Techniques in Coloproctology (2019) 23:501–502
https://doi.org/10.1007/s10151-019-01979-y

VIDEO FORUM

Transanal minimally invasive surgery (TAMIS) for anterior rectal GIST

A. Spinelli[1,2] · M. Carvello[1] · M. Sacchi[1] · C. Bonifacio[3] · A. Bertuzzi[4] · J. Tuynman[5] · M. Montorsi[6] · C. Foppa[1]

Received: 27 January 2019 / Accepted: 29 March 2019 / Published online: 29 April 2019

The incidence of gut gastrointestinal stromal tumors (GISTs) is less than 1%, 90% found in the stomach or small intestine, and only 3% are located in the rectum. Treatment of rectal GISTs needs careful planning in order to preserve the rectum and sphincters where possible. Neoadjuvant therapy has extended the indications for local excisions [1]. Several approaches for local, sphincter-preserving resection of GISTs have been described. The transanal (Parks) and transsacral (Kraske) techniques can achieve a complete resection in low- and mid-rectal lesions with low morbidity and mortality but usually require fragmentation of the specimen with an increased risk of local recurrence [2]. Anteriorly located GISTs are particularly challenging. Transvaginal excision has been described for high anterior rectal wall lesions, with the advantage of avoiding anal dysfunction [3]. Another method is the perineal approach, which has been implemented for GISTs on the anterior rectal wall [4]. More recently, transanal minimally invasive endoscopic excision has been described. This includes transanal minimally invasive surgery (TAMIS), transanal endoscopic microsurgery (TEM) and transanal endoscopic operation (TEO) [5]. Advantages of these techniques are that clear resection margins and intact specimens produced may lead to improved outcomes.

The attached video shows a TAMIS procedure performed on a 60-year-old male diagnosed with prostatic adenocarcinoma and a 2.5 cm rectal GIST located on the anterior rectal wall, 2 cm from the anus, not clearly separated from the prostate on magnetic resonance imaging (MRI). Positron emission tomography (PET) scan was negative. Restaging MRI after 6 months of imatinib therapy showed a good radiological response: the lesion was downsized to 1.5 cm. On October 2016, the patient had robotic prostatectomy with bilateral obturator lymphadenectomy. Three months later, imatinib was restarted and in June 2017 he was referred to our colorectal center. At restaging MRI, the nodule had increased in size (2.5 cm) and slightly compressed the posterior urethra. PET scan was negative. Due to the lack of response to continued imatinib treatment, the multidisciplinary board advised surgery.

The lesion was approached transanally using the TAMIS platform. The operation began with the positioning of a Lone Star retractor, identification of the nodule with palpation and demarcation of its borders with electrocautery. After that, the GelPoint Path (Applied Medical, Inc., Rancho Santa Margarita, CA, USA) was inserted and pneumorectum was started. The circumferential demarcation of the nodule was completed and a 360° dissection down to the muscular layer was performed. The resection proceeded along an avascular plane with care taken to keep the tumor capsule intact and avoid injuring the posterior urethra. After complete removal of the tumor, the defect was closed with a barbed suture. Histology confirmed a 2.7 cm GIST, CD34 +, DOG1 +, with a deletion in exon 11 of c-kit at mutational analysis. The patient was discharged on postoperative day 2. Imatinib was restarted 3 weeks after the operation. At 8 month follow-up, the patient was in good clinical condition and MRI showed that he was disease free.

Key points of this case are related to the site (GIST of the anterior rectal wall, adherent to the posterior urethra),

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s10151-019-01979-y) contains supplementary material, which is available to authorized users.

✉ A. Spinelli
antonino.spinelli@hunimed.eu

1 Division of Colon and Rectal Surgery, Department of Surgery, Humanitas Clinical and Research Hospital, Via Manzoni 56, 20089 Rozzano, Milan, Italy

2 Department of Biomedical Sciences, Humanitas University, Rozzano, Milan, Italy

3 Division of Diagnostic Radiology, Humanitas Clinical and Research Hospital, Rozzano, Milan, Italy

4 Division of Medical Oncology and Hematology, Humanitas Clinical and Research Hospital, Rozzano, Milan, Italy

5 Department of Surgery, Cancer Center Amsterdam, Amsterdam UMC, Amsterdam, The Netherlands

6 Division of General and Digestive Surgery, Humanitas Clinical and Research Hospital, Rozzano, Milan, Italy

the initial response to neoadjuvant treatment and the sudden increase in size after its discontinuation due to prostatic surgery, the coexistence of prostatic adenocarcinoma and rectal GIST and the recent prostatectomy.

Sphincter-sparing procedures for rectal GISTs using minimally invasive techniques should be the treatment of choice whenever possible.

Acknowledgements The authors would like to express their gratitude to Adam Sharif for his help with the video editing.

Compliance with ethical standards

Conflict of interest Antonino Spinelli has acted as consultant or teacher for Ethicon and Applied Medical. The other authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

References

1. Cavnar MJ, Wang L, Balachandran VP, Antonescu CR, Tap WD, Keohan M, Singer S, Temple L, Nash GM, Weiser MR, Guillem JG, Aguilar JG, DeMatteo R, Paty PB (2017) Rectal gastrointestinal stromal tumor (GIST) in the era of Imatinib: organ preservation and improved oncologic outcome. Ann Surg Oncol 24(13):3972–3980
2. Pintor-Tortolero J, Garcia JC, Cantero R (2016) Transanal minimally invasive surgery for rectal GIST. Tech Coloproctol 20(5):321–322
3. Hellan M, Maker VK (2006) Transvaginal excision of a large rectal stromal tumor: an alternative. Am J Surg 191(1):121–123
4. Kinoshita H, Sakata Y, Umano Y, Iwamoto H, Mori K (2014) Perineal approach for a gastrointestinal stromal tumor on the anterior wall of the lower rectum. World J surg Oncol 12:62
5. Eldamshety O, Metwally IH, Ghoneem E, Elkashef WF (2017) Resection of rectal GIST using a novel technique: a report of two cases. ecancermedicalscience 11:760