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## SUMMARY

Gratiashvili E.<sup>1</sup>, Akhmeteli L.<sup>2</sup>, Ivanishvili T.<sup>2</sup>, Kobadze S.<sup>1</sup>, Todua S.<sup>1</sup>

## A MODERN APPROACH TO THE TREATMENT OF PILONIDAL ABSCESS

PROCTOLOGY DEPARTMENT OF TODUA CLINIC<sup>1</sup>; TSMU, DEPARTMENT OF SURGERY<sup>2</sup>

**The aim of the study:** After simple drainage of a pilonidal abscess, more than 70% of cases quickly develop a relapse or form a chronic sinus, which is why it is necessary to perform repeated operations. Based on the results of existing studies and interpreting the mechanism of the disease, it can be assumed that, if we drain the abscess from the wound obtained with minimal excision of the primary orifices, the probability of recurrence will decrease. The aim of our study was to evaluate the safety and efficacy of drained pilonidal abscess from wound obtained by minimal excision of primary orifices.

**Results:** The study involved 54 patients, including 21 females and 33 males, whose ages varied between 17 - 45. The operation lasted on average 13 minutes, and patients were discharged after 2 hours from entering the clinic. All patients were fully healed. Wound healing duration varied within 21-58 days (on average 34.6 days). Complications were detected in two patients (3,7%), in one case with wound infection (1,85%), and in the second case there was bleeding (1,85%). From a cosmetic point of view, the result was satisfactory for all patients. Two cases of disease recurrence were observed during the study (3.7% recurrence). The average follow-up period amounted to 22 months (10-34 months).

**Conclusion:** Drainage of pilonidal abscess by excision of the primary orifices is an effective and safe method in the treatment of acute pilonidal disease. It is easy to perform, requires little time, the patient does not need to be hospitalized, and is characterized by minimal discomfort. It can be presented as a first-line treatment method for pilonidal abscess.

Gurgenidze M.<sup>1</sup>, Asatiani G.<sup>2</sup>, Pipia E.<sup>3</sup>, Kochiashvili K.<sup>3</sup>

## MULTIPLE DIVERTICULA OF THE GASTROINTESTINAL TRACT AND SERIES OF SERIOUS COMPLICATIONS

TSMU, SURGERY DEPARTMENT<sup>1</sup>, DEPARTMENT OF GENERAL SURGERY<sup>2</sup>, THE FIRST UNIVERSITY CLINIC OF TSMU, DEPARTMENT OF SURGERY<sup>3</sup>

**Topical Subject** Diverticula can be located at any location of the gastro-intestinal tract, from the upper esophagus to the colon. In order of decreasing frequency, they are found in the colon, duodenum, esophagus, stomach, jejunum and ileum. Within the small intestine, the duodenum is the most common localization of small bowel diverticular disease, with the incidence of jejunum and ileum being between 0.7% and 1%. The incidence of simultaneous diverticula in the large intestine and the small intestine is approximately 20% to 70%. However, there is only a 10% to 40% chance if it is present in the duodenum and only 2% if diverticula are found in the esophagus and stomach [1, 3, 11, 13].

**Case Report** The patient, 75-year-old female, was admitted to TSMU the First University clinic on 01.02.2022 with complaints of defecation with bloody secretions and blood clots, dizziness, weakness. According to the patient, complaints began about 6 hours before admission to the clinic. This episode was the first in the patient's life. Skin and visible mucous membranes were pale. The abdomen is symmetrical, palpation is soft, painless. Rebound sign was negative. On rectal examination, there was a trace of cherry-colored blood on the glove. Preliminary diagnosis: gastrointestinal bleeding. Blood tests revealed moderate anemia and hypo-coagulation, normal liver function tests. Hemodynamics was stable. Conservative treatment with a hemostatic, gastro-protector, infusion and symptomatic therapy was started. Esophagogastroduodenoscopy (EGDS) was performed in the emergency department. No active bleeding or trace of bleeding was found.

On the day of admission, the patient was transferred from the ER department to the surgical department. Anemia worsened the next day. Transfusion of blood and fresh frozen plasma were performed. An emergency colonoscopy was performed. Non-bleeding diverticula were found starting from the sigmoid colon and including the transverse colon. Abdominal CT did not reveal any other pathology.

03/03/2022 18:20 there was a tendency to hypotension. The patient was adynamic, drowsy. Clinically, a picture of hypovolemic shock was revealed. The patient was transferred to the intensive care unit.

