CASE REPORT

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Patient with complications after reconstructive proctocolectomy due to Colitis Ulcerosa – case report and literature review

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Abstract

Reconstructive proctocolectomy is the method of choice in the surgical treatment of ulcerative colitis (UC). It allows maintenance of the natural way of passing stools. However, the created intestinal reservoir may cause many metabolic and functional problems for patients. Often, inflammation of the mucous membrane of the intestinal reservoir (pouchitis) may occur. This is the most common complication among patients undergoing reconstructive proctocolectomy. The etiology of this phenomenon is not fully understood, but intestinal microbiota is of great importance. Incidents of inflammation occur in approximately 45% of patients with a pouch [1]. As a rule, drug treatment is used; however, severe cases with poor reservoir function are an indication of removal of the reservoir and definitive ileostomy. The case report presents the severe complications occurring after reconstructive proctocolectomy, which ultimately contributed to the death of the patient.

Key words

stoma, proctocolectomy, J-pouch

INTRODUCTION

Inflammation of the intestinal pouch mucosa (pouchitis) may have different presentations and incidence increases with the time after surgery [1].The longer the post-operative observation period, the more often pouchitis is observed. Thus, 5 years after surgery, pouchitis occurs in approximately 42% of patients who have undergone surgery, and after 20 years – in over 65% of cases [2]. Some reports indicate that 93.3% of patients in all age groups maintain a functional pouch after 30 years [3]. However, as many as 81% of ileo-pouch-anal anastomosis (IPAA) patients experience pouchitis [3–9]. Among patients with pouchitis, up to 40% of patients present within the first year after surgery [3,8]. If the inflammation of the mucosa of the intestinal pouch is very severe and is associated with abnormal function of the pouch, the pouch is removed and an ileostomy is performed.

There are several types of surgically-created bowel diversions [10,11] and the classification of the type of intestinal diversion depends on the anatomical location of the stoma [10,11]. Duodenostomy, in which the stoma is located in place of the duodenum, and jejunostomy, in which the stoma is located in place of the jejunum, are rare [10,11]. The secretion or waste from these stomas is liquid [10,11]. The ileostomy, in turn, exits from the ileum, and the expected amount of secretion may range from liquid to semi-formed in consistency [10,11]. A colostomy is created in the ascending, transverse, descending or sigmoid colon [10,11]. The discharge from an ascending or transverse stoma will have a consistency ranging from liquid to pastey [10,11].

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CASE REPORT

A 70-year-old male patient was admitted as planned to the University Hospital in Lublin due to pouchitis. The patient underwent abdominoperineal resection of the rectum with J-pouch (restorative proctocolectomy) due to ulcerated colitis (UC) 20 years ago. After the procedure, the patient struggled with severe constipation, which significantly reduced his quality of life. The patient was taking mesalazine (Pentasa) 2 g per day orally, omeprazole (Helicid) 20 mg per day orally, and folic acid (Sorbifer) 1 tablet twice a day orally on a daily basis before admission to the hospital. In the hospital, the patient received the following anti-inflammatory treatment: metamizole sodium (Pyralgin) 1 g 4 times per day intravenously, and dexketoprofen (Dexak) 50 mg 4 times per day intravenously.

The patient was qualified for an ileostomy with resection of the J-pouch and anus, which was performed in early January. There were numerous adhesions in the patient's abdominal cavity, which were released during the procedure. The anus and the lower part of the rectum from the perineum were removed. An opening for the stoma was cut in the right mid-clavicular line. The patient's condition was stable immediately after the procedure. On the fifth post-operative day, massive bleeding from the post-operative wound and symptoms of haemorrhagic shock occurred; the patient was therefore qualified for urgent relaparotomy. During the procedure,

the damaged right common iliac artery was sutured. In the Central Operating Theater (CBO), 5 units of Concentrated Red Blood Cells (RBC), 2 units of fresh frozen plasma (FFP), 2000 crystalloids and 500 ml of colloids were transfused.

