

Fistula between anterior rectum wall and seminal vesicles as a rare complication of low-anterior resection of the rectum

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Abstract

Laparoscopic surgery has become a frequently used modality for rectal tumour surgery. A fistula between the rectum and lower urinary tract is one of the possible complications, with rectovesical fistulas occurring most frequently. This case report presents a 66-year-old man who underwent a laparoscopic low-anterior resection of the rectum due to the presence of a polyp with a high risk of malignant transformation. At the time of discharge on the eleventh postoperative day, the patient returned to the hospital with a fever, scrotal swelling and pain in the right hemiscrotum. These symptoms began four hours after discharge from the hospital. There was no sign of faecaluria. The presence of gas in the urinary bladder was confirmed after catheter insertion. The patient was diagnosed with a fistula between the anterior wall of the rectum and seminal vesicles. The diagnosis was based on cystoscopy findings, X-ray and computed tomography irrigography. The condition was treated conservatively by suprapubic insertion of a catheter and antibiotics. The total length of the treatment, including management of subsequent complications, was 4 months. Twelve months after the complication developed, the patient is symptom free, without urinary tract infection recurrence, and is under the care of both surgery and urology clinics. We describe the clinical symptoms, possibilities of treatment and the result of treatment of this rare complication of rectum low-anterior resection, which has never been described in the literature before.

Key words: low-anterior resection of the rectum, fistula, seminal vesicles.

Introduction

Laparoscopic surgery represents a possibility of treating rectal tumours. Fistula between the rectum and lower urinary tract is one of the possible complications, with rectovesical fistulas occurring most frequently. A fistula between the rectum and the seminal vesicles as presented in this case report has never been previously reported.

Case report

We present the case of a 66-year-old patient, who was examined for an enterorrhagia. He underwent colonoscopy, which showed a polyp histologically classified as high-grade dysplasia. It was located 10 cm from the anal verge and was 5 cm to 8 cm wide. The patient was indicated for laparoscopic rectum resection due to the fact that the polyp size did

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not allow the use of transanal endoscopic microsurgery (TEM) techniques. He was admitted to the Surgery Department at the University Hospital in Ostrava, where the surgery was performed.

The surgery took about 180 min. There were no technical problems during the surgery. The length of the specimen was about 20 cm and the distance of the anastomosis was about 6 cm to 8 cm from the anal verge. The inferior mesenteric artery was not divided at its origin. Splenic flexure was not mobilized. To dissect the mesorectum, we used a harmonic scalpel. We used three linear blue 60 mm stapler cartridges for transection of the rectum. At the end of the surgery one drain was inserted into the pararectal space. At this point amoxicillin and metronidazole prophylaxis was given to the patient.

After surgery, the patient was transferred to the intensive care unit, where he spent 6 days. The pararectal space was drained efficiently and waste into the drain had predominantly serous character. The drain was removed on the eighth postoperative day. The fourth day after surgery, temperature elevation occurred and the combination of ampicillin and metronidazole was given as therapy for the next 7 days. The established treatment led to an overall improvement of the patient's condition.

At the time of discharge on the eleventh postoperative day the patient was asymptomatic. The same evening, the patient arrived at the hospital with fever, scrotal swelling and pain in the right hemiscrotum, which started 4 h after discharge from hospital. He was referred to a urologist. Upon admission the patient reported pneumaturia without faecaluria.

On examination there was right-sided epididymitis and incipient epididymitis on the left side. The presence of gas in the urinary bladder was clearly confirmed after catheter insertion. At this point, empiric antibiotic treatment of the epididymitis was started using pefloxacin, and pneumaturia investigation was initiated.

Combined cystoscopy with cystography was performed but none of these investigations revealed a fistula in the lower urinary tract. Irrigoscopy using water-soluble contrast medium was performed. This imaging modality showed extravasations of the contrast out of the bowel lumen, which presented as a narrow stripe leading ventrally. Filling of both seminal vesicles on the antero-posterior view was visible, which was confirmed by the computed tomography (CT) scan (Figure 1). 3D reconstruction is shown in Figure 2. Upon confirming this diagnosis the permanent catheter was removed in order to minimize local irritation of the prostatic urethra, and a suprapubic catheter was inserted. Due to the good clinical condition, minimal elevation of inflammatory indicators, minimal size of the fistula and extraperitoneal lesion localization we chose a conservative approach. We were prepared for faecal diversion in the event of the patient's deterioration. The patient did not receive any parenteral nutrition due to the minimal lesion.

At the 4th week follow-up visit, irrigoscopy revealed a bilateral leak into the pararectal space at the same location but of a lesser degree. At this point, trimethoprim prophylaxis was given. Next irrigoscopy was performed where filling of the fistula was no longer visible and the urinary bladder was gas free. At

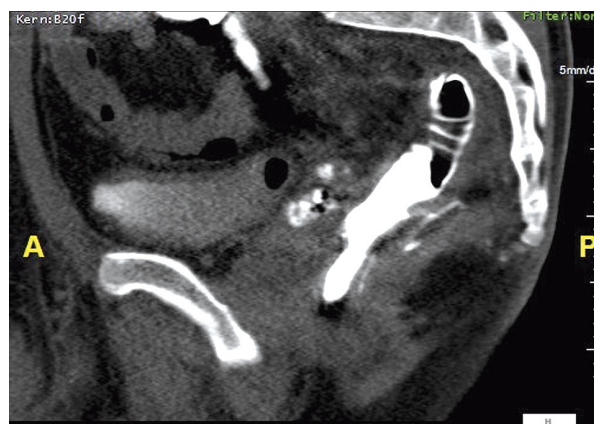


Figure 1. Computed tomography irrigoscopy. Presents a narrow stripe leading ventrally from the rectum with filling of both seminal vesicles

