated lesion located 10 cm from the anal verge, wth surface erosions. Submucosal injection with indigo carmine, adrenaline, and saline was performed; however, the lesion did not lift (negative lifting sign). A biopsy of the lesion was obtained.*

The initial histopathology reported intramucosal carcinoma of the rectum. A proctological examination was performed, but no abnormalities were detected during the rectal examination. The MRI revealed that the rectum was free of any signs of residual disease or regional lymphadenopathy (Fig. 2). Staging computed tomography did not reveal distant metastases from the rectal lesion; however, it did reveal blast lesions in T7 and nodular formations in both adrenal glands (Fig. 3).

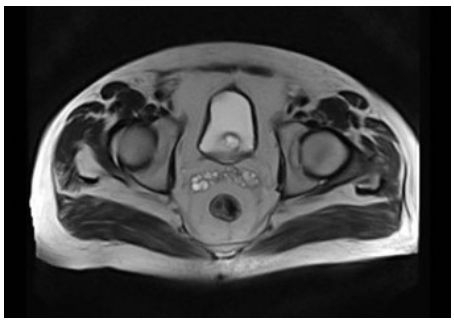

Figure 2. *Pelvic magnetic resonance imaging showing a normal rectum without evidence of disease and no regional lymphadenopathy.*

Consequently, a PET scan was performed, which revealed radiotracer uptake in the thyroid gland and left adrenal gland. Tumor markers were within normal limits. A 360° anorectal ultrasound was not performed due to lack of equipment availability.
The case was reviewed by an interdisciplinary oncology committee, which determined that a local transanal excision should be performed using the TEO® platform and that subsequent follow-up should be scheduled for bone and adrenal lesions.
The patient was placed in the lithotomy position and antisepsis was performed under general anesthesia. Sterile drapes were applied. After digital rectal examination and dilation, a TEO® rectoscope was inserted to a depth of 10 cm from the anal verge and firmly secured to the operating table. A pneumorectum was established with CO_2 at a pressure of 12 mmHg. Using a 30° laparoscope, a 1-cm diameter lesion was observed on the right posterolateral side (Fig. 4A). A circular mark was made in the adjacent healthy mucosa with a hook scalpel (Fig. 4B), followed by incision and transmuscular resection of the tumor with a Harmonic Ace® (Fig. 4C). The specimen was then extracted through the device. Hemostasis and a satisfactory specimen count were verified (Fig. 4D). The rectal wall defect was closed with a continuous 2-0 polydioxanone suture (Fig. 4E). The specimen was properly pinned out and submitted to Pathology (Fig. 4F). The patient tolerated the procedure well.
The definitive histopathological report revealed a moderately differentiated ADC arising in a tubulovillous adenoma with high-grade dysplasia.

