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Late rectal anastomotic leakage treated with diode laser FiLaC probe. A case report of a new minimal invasive treatment

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ABSTRACT

INTRODUCTION: Anastomotic Leakage (AL) is one of the most important early postoperative complication of the adenocarcinoma's surgical treatment. Fistula Laser Closure (FiLaC[®]) is a minimal invasive technique that use diode laser energy to obtain the fistula track obliteration and it is finding large application for other affection characterized by fistula tracts presence.

PRESENTATION OF CASE: A 56 years old male, with no clinical history of adenocarcinoma in his family, underwent a laparoscopic low anterior resection with ileostomy for a rectal adenocarcinoma. Approximately 3 months after the procedure an anastomotic leak with an associated abscess was found. The patient underwent an endoscopic FiLaC off-label procedure on the AL and after further 4 months, he obtained a complete resolution of the anastomosis dehiscence.

DISCUSSION: The literature is poor about the minimal invasive AL treatment and there is no paper about the management of the AL with the FiLaC[®] procedure. For asymptomatic patients a conservative solution is preferred, it could be considered a drain positioning for emptying abscesses and for irrigation or the use of an Endosponge to decrease the resolution time. The FiLaC[®] procedure could be a more feasible technique that could also reduce the healing time as well with no discomfort for the patient.

CONCLUSION: Considering the results and our patient healing time, we think that an off-label application of FiLaC[®] procedure on asymptomatic low anastomotic leak could be an opportunity for a morbidity resolution shorter than the simple wait and see strategy, and more sustainable for the patient.

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1. Introduction

Anastomotic Leakage (AL) is one of the most challenging early postoperative complication of the rectal adenocarcinoma surgical treatment. The leak following low anterior resection may be life threatening and may be associated with a high mortality rate. Conventionally, this morbidity is treated with a diversion ostomy in order to allow the fistula closure. However, before recanalization some fistulas require a long time for complete tissue healing [9].

Fistula Laser Closure (FiLaC[®]) is a minimal invasive technique for the treatment of one of the most complex proctological pathology: the anal fistula. It was initially described by Wilhelm et al. in 2011 [1] as a new sphincter-saving technique that using a 1470 nm radial diode laser probe lead to the destruction of the fistula

epithelium and the shrinkage of the surrounding tissue, obtaining the fistula track obliteration. Recently, the diode laser energy has found large application ensuring minimal invasive treatments in other proctological diseases like hemorrhoidal disease and other affection characterized by fistula tracts presence like the pilonidal disease [2–4].

In this paper we reported the case of a patient who previously underwent laparoscopic low anterior resection with ileostomy for a low rectum adenocarcinoma; patient was affected by an asymptomatic postoperative minimal AL treated with an off-label FiLaC[®] application before recanalization. The work has been reported in line with the SCARE and PROCESS criteria [5,6].

2. Presentation of case

A 56 years old male referred to our division for a rectal adenocarcinoma (cT₃N₀M₀) with no clinical history of adenocarcinoma in his family and with no comorbidity. He had no history of allergies or addiction to drugs or alcohol. The neoadjuvant radiotherapy

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allow a significant tumoral volume reduction. The preoperative colonoscopy showed the lesion at 8 cm from the anal verge. The patient in early September 2019 underwent a laparoscopic low anterior resection with ileostomy. No postoperative complications occurred during hospitalization: he was afebrile, in the 2nd postoperative day (POD) he had stool canalization by the ileostomy and in the 7th POD the abdominal drain was removed and the patient was discharged.

During the postoperative oncologic follow-up an anastomosis' stenosis was found at colonoscopy and in the 42nd POD the patient underwent a transanal dilation with Hegar dilators under sedation. During the procedure a suspect fibrosis area on the suture ring was found. The patient underwent an abdominal and pelvic Magnetic Resonance Imaging that found a fluid collection (37 × 14 mm) in the pre-sacral area in communication with rectal lumen proximal to the anastomotic suture. After further 45 days he underwent a new endoscopic control that found a small AL with a diameter of approximately 3 mm. Considering the AL aspect and the good general conditions of the patient we decided to treat the dehiscence during the colonoscopy with a minimal invasive approach. The FiLaC[®] procedure was performed by a consultant with 20 years of experience in coloproctological surgery and 10 years of experience in colonoscopy. We proceeded to the introduction of a dedicated canula in the fistula tract washing it with betadine and hydrogen peroxide; then we extracted the canula and we introduced a diode laser probe used for the FiLaC[®] procedure. The probe was inserted into the AL for approximately 2 cm and the laser was activated with a continuous shot at 1470 nm for a total time of 8 s [Video 1]. No intraoperative or postoperative complication occurred. The patient was discharged the day after the procedure with antibiotic therapy.