Immediately after the surgical procedure, the patient was admitted to the ICU in a very serious condition and mechanically ventilated under sedation. His circulatory system was unstable and required stabilization with norepinephrine infusion under haemodynamic monitoring (transpulmonary thermodilution). Due to massive transfusion and post-130 operative hypothermia, the patients required active rewarming. Due to the signs of infection of the post-operative wound, and both the abdominal wall and the perineum, it was decided to use Vacuum Assisted Closure (VAC) and antibiotic therapy. A consultation with a vascular surgeon was requested due to the absence of palpable pulses in the right femoral, popliteal, and dorsalis pedis arteries. The patient had no signs of acute ischaemia. The patient did not have any peripheral oedema. The patient urinated spontaneously without the need to administer diuretics.

On the first day of the ICU stay, it was decided to end the sedation and after obtaining logical contact and satisfactory ventilation, the trachea was extubated. The patient was then fitted with a Venturi mask through which he could breathe freely. The next day, the patient's condition remained moderately serious. The patient's respiratory system remained moderately functional, but he periodically required the use of a nasal cannula and respiratory physical therapy. Despite transient periods of insufficiency, the patient had a normal physiological vesicular murmur on auscultation, and an A lung profile on ultrasound examination, with no signs of fluid in the pleural cavities. Moreover, he was haemodynamically stable with a tendency to hypertension. Palpation of the abdominal cavity did not reveal any pathologies, except for pain in the area around the drain opening.

On the last day of his stay in the ICU, the patient was conscious, in logical contact, and in a moderately serious condition. Due to very slow peristalsis, large retention in the nasogastric tube, vomiting with congested contents, and filling of the stoma with greenish contents, the decision was made to start parenteral nutrition. On the same day, the patient was transferred back to the General Surgery Department.

The next day, the patient's condition was average and stable, with the stoma functioning properly. The patient's condition remained unchanged until the sixth day after being transferred from the ICU, when his condition significantly deteriorated. Since the patient had significantly impaired sensory function in the right lower limb and a significant increase in D-dimer levels (15,772 ng/ml), heparin treatment was started. Due to the occlusion of the right iliac artery, the patient was qualified for bypass surgery.

In the following days, the patient's condition remained serious. There was retention in a nasogastric tube and vomiting. The patient was qualified for re-operation due to bowel obstruction. During surgery, intestinal adhesions were released and a loop ileostomy was created above the previous ileostomy. After the surgery, the patient was isolated, treated with broad-spectrum antibiotics and parenteral nutrition. The patient was given ceftazidime (Biotum) 2 g every 8 hours intravenously for 7 days. The perineal wounds were treated with a VAC dressing. The patient's condition did not improve in the following days.

On the twelfth day after the procedure, due to the presence of fluid in both pleural cavities, as demonstrated by ultrasound, both pleural cavities were punctured. In addition to ultrasound, the patient also underwent computed tomography (CT), which revealed the presence of collections of fluid in the patient's abdominal cavity. The patient had no symptoms of circulatory failure. Due to the presence of fluid collections in the abdominal cavity, the patient underwent an emergency laparotomy. In the operating theatre, the patient was endotracheally intubated. After the introduction of general anaesthesia, the patient experienced decompensation of the respiratory and circulatory systems. Despite resuscitation efforts, the patient died.