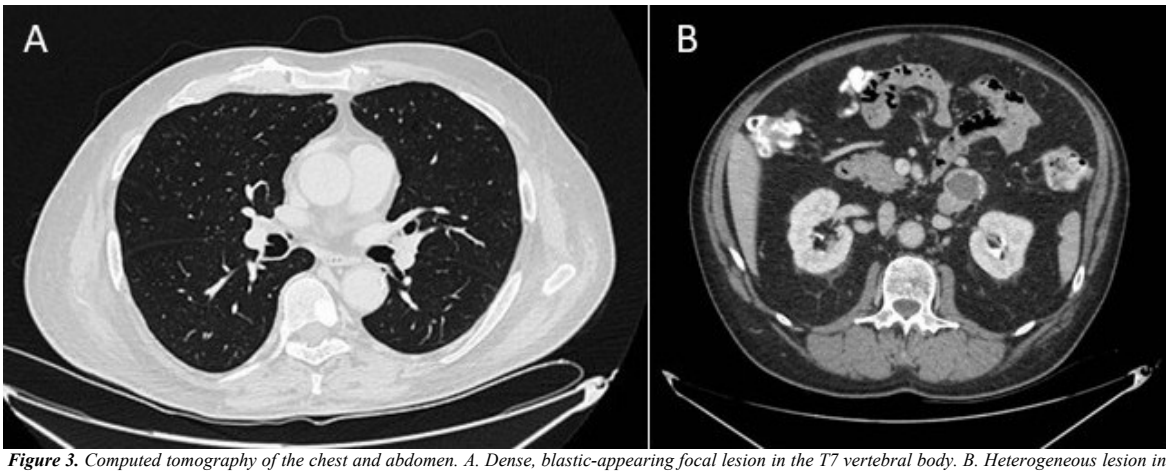

Figure 3. *Computed tomography of the chest and abdomen. A. Dense, blastic-appearing focal lesion in the T7 vertebral body. B. Heterogeneous lesion in the left adrenal gland with peripheral calcifications peripheral contrast enhancement, and a central hypodense area.*