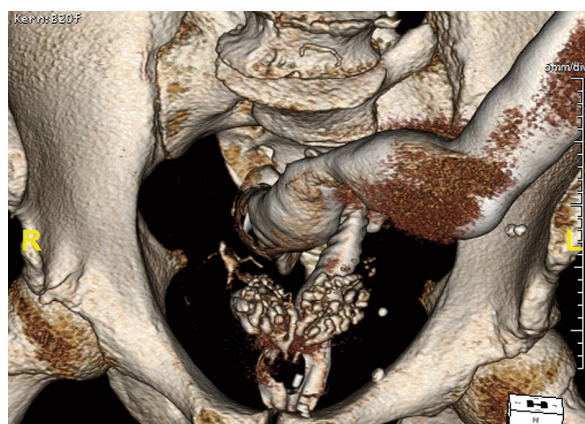


Figure 2. 3D reconstruction of the computed tomography irrigoscopy

this time the patient had developed another episode of right-sided epididymitis. A urine culture confirmed *Enterococcus faecalis* and the patient responded well to the amoxicillin treatment.

After another 2 weeks a suprapubic catheter was clamped. Forty-eight h later the patient was symptom free and the suprapubic catheter was removed. The urine culture at this point was negative. Another episode of epididymitis developed 5 months after the fistula was diagnosed, with *Escherichia coli* being the pathogen responsible. Symptoms subsided following a course of ciprofloxacin. At a 12-month follow-up the patient is symptom-free, without the recurrence of a urinary tract infection, and is being followed by both the surgery and the urology clinics.

Discussion

A fistula between the bowel and the urinary tract usually presents with pneumaturia followed by infection of the urinary tract.

It could be either a congenital anomaly, e.g. enterourethral fistula [1, 2], or a complication of a different disease. Diverticulitis represents the most common aetiology, accounting for approximately 50-70% of cases, that is about 2% of patients with diverticular disease [3]. Other studies report a risk of 1-4% in patients with diverticular disease [4]. Crohn's disease accounts for less than 10% of fistulas, with 2-5% of patients with Crohn's disease developing fistula, most commonly ileovesical fistula. Less common inflammatory causes include appendicitis, Meckel's diverticulum, genitourinary coccidioidomycosis, pelvic actinomycosis, tuberculosis and syphilis. Malignancy accounts for approximately 20% of cases of fistula. Only 0.5% of colon carcinomas lead to fistula formation.

There is also a possibility of iatrogenic fistula forming due to previous instrumentation in the lower urinary tract or recto-sigmoid colon.

The boom of colorectal surgery following higher incidence of rectal tumours directly leads to the widespread use of laparoscopy. Despite technological advances, anastomosis insufficiency still remains one of the most severe complications of laparoscopic rectal surgery [5, 6]. Interest in the incidence of anastomosis insufficiency after rectal cancer surgery is related to its potential to seriously endanger the patient and negatively affect short-term results and the possibility of worsening the long-term prognosis [7].

Randomized studies comparing the incidence of anastomosis insufficiency did not find significant differences between open surgery and the laparoscopic technique [8-10]. The relative frequency of occurrence in individual randomized trials differed significantly. The trend toward better outcomes of laparoscopic surgical technique in a randomized study has been shown by Lujan *et al.*, with a relative frequency of dehiscence of anastomoses of 6% for laparoscopic surgery and 12% for open surgery, with no evidence of statistical significance [11]. The same conclusions without evidence of a difference in the frequency of anastomosis insufficiency compared to surgical approaches were presented with a meta-analysis made by Aziz *et al.* [12]. Gao *et al.* found in their meta-analysis also a trend toward lower incidence of anastomosis insufficiency in the group operated on laparoscopically, but the difference did not reach specified levels of statistical significance [13]. In other studies of a lower degree of reliability, the incidence of anastomosis insufficiency ranges from 0% to 25% [14-16], with no statistically significant difference when comparing two surgical techniques [17-19]. The work of Chen *et al.* indicating the highest figure of 25% of insufficiency of anastomosis publishes the results from eight low-rectal cancer resections in men [20].

The standard treatment of these pathological communications is surgical treatment. Communication with the seminal vesicles described in this case has not yet been described in the literature anywhere. Therefore, there is no standard procedure for solving this situation. We chose a conservative approach due to the clinical condition, local findings, laboratory parameters, the minimal size of the lesion and the good response to conservative treatment. Extraperitoneal localization of the lesion and the presence of urological symptoms were further reasons for the conservative approach. In case of deterioration of the patient, we were ready for surgical intervention, which forced the temporary faecal diversion.

The chosen conservative approach proved to be effective for managing the patient's clinical status.

Conclusions

In our patient, with regard to his clinical condition, a conservative approach appeared to be appropriate, without surgery for faecal diversion.

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