Table 1. Patient's examination results on the day of admission and 3 days after the procedure

Parameter [unit]	On day of admission	3 days after procedure
WBC [K/uL]	5.11	12.62
CRP [mg/l]	256.4	210.6
PCT [ng/ml]	3.94	0.41
RBC [M/uL]	2.62	3.63
HGB [%]	7.0	8.8
HCT [%]	20.9	26.0
D-DIMERS [ng/ml]	3,742	6,570

WBC – white blood cells; CRP – C-reactive protein; PCT – procalcitonin; RBC – red blood cells; HGB – haemoglobin, HCT – haematocrit

DISCUSSION

Proctocolectomy in patients suffering from UC is performed in 3 stages for emergency and urgent indications and 2 stages for selective indications [12]. The 3-stage operation is based on the fact that during the first procedure, the colon is excised using the Hartmann method, and a temporary, final ileostomy created. The second stage is removal of the rectum, the creation of an intestinal pouch, and the creation of a loop ileostomy [13]. The third stage is closure of the ileostomy [14]. The 2-stage operation involves removing the entire large intestine, leaving the anal canal, creating an intestinal pouch, and then closing the fistula in the small intestine [14]. When bowel surgery concerns creating a stoma using the small intestine, it is called an ileostomy, which involves creating a surgical opening. A piece of the last part of the small intestine (terminal ileum) is brought to the surface of the skin to form a stoma. The secretion is then excreted through the stoma opening [10,15].

After reconstructive proctocolectomy, serious complications are relatively rare, but this does not change the fact that they can occur. Serious complications include, among others: sepsis and abdominal abscess, with a frequency of 5–15%, short bowel syndrome, occurs very rarely, deep vein thrombosis and pulmonary embolism with a frequency of 2–5% and intestinal obstruction 10–20% [12,14]. In addition, long-term complications may also occur, including, among others, chronic pouchitis, which occurs in about 20–50% of patients during their lifetime, and failure of the J-pouch function and the need for its removal, which happens in 5–15% of patients, on average [12,14].

Mortality after surgery is very low – less than 1% in reference centres. Post-operative deaths occur much more

often in elderly patients, older than 65 years, and in those burdened with concomitant diseases. In addition to age and comorbidities, factors that increase the risk of death include delaying surgery in severe conditions (perforation, toxic megacolon, sepsis) and pre-operative steroid therapy, which increases the risk of infection and anastomotic leakage. Considering global data, it can be stated that post-operative mortality is very low, less than 1%. In patients over 65 years of age, mortality increases to 2–3% [13]. In patients with severe conditions (toxic megacolon, sepsis before surgery), mortality may increase to 5–10% [13]. The lowest mortality is recorded in the USA, Western Europe (Germany, The Netherlands, Scandinavia), and Japan. In turn, the highest mortality occurs in developing countries, where access to advanced surgery and post-operative care is limited. The most common complications include: anastomotic leakage (5–15%), sepsis and intra-abdominal abscesses (5–15%), intestinal obstruction, partial or complete (10–20%), thrombosis, pulmonary embolism (2–5%), and post-operative haemorrhage (2–4%) [13–16]. The lowest risk of complications, similarly to mortality, occurs in reference clinics in Scandinavia, Germany and the USA. However, the highest risk of complications is in hospitals with little experience, and in developing countries. In terms of long-term complications on a global scale, the highest risk of pouchitis occurs in countries with a high consumption of processed food and low fibre intake, e.g. the USA. In turn, the lowest risk of pouchitis is in Mediterranean countries and Japan, probably due to diet and intestinal microbiome.

Ileitis is one of the most common complications in patients who underwent reconstructive proctocolectomy with ileal-anal anastomosis [12,13]. This is the method of choice in patients with severe ulcerative colitis (UC) [12,13]; patients can thus avoid a permanent ileostomy [12,13]. Studies have shown that its incidence in UC patients treated with IPAA increased over time, with cumulative incidence rates of 25%, 32%, 36%, 40%, and 45% after 1, 2, 3, 4 and 5 years, respectively [14,16]. Extra-intestinal symptoms can be seen especially in patients with ulcerative colitis who have undergone IPAA [14]. The etiology of inflammation is most likely multifactorial, and it is believed that the close interaction between the host's immune response and the microflora plays an important role [17]. Intestinal microflora plays an important role in maintaining a healthy intestinal sac [17], a hypothesis supported by the fact that pouch inflammation occurs only after the flow of faeces through the reservoir is restored [17].

