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Short Report

Long-term efficacy of endoscopic vacuum therapy for the treatment of colorectal anastomotic leaks

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ABSTRACT

Background: Anastomotic leaks are a severe complication after colorectal surgery. We aimed to evaluate the long-term efficacy of endoscopic vacuum therapy for their treatment.
Methods: Retrospective review of a series of post-surgical colorectal leaks treated with endoscopic vacuum therapy, with minimum follow-up of 1 year. Generalized peritonitis or haemodynamic instability was considered contraindication to endoscopic treatment.
Results: Endoscopic vacuum therapy was applied in 14 patients with colorectal leak, in 2 cases complicated by recto-vaginal fistula. Overall success rate was 79%, favoured by early beginning of treatment (90%) and presence of a stoma (100%) and no preoperative radiotherapy (86%). Median duration of treatment was 12.5 sessions (range 4–40). Median time for complete healing was 40.5 days (range 8–114), for a median cost of treatment of 3125 Euros. No complication related to endoscopic vacuum therapy was observed. Further surgery was required in 3 cases.
Conclusion: Endoscopic vacuum therapy is a safe treatment for post-surgical leaks, with high success rates.
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1. Introduction

Anastomotic leak is a relatively frequent postoperative complication after colorectal surgery owing to an increase morbidity and mortality. Anastomotic leak management depends on clinical manifestation, on clinical stability of the patient and on the distance of the anastomosis from the anal verge, particularly if the anastomotic leak is extra-peritoneal, rather than intra-peritoneal. In selected cases endoscopic management has been demonstrated to be a safe and effective alternative to surgical management.

Different kinds of endoscopic devices can be used for this purpose. Synthesis and suturing devices allow a direct closure of gastrointestinal defect and are indicated in small leaks up to 20 mm of diameter [1,2]. Temporally application and periodical substitution of covered stents adopt the principle of excluding the wall defect from contamination of gastrointestinal lumen and require drained or clean extra-luminal tissues in order not to create bacterial proliferation and abscess formation [3]. The endoscopic vacuum system (Endosponge®, B.Braun, Melsungen AG, Tuttlingen, Germany) is based on the application of topic negative pressure on tissues in order to drain, and favour granulation and secondary closure of large defects. It is indicated in large anastomotic leaks in presence of an extra-luminal cavity.

Most relevant literature on endoscopic vacuum therapy reports small case series with mismatched overall success rate in the treatment of anastomotic leaks following anterior resection of the rectum [4–6].

2. Materials and methods

We reviewed our series of post-surgical colorectal leaks treated with endoscopic vacuum therapy. Indications were all cases of acute or chronic leak in the presence of extraluminal abscess. The presence of generalized peritonitis or haemodynamically unstable patient was considered a contraindication to endoscopic treatment. Diagnosis was in all cases confirmed by contrast CT scanning and by direct endoscopic exploration showing the anastomotic defect in communication with an extraluminal cavity.

Anastomotic leaks were considered healed when direct endoscopic examination with the aid in all cases of direct water soluble contrast infection during endoscopy, showed a complete restoration of the wall epithelium. Unsuccessful treatment was

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Table 1
Demographic and clinical data including follow-up for patients undergoing endoscopic vacuum therapy.

No.	Gender	Age (years)	Surgery	Neoadjuvant RT[a]	Derivative stoma	Chronic/acute	Length of the cavity (cm)	Circumference leak amplitude (%)	Complete healing	Additional endoscopic treatment	Need of further surgery	No. of sessions	Time to complete healing (days)
1	M	76	AR	Yes	Yes	Chronic	3	25%	Yes	OTSC	No	22	74
2	F	62	STARR	No	No	Acute	6	25%	Yes	No	No	11	33
3	F	57	AR	Yes	No	Chronic	5	25%	No	No	Yes	28	102
4	M	57	AR	Yes	Yes	Chronic	7	50%	Yes	No	No	37	114
5	F	55	AR	Yes	Yes	Acute	2	25%	Yes	Fibrin glue	No	18	60
6	F	64	AR	Yes	Yes	Acute	3	25%	Yes	No	No	6	22
7	F	64	AR	Yes	Yes	Acute	4	25%	Yes	OTSC	No	7	19
8	M	75	AR	No	No	Acute	3	25%	Yes	No	No	7	18
9	M	72	AR	Yes	No	Chronic	9	75%	No	No	Yes	40	102
10	F	74	AR	No	Yes	Acute	7	75%	Yes	No	No	14	50
11	M	68	AR	No	Yes	Acute	7	75%	Yes	No	No	19	48
12	F	78	TEM	No	No	Acute	2.5	25%	Yes	No	No	4	8
13	F	69	AR	No	Yes	Acute	3.5	25%	Yes	No	No	7	15
14	F	85	AR	No	No	Acute	4	25%	No	No	Yes	8	20

M, male; F, female; AR, anterior resection; STARR, Stapled Transanal Resection of the Rectum; TEM, Transanal Endoscopic Microsurgery.
[a] RT: radiotherapy; OTSC, over-the-scope-clip.

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