After one week, at the outpatient visit, the patient referred a mild anal pain in the 1st and 2nd day after the procedure, managed with oral analgesic (i.e. paracetamol). From the 3rd postoperative day the pain reliefs. A subsequent endoscopy was performed 45 days after the FiLaC[®] procedure showing a reduction of the AL diameter and a further washing with antibiotic solution was performed. A second control colonoscopy was settled 90 days after the procedure and it highlighted a further diameter reduction of the AL that made impossible to perform another washing of the fistula tract.

Four months after the procedure, we obtained a completed AL resolution as documented by a barium enema and a further colonoscopy.

During all the post-procedural period, the patient remains asymptomatic and afebrile. Six months after the FiLaC[®] treatment the patient underwent ileostomy closure without showing any postoperative complication at 2 months follow up.

3. Discussion

To the best of our knowledge there is no case reported about the management of the AL with the FiLaC[®] procedure. When a salvage intervention is needed, the most recent guidelines follow the laparoscopic approach as the one with best results for the anastomosis failure management, with recommendation to be performed by a skilled and experienced surgeon. Chang et al. [7] demonstrated that a laparoscopic procedure performed for AL management was associated with an overall reduced hospital stay and reduced mortality and morbidity, Boyce et al. [8] showed a low permanent stoma rate linked with laparoscopy in first and second operation. Although these encouraging results, it not should be neglected a possible bias related to the patients clinical condition. A laparoscopic approach, in fact, is generally reserved to good condition subjects affected by lower complication rate [8].

When the patient has undergone a colo-anal anastomosis with a protective ileostomy, the AL could not lead to a sepsis and the

patient could be asymptomatic. In this situation, many authors like Girard et al. [9] agree in a conservative treatment with no complementary intervention and a delay of the ileostomy reversal no longer than 6 months; it is preferable to delay ileostomy reversal after the fistula tract resolution showed by radiological examination. When the AL is associated to a pelvic collection, it should be emptied into the digestive tract with the insertion of a trans-anastomotic drain (in alternative a double J pigtail) and subsequent irrigations. In some patients, insertion of an Endosponge in the AL with a negative pressure treatment has shown a healing acceleration [9–11], but the complexity of this type of medication makes it not easily and largely feasible. The necessity of several endosponge changes with frequent hospital visits, late abscess recurrence possibility, psychological factors with consequences on the patient's life routine and outcomes should be considered before to start this type of therapy [12].

FiLaC[®] procedure was described for the first time by Wilhelm et al. in 2011 [1] and in last 10 years the results have been encouraging, although it is required to compare this treatment with the most common sphincter-preserving techniques in more randomized trials [13]. Two of the most important studies about FiLaC[®] procedure, written by Giamundo et al. [14] and Oztürk et al. [15], reported an anal fistula resolution rate with this minimal invasive treatment assessed between 71%–82% of the patients, with a short hospital stay and a reduction of postoperative morbidities. In consideration of all these results, we decided to try an off-label FiLaC[®] procedure for the treatment of our asymptomatic patient with AL and correlated fluid collection.

4. Conclusion

Our choice of the diode laser application for a low rectal AL treatment aimed to a shorter morbidity resolution. The simple wait and see strategy, in fact, could be psychologically and physically hard to sustain for the patient. Certainly a single case report is not sufficient to evaluate the real effectiveness of this treatment on the low colo-rectal AL therapy, but it could be a hint for further larger studies.

Declaration of Competing Interest

None.

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Ethical approval

N/A.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

TG: Participated substantially in conception, design and execution of the study, and in the drafting and editing of the manuscript

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GG: Participated substantially in conception, design and execution of the study, and in the drafting and editing of the manuscript

GC: Revised it critically and gave final approval of the version to be published

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LFS: Revised it critically and gave final approval of the version to be published

TS: Revised it critically and gave final approval of the version to be published

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at <https://doi.org/10.1016/j.ijscr.2020.09.016>.

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