Dysbiosis has also been documented in pouchitis, and several genes associated with the innate immune response and microbial detection and recognition, including the NOD2/CARD15 gene and Toll-like receptor genes?, have been associated with an increased risk of pouchitis, [17]. Reported risk factors for pouchitis include the presence of pANCA antibodies, non-smoking, extensive pre-operative large intestinal lesions (pancolitis), cases of retrograde ileitis, extra-intestinal symptoms, such as primary sclerosing cholangitis, regular use of non-steroidal anti-inflammatory drugs, and concomitant diseases. autoimmune[17]. Among the various bag pouch configurations: with 2 (J), 3 (S), or 4 (W) loops of the small intestine, the most commonly used and accepted was the J bag [17]. This is most likely due to its ease of construction and effective evacuation [17].

Pouchitis is a non-specific inflammatory process that occurs in the ileal pouch, and may be clinically associated with generalized, subjective symptoms, such as increased frequency and fluidity of stools, rectal bleeding, abdominal cramps, urinary urgency, and nocturnal passage of stools [14]. Low-grade fever and urinary incontinence may also occur [17]. However, these symptoms are non-specific to pouchitis and may be caused by other conditions, such as cuffitis, Crohn's disease and irritable bowel syndrome [17]. In addition to intestinal symptoms, extra-intestinal symptoms may also occur, including involvement of the joints, liver, eyes, and skin [14].

Depending on the duration of symptoms, pouchitis can be divided into acute (lasting 4 weeks or less), chronic (lasting more than 4 weeks), or in the form of recurrent exacerbations (more than 4 times a year), which sometimes merge into a permanent condition, persistent clinical symptoms (continuous form) [18]. Patients suffer from a large number of loose stools, most often 6–20 per day, both during the day and at night, sudden urges, abdominal cramps, and pelvic discomfort [18]. Pouchitis recurs in over 50% of patients [17]. Depending on the number of relapses, 3 groups of patients can be distinguished: rare (less than 3 episodes per year), recurrent (1–3 episodes per year), or continuous [17]. Taking into account the response to antibiotic monotherapy, pouchitis can be distinguished that responds to antibiotics, is antibiotic-dependent, requires constant supply to achieve remission, and is resistant to antibiotics, i.e. does not respond to antibiotic therapy [17].

Diagnosis and treatment of pouchitis. The diagnosis of pouchitis is based on the clinical picture and endoscopic and histopathological examinations. Abnormalities that can be seen on endoscopy include redness, swelling, granulation, and fragility of the mucous membrane with spontaneous or contact bleeding, as well as erosions and ulcerations. Histopathological examination shows polymorphonuclear leukocyte infiltrates, crypt abscesses, and ulcers [18]. To determine the degree of inflammation activity, the Pouchitis Disease Activity Index (PDAI) scale is used [18]. The disease activity index is calculated based on 3 components: clinical symptoms, and endoscopic and histopathological parameters [18]. A result above 7 indicates an active inflammatory process and determines the initiation of treatment [18]. In addition, there are also indicators such as calprotectin and lactoferrin [18], the concentration of which correlates with changes in endoscopic and histopathological examination [18]. In patients diagnosed with pouchitis, these indicators may be elevated even 2 months before the onset of clinical symptoms [19]. Therefore, they are good predictive markers [19]. Assessment of calprotectin concentration in faeces is an easy and non-invasive test and is also a sensitive and specific indicator of the severity of inflammatory changes in the pouch [18]. The results of this test are obtained faster than the results of histopathological examination, which allows for a quick assessment of disease activity and initiation of appropriate treatment [18]. Treatment of inflammation is based on the administration of antibiotics [18]. The drug of choice is ciprofloxacin [18], administered orally at a dose of 1 g/day for 2 weeks [18]. Metronidazoleis also effective[18]. However, due to the high risk of side-effects, it is used as a second-line drug [19]. Good treatment effects are also achieved when ciprofloxacin combined with rifaximin or tinidazole [18]. In the case of chronic inflammation, budesonide in instillations are effective [18]. However, in maintenance therapy, rifaximin is effective [18].

