






## CASUISTIC PAPER

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# Crohn's disease complicated with a bladder-fistula – a case report

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## ABSTRACT

**Introduction.** Entero-bladder fistula (fistula entero-vesicalis) is a pathological connection between the lumen of the gastrointestinal tract and the bladder. Entero-bladder fistulas are not a common condition. The main reason for the formation of entero-bladder fistulas are intestinal diseases occurring within the intestinal loop adjacent to the bladder resulting in the formation of an abnormal channel, the connection between the above structures

**Aim.** The aim is to present the causes of the fistulas can be divided into congenital and acquired (intestinal infection, cancer, Crohn's disease, resulting from trauma and iatrogenic). Clinical manifestations of the biliary-bullous fistulae may be from the digestive or urinary tract. The most characteristic ailments are pneumaturia, fecuria, urge to urinate, frequent urination, lower abdominal pain, hematuria, urinary tract infection.

**Description of the case.** The article discusses the case of a patient with Leśniowski-Crohn disease complicated with a bladder-fistula. The treatment of entero-bladder fistulas is primarily surgical, it consists in resection of the fistula together with resection of the affected intestine and bladder wall fragment.

**Conclusion.** The test confirming the presence of an entero-bladder fistula is a test with oral administration of poppies, although it happens that the test result may be negative, especially in the case of a bladder-follicular fistula. Among the tests useful in the diagnosis of entero-bladder fistula include abdominal ultrasound, computed tomography, magnetic resonance imaging, endoscopic tests (colonoscopy or cystoscopy).

**Keywords.** bladder-fistula, colonoscopy, Crohn disease

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# Introduction

Fistula is a channel connecting two independent spaces in the body. Fistulas are most often classified depending on the segment of the intestine in which they occur. Bladder-fistula (fistula entero-vesicalis) are abnormal connections occurring between the digestive system, intestine and bladder.<sup>1-6</sup>

There are: colonic-bullos fistulas (fistula colo-vesicalis) Recto-bladder fistulas (Latin fistula recto-vesicalis) ileo-bladder fistulas (Latin fistula ileo-vesicalis) fistulas between the appendix and the bladder (Latin appendico-vesicalis).

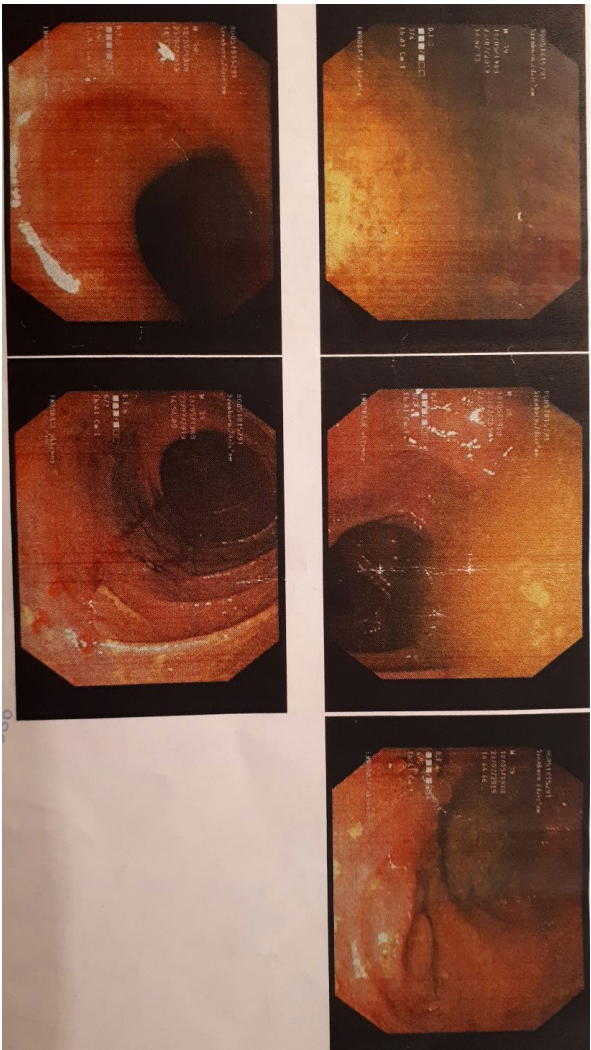
Fistulas can also be divided into simple (having one channel) and complex (consisting of many branched channels). Entero-bladder fistulas are a relatively rare pathology of about 1/000 of hospitalization for surgical reasons.<sup>7-12</sup> Entero-bullos fistulas arise as a result of birth defects or are acquired. Acquired fistulas arise most often as a complication of diverticular disease (about 65-79%), cancer (about 10-20%), or Crohn's disease (about 5-7%). Another group is iatrogenic fistula - arise as a complication of surgery, radiotherapy or chemotherapy. Abdominal or foreign body injuries are a rare cause of entero-bladder fistulas. Entero-bladder fistulas are more common in men (3: 1) - this is due to anatomical differences, the presence of the reproductive organ, uterus and appendages between the intestine and bladder in women. It is estimated that about 2% of patients with Crohn's disease have an entero-bullos fistula, and in most cases affect the inflammatory ileum (fistula ileo-vesicalis). Pathological connections between the appendix lumen and the bladder are very rare.<sup>12-18</sup>

# Aim

This work shows the treatment of entero-bladder fistulas is a surgical treatment, which consists in the fumigation of the fistula together with excision of the diseased section of the intestine and a fragment of the bladder wall. The patient was qualified for ophthalmic treatment.