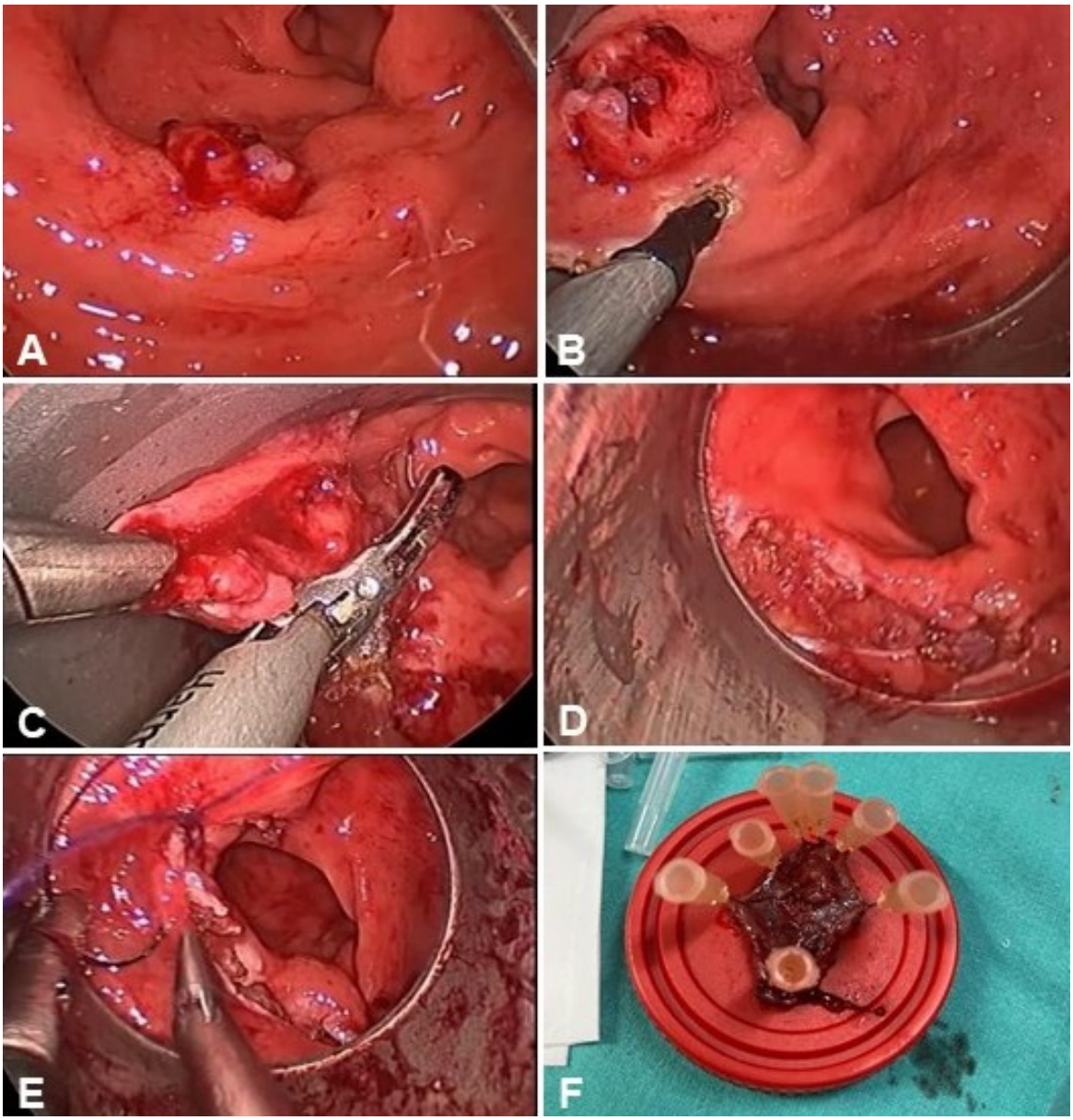

Figure 4. *Transanal endoscopic resection (TEO).* ***A.*** *Elevated, sessile, bleeding lesion measuring 1 cm in diameter on the right posterolateral wall.* ***B.*** *Marking of healthy mucosa surrounding the lesion with a hook. Marking of healthy mucosa surrounding the lesion with a hook.* ***C.*** *Transmuscular tumor resection using the Harmonic Ace®.* ***D.*** *Hemostasis control of the surgical bed.* ***E.*** *Closure of the rectal wall defect with 2-0 polydioxanone suture.* ***F.*** *Surgical specimen measuring 2 × 2.5 cm, pinned for orientation.*

Figure 5. *Flexible sigmoidoscopy up to 30 cm from the anal verge.* ***A.*** *Rectum with preserved caliber and no stenosis.* ***B.*** *At 7 cm from the anal verge, suture material and granular mucosa are observed.* ***C.*** *Biopsy of the granular mucosa.*

The adenocarcinoma ADC invaded the submucosa (depth 1 mm) and exhibited perineural infiltration, with clear margins. The distance to the nearest lateral margin was 0.4 cm, and the distance to the deep margin was 0.3 cm.

The patient was discharged 24 hours after the procedure. At the 45-day follow-up, flexible sigmoidoscopy revealed an area of granular mucosa 7 cm from the anal verge (Fig. 5). Anoscopy demonstrated fibrous tissue without evidence of recurrence. The patient was scheduled for continued oncological follow-up.

CONCLUSIONS

The TEO® platform is an effective and minimally invasive alternative to radical surgery for selected early rectal lesions, combining oncological safety with improved functional preserva-tion. In this case, it allowed avoidance of the morbidity associated with radical resection, highlighting the importance of careful patient selection and strict follow-up. The platform also facilitates retrieval of larger, intact specimens with greater distance from the anal verge.

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REFERENCES

1. Calvo CG, Palazuelos JCM, Alonso Martín J, Castillo Diego J, Martín Parra I, Gómez Ruiz M, et al. Cirugía endoscópica transanal en tumores rectales. Cir Esp. 2014;92(1):38-43.
2. Minetti ÁM, Pitaco I, Santilli JP, Ramallo I, Carrasco F. Controversias en la resección local del cáncer de recto estadio I. Rev Argent Coloproct. 2021;32(2):60-8.
3. Rossi G. Relato oficial. Resecciones transanales: pasado, presente y futuro. Rev Argent Coloproct. 2019;30:1-77.
4. Mun JY, Sung GG, Yoo N, Kim HJ, Cho HM, Kye BH. Minimally invasive transanal excision for rectal tumors: technical feasibility compared to conventional approach. Ann Coloproctol. 2025;41(2):162-168.
5. Mohammed H, Mohamed H, Mohamed N, Sharma R, Sagar J. Early Rectal Cancer: Advances in Diagnosis and Management Strategies. Cancers. 2025;17(4):588.