The issue of probiotic supply remains unclear [18] although they are routinely recommended for secondary prevention, in patients after antibiotic treatment[18]. There is no evidence of their effectiveness in primary prevention [19]. Single reports indicate their effectiveness in preventing pouchitis [20], but their effectiveness in the treatment of acute pouchitis has also not been confirmed [20]. Research is ongoing on the effectiveness of inulin in the treatment of chronic pouchitis [20]. However, further research on a wider patient population is necessary [18].

Despite antibiotic therapy (antibiotic-resistant forms), approximately 20% of patients unfortunately still complain of persistent symptoms [18]. These patients show the presence of IgG4 immunoglobulins in biopsies from the reservoir, and increased IgG4 concentration in blood serum (usually above 10 mg/dl) [18]. This particular type of IgG4-dependent pouchitis shows a good response to steroid therapy [19]. The treatment of choice is oral steroids [20]. 30% of patients respond well to budesonide enemas [18]. Early determination of IgG4 concentration allows for limiting the consumption of antibiotics and shortening the duration of symptoms [19].

Approximately 7% of patients suffer from severe and often recurrent episodes of inflammation that do not respond to treatment [18]. Ultimately, this requires the removal of the pouch and the creation of a permanent ileostomy [18].

Recommendations for patients with an intestinal pouch. Attention should be paid to 4 important aspects when treating patients with an intestinal pouch [18]. The first is minimizing the functional consequences of creating the reservoir [20]. After the reservoir has been created, the patient receives detailed instructions on how to proceed, firstly, to improve the muscles that were not damaged during the procedure, and secondly, to regain the function of the 'lost' muscles by stimulating the regeneration of their damaged innervation [20]. The patient should perform the recommended exercises independently at home [18]. Rehabilitation consultations are also recommended, during which, under the supervision of experienced rehabilitators, the patient can learn how to perform exercises properly and use devices to stimulate the pelvic floor muscles [19]. The improvement in function initially achieved is unstable and often disappears when exercise is stopped [18]. Systematic exercises and muscle stimulation repeated regularly and for a sufficient length of time (minimum period 6 months) allow the vast majority of patients to fully restore their functions [18]. In rehabilitation, both the regularity of exercises and the duration of therapy are important [19]. There are also therapeutic tools that help increase the effectiveness of training [18]. The first is biofeedback supervised using surface electromyography (EMG) [18], during which the patient learns to precisely tighten the pelvic floor muscles [18]. Under the supervision of a physiotherapist, the patients is instructed how to perform the exercise correctly [18]. Moreover, special reports on work progress are created during visits [18]. In addition, there is also home stimulation [18] in which the procedure is performed by the patient using an electro-stimulator at home [18], which generates electrical impulses with appropriately selected parameters [20]. Such treatments should be performed once or twice a day for 30–40 minutes. This allows for faster muscle regeneration and more efficient restoration of damaged innervation in the pelvis.

Female patients, after the creation of a J-type pouch, are recommended to exercise using vaginal weights to strengthen the levator ani muscle [20], using weights ranging from 35 g – 70 g, beginning with the lightest weights and increasing to the heaviest. The patient should walk with these weights for 1–2 hours a day [19]. In addition, there is also the possibility of manual therapy of the pelvic floor muscles. This involves massaging the muscles the pelvic floor, per rectum, per vaginam, or from the outside in the area of the ischial tubercles [19]. This allows relaxation of the tense and deformed pelvic floor muscles when electrostimulation and exercises have proved to be ineffective.