# Description of the case

A 39-year-old patient treated conservatively with Azathioprine for 8 years with a diagnosis of Crohn's disease. In 2015 (5 years ago), he was hospitalized in the Gastroenterology Clinic due to clinical symptoms of an entero-bladder fistula (pneumaturia, phecauria accompanied by urinary tract infection), as well as flatulence and abdominal pain, weight loss. Magnetic resonance imaging revealed inflammatory infiltration of the terminal ileum loop with suspicion of entero-bladder fistula. Colonoscopy revealed the intestinal fistula opening just behind the ileocecal valve (20 cm behind the valve, the ileal mucosa was unchanged). At that time, the patient did not agree to surgery, he was conservatively treated. He received Azathioprine, an antibiotic, the



**Fig. 1.** An image of laparotomy showing inflammatory infiltration of about 40 cm loops of the ileum and caecum with inter-loop fistula (entero-intestinal)

bladder was de-boned with a Foley catheter. The symptoms and clinical symptoms of the fistula were resolved. The patient remained under the care of the Gastroenterology Clinic for 4 years, received Azathioprine, did not present symptoms (signs or symptoms) of entero-bladder fistula. In December 2019, he reported urinary tract infection, accompanied by lower abdominal pain, pollakiuria, pneumaturia, and fecal disease. Magnetic resonance enterography was performed in which inflammatory changes of the distal ileum with stenosis and suspicion of intestinal fistulas were found in a conglomerate of agglomerated loops and inflammatory infiltration in the bladder wall with suspicion of fistula formation, the canal was not visible. Cystoscopy on the back wall of the bladder showed an exophytic change of about 3 cm, which could correspond to a fistula, urine in the bladder was clean. Colonoscopy: the apparatus was inserted into the cecum, the appendix, the ileocecal valve and the 3 cm scar segment, the narrowed ileum, which did not pass the apparatus, were visualized. The

oral administration of the poppy did not reveal the features of a pathological connection of the intestine with the urinary system. Laparotomy was performed (Fig. 1) and appendix fistula with bladder was found intraoperatively.

The inflammatory segment of the ileum and caecum along with the appendix and the bladder wall around the fistula were resected. The ileum was joined to the ascending cavity, the defect in the bladder wall was closed. A Foley catheter was maintained in the bladder. In the 12th postoperative day, after retrograde cystography, which confirmed the tightness of the bladder, the urethra was removed. The postoperative course was uncomplicated. The patient is discharged home in good general condition.

## Discussion

Diagnosis of entero-bladder fistulas is not an easy task. Symptoms are often non-specific. We often suspect a fistula on the basis of physical and physical examination. Fistula diagnostics is aimed not only at the presence of the fistula, but at the assessment of organs involved in the pathological process between which the fistula occurred.<sup>19-25</sup> As tests helpful in the diagnosis of a fistula, the following should be mentioned: cystoscopy (effectiveness in the diagnosis of a fistula 54-65%), colonoscopy (diagnosis of a fistula in 8-55% of patients), however as a test for the detection of pathology (cancer, inflammatory disease) against which it may develop fistula is an invaluable study.<sup>25-31</sup> Imaging studies ultrasound, computed tomography or magnetic resonance imaging often provide detailed information about neighboring anatomical structures. Magnetic resonance imaging allows the fistula to be demarcated.<sup>32-34</sup> Although the test with the use of poppy seeds (oral administration of approx. 50 g of poppy seeds mixed e.g. with yogurt) is characterized by nearly 100% sensitivity in confirming the presence of an entero-bladder fistula, in the case of the described patient and the fistula between appendicitis and bladder proved to be ineffective.<sup>35-40</sup> Entero-bladder fistulas are primarily treated with surgery. Few studies report the efficacy of conservative treatment of bullous fistulas, especially in Crohn's disease. During the first hospitalization of the patient in 2015, an ileo-bladder fistula was diagnosed based on medical history, physical examination, colonoscopy and magnetic resonance imaging. The patient was treated conservatively (he did not consent to surgery at that time). As a result of such treatment, the symptoms subsided and the patient did not show signs and symptoms of the entero-bladder fistula for 4 years. Entero-bladder fistulas are an indication for surgical treatment.<sup>41-45</sup> Most often, a fistula is resected along with the resection of the diseased fragment of the intestine (performing enteric anastomosis or stoma, while closing the defect in the bladder). In the present-

ed patient it was a resection of the inflamed, narrowed ileum fragment with the caecum and appendix and a part of the bladder wall around the fistula (fistula appendico-vesicalis). Primary ileo-anastomotic anastomosis end-to-end with manual suture and continuous suture in the bladder wall were closed. The planning of the procedure should take into account: the patient's general condition, fistula etiology, assessment of fistula anatomy and complexity in imaging examinations and intraoperative assessment. After the procedure, keep the Foley catheter in the bladder for about 1 to 2 weeks.<sup>45</sup>

## Conclusions

In the era of technical achievements in the diagnosis of entero-bladder fistula, subjective and physical examination are still of crucial importance. The test with poppy, although in the literature it is assumed that it has 100% sensitivity, may prove to be negative, especially in the case of a fistula between the appendix and the bladder. Magnetic resonance imaging or computed tomography, as well as endoscopic examinations such as colonoscopy and cystoscopy are very helpful in diagnosing fistulae between the gastrointestinal tract lumen and the bladder. After resection of the entero-bladder fistula, the Foley catheter should be maintained in the bladder.

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