Due to recurrent, and currently ongoing, intense bleeding, it was decided to perform an emergency operation. Intraoperatively, the large intestine was completely filled with blood. There are multiple diverticula throughout the large intestine. On the mesenteric side of the wall of the small intestine, 40 cm from the ligament of Treitz, there are multiple non-bleeding (no blood is observed in the small intestine) diverticula of different diameters. Solitary diverticula were found at a distance of 130 cm from the ligament of Treitz and 15 cm from the Baugin's valve. Active diffuse bleeding was recorded. The decision was made to perform a total colectomy. After colectomy, the rectum was sutured at the level of

the ampullary part and a terminal ileostomy was formed. One drain was placed in the pelvic area.

On the fifth day after the operation and on the eighth day after admission, the patient's condition deteriorated sharply. Hemodynamics became unstable. Abundant hemorrhagic discharge was noted from the ileostomy. An emergency EGDS was performed. Blood enters the duodenum from the small intestine retrogradely. Enteroscopy from ileostomy was also performed, but due to heavy bleeding, it was not informative.

An emergency relaparotomy was performed. Intraoperatively, a blood-filled stomach, duodenum and total, small intestine was found. After possible evacuation of blood from the small intestine through the ileostomy and decompression of the stomach with a nasogastric tube, intraoperative EGDS and enteroscopy from the ileostomy were performed. Multiple bleeding diverticula were found in the duodenum and small intestine. Endoscopic hemorrhage control failed. After that, the duodenum was mobilized according to Kocher and two adjacent large diverticula (diameter 4 and 3.5 cm) were found on the posterior wall of the descending part of the duodenum. Proximal to the ligament of Treitz, also on the back wall, there is another large diverticulum (diameter 4 cm). On the mesenteric side of the wall of the small intestine, 40 cm from the ligament of Treitz, there are multiple diverticula of different diameters (maximum diameter 2cm). These diverticula cover 80 cm of the small intestine. The described first two diverticula were sutured with interrupted and purse-string sutures and screwed into the duodenum. The third diverticulum near the ligament of Treitz was removed and the duodenum was sutured with a double row suture. A resection of the part of the small intestine affected by diverticula with side-to-side anastomosis was performed. Hemostasis was achieved. Two drains were placed in Morison's fossa and pelvis. The laparotomy wound was sutured (Fig. 1).



Fig. 1. Duodenal diverticulum

After the operation, again treatment continued in the ICU. On the fifth day after relaparotomy, the patient's condition deteriorated sharply. Discharge of small intestine contents

from abdominal drainage was noticed. Perforation of a hollow organ was diagnosed and the patient, after a short preoperative preparation, was taken to the operating room. Intraoperatively, in the abdominal cavity there was a small intestine content in the amount of 500 ml. It was evacuated. At a distance of 130 cm from the ligament of Treitz, a perforation of the small intestine diverticulum was found. Entero-enteroanastomosis and sutured places of the duodenum were airtight. The perforated diverticulum was excised and small intestine was sutured. The abdomen was washed with saline. At the end of the operation, only the skin was sutured.

Again, on the fifth day after the last operation, the patient's condition worsened and small intestinal discharge appeared again from the drainage. During an emergency operation, perforation of one more diverticulum was diagnosed at a distance of 15 cm from the Baugin's valve. The diverticulum was excised and small intestine was closed with the two layers suture. After washing of abdominal cavity, again, only the skin was sutured.

Intensive conservative treatment, mechanical ventilation continued. Blood transfusions and transfusions of fresh frozen plasma were performed according to indications. Hemodynamics was stable. On the sixth day after the last operation, an episode of bleeding was noted from the ileostomy. There was no bloody discharge from the nasogastric tube. Bleeding was controlled conservatively. On the sixth day after the last bleeding episode hemodynamics became unstable. Despite the complex conservative treatment, the condition worsened. On the 39th day after admission to the clinic, the patient's condition became critical and despite the resuscitation measures, biological death was stated.

**Discussion:** First described by Chomel, a French pathologist, in 1710, diverticula of the duodenum are relatively common, representing the second most common site for diverticulum formation after the colon [13]. The incidence of duodenal diverticula varies, depending on the age of the patient and method of diagnosis. Upper gastrointestinal (GI) radiographic studies identify duodenal diverticula in 1% to 5% of all studies, whereas endoscopic retrograde cholangiopancreatography identifies 9% to 23% of cases. Previous autopsy series report the incidence as being approximately 15% to 20%. They are classified as congenital or acquired, true or false, and intraluminal or extraluminal [13]. The most common location is the second part of the duodenum (62%), followed by the third part of the duodenum (30%), and finally the fourth part of the duodenum (8%). Duodenal diverticula are predominately false diverticula that develop because of a combination of intraluminal pressure and a weakness of the muscular wall. Although common, duodenal diverticula are largely asymptomatic and discovered incidentally. Symptoms may include obstruction, infection, jaundice, pain, perforation, or bleeding. Only those diverticula associated with the ampulla of Vater are significantly related to complications of cholangitis and pancreatitis [12, 13].

Less