If the functional effects of the reservoir are unsatisfactory despite rehabilitation, sacral nerve stimulation can be also be used [18]. This is based on the implantation of an electric pulse generator in the area of the S3-S4 sacral roots in patients who have responded positively to several days of transcutaneous stimulation [18]. The effectiveness of this treatment is estimated at 75%. After the procedure, the frequency of episodes of incontinence and sudden urges decreases, the ability to distinguish between gases and stools improves, and the daily number of bowel movements decreases. Rehabilitation of a patient with a J-pouch is necessary to maintain optimal parameters of his/her functioning and to avoid symptomatic fecal incontinence [20].

The second aspect to be considered is minimizing the metabolic consequences of the formation of the J pouch, which are particularly severe in patients who struggle with chronic inflammation of the pouch, and is closely related to villus atrophy [18]. Their complete atrophy is observed in 33% of patients and is associated with the lowest values of plasma concentrations of albumin, calcium, cholesterol and vitamin E [18]. However, the concentrations of bile acids and vitamin B12 decrease the most in inflammation of the afferent loop of the reservoir when excessive bacterial growth occurs [18]. In the case of these patients, constant monitoring of these parameters is important, and if necessary, supplementation the deficiencies [19]. Anaemia is also common among these patients, in as many as 21% of patients, and in 56% of patients with iron deficiency. Deficiencies are best supplemented intravenously, and if supplemented orally, only in the form of chelates [18]. This is important because regular oral iron preparations may increase bacterial growth and stimulate inflammation in the intestine. A surplus of free iron in the intestine may result in the accumulation of Gram-negative bacilli in the intestinal lumen, especially Escherichia coli, and an increase in the number of endotoxins produced by them, which will exacerbate inflammatory processes and, consequently, diarrhea [18].

Vitamin B12 deficiencies occur in 3–25% of patients [19]; therefore, a dose of 1,000 μg of vitamin B12 is administered intramuscularly once a month [18]. Vitamin D deficiency is estimated to occur in 10–80% of patients [18]. Osteopenia affects over 40% of patients, while osteoporosis affects 13% of patients [19]. The reduction in bone mineral density is influenced by age, low body mass index (BMI), lack of calcium supplementation, and inflammatory complications of the reservoir. It is recommended to supplement vitamin D at a dose of 1,000–2,000 IU/day and calcium at a dose of 1,500 mg/day [20]. Vitamin E deficiencies are counteracted by administering vitamin E preparations at a dose of 10–12 mg of tocopherol equivalents per day [18]. Kidney stones occur in 7% of patients with non-specific inflammatory diseases [20]. However, in patients with a reservoir, this value increases to 37% [18], and in most cases, the disease is accompanied by

symptoms. Potential causes of this condition may be excessive amounts of oxalates in urine, reduced urine volume and pH, and too low citrate and magnesium concentrations. Patients with a reservoir and parenteral form of the disease, as well as those who do not use antibiotics, are at increased risk of developing nephrolithiasis. In such cases, the patient should be abundantly hydrated (at least 2–2.5 l/day), limited oxalates in the diet, and avoidance of excessive calcium and vitamin D supplementation [18].

Ileostomy – indications and complications. An ileostomy is created by excising the small intestine and inserting the tip through a surgically-created opening in the rectus abdominis muscle, through the skin [21]. It is commonly used in the surgical treatment of patients suffering from rectal cancer [22]. However, this is not the only indication of a stoma. Indications for its performance include familial adenomatous polyposis and severe inflammatory bowel disease, for example, UC or Crohn's disease and colorectal cancer [22]. Familial adenomatous polyposis is a genetically determined disease that manifests itself in the presence of a very large number of adenomatous polyps in the colon and rectum [22]. The lifetime probability of developing colorectal cancer in untreated people is close to 100% [22]. The disease begins to develop in late teenage and, if left untreated, may develop within 5–30 years [22]. The treatment of choice in this case is total colectomy with removal of the rectal mucosa [22]. Crohn's disease is a non-specific inflammatory bowel disease, similar to UC [22], and is treated with immunosuppressive drugs and steroids. Surgical methods are used when the desired treatment effects are not achieved, [22]. UC is a chronic inflammation and ulceration of the intestines that affects the continuous portion of the large intestine [22]. Surgery to remove the entire colon is successful in most cases [22].

Complications of ileostomy are reported in the vast majority of cases, estimated at more than 70% of such cases [23]. Older studies point to the need for ileostomy revision in 23–38% of cases within 5–10 years [23]. It is erroneously claimed that initial ileostomy construction is an easy procedure [23]; however, proof that this is not the case, is the high rate of complications [23]. In some of them, surgical intervention is necessary [23].

One of the complications is the retraction of the ileostomy, which causes leakage and skin irritation [23], problems that are noticeable in patients with a shortened mesentery [23]. Ileostomy prolapse, with or without a parastomal hernia, may result in obstruction, ischemia, skin irritation, and difficulty in operating the device [23]. In addition to the large volume of ileostomy that may be responsible for electrolyte disturbances, several mechanical complications may lead to significant symptoms [23]. In the Salvadalena systematic review, the following complications were most commonly reported: retraction, haernia, prolapse, peristomal skin problems, and necrosis [23,24]. It is sometimes necessary to undertake revision ileostomy procedures [23]. Anastomotic leak is one of the most serious complications after anastomotic resection for rectal cancer [25]. Temporary ileostomies may reduce the risk of anastomotic leakage, but they are not risk-free [25]. The presence of a transitional ileostomy is also associated with the risk of complications related to ileostomy closure surgery [25]. A systematic review in which Chow et al. described 6,000 patients, showed that the overall morbidity associated with ileostomy closure is 17.3% [25]. Moreover, even though a diverting ileostomy is temporary, not everyone can close it [25].

It has been reported that the incidence of a permanent stoma is as high as 20% (This does not fit here) [25]. A study by Phatak et al. distinguishes 2 groups of complications related to ileostomy: complications related to the ileostomy (or its condition) and complications related to its closure [25]. Condition complications included re-hospitalization for dehydration and the need for stoma revision [25]. Other criteria assessed included late initiation of adjuvant therapy (more than 8 weeks after primary resection), failure of adjuvant therapy (administration for less than 3 months), and stoma problems, such as bleeding or prolapse [25]. In the case of stoma closure complications, the most common complication was intestinal obstruction, followed by surgical site infection and then small intestinal obstruction [25].A small number of respondents (1.8%) required subsequent colostomy due to abnormal bowel function, e.g. increased frequency, increased urge to urinate, anal pain, excoriation around the anus, and inability to completely defecate [25]. Subsequent readmission was due to anincisional hernia [25]. A retrospective review by Messaris et al. showed that dehydration was the most common cause of re-hospitalization within 60 days of surgery [25]. The study included 603 patients and the percentage of patients with dehydration was 16.9% [25]. Additionally, another prospective cohort study showed that all patients with a diverting ileostomy had a significant decrease in glomerular filtration rate measured before ileostomy closure, compared to immediately after stoma formation [24,25].

Complications of ileostomy are common, and surgical treatment may result in significant morbidity, re-admission to hospital, and re-operation [23]. All patients should therefore be informed about the potential risks of this procedure.

SUMMARY

In most cases, the creation of an intestinal pouch provides the patient with greater comfort in life because the natural route of defecation is maintained. However, this is not the rule in every case. Various manifestations of enteritis can not only lead to several infectious and digestive problems, but also significantly worsen the quality of life. In the presented case report, the patient had experienced persistent constipation for 20 years which necessitated the removal of the intestinal pouch and creation of a stoma. The patient was aware of the risks involved in performing the procedure and signed all the required consents. The procedure was performed, but a large number of post-operative complications unfortunately led to multi-organ failure and the death of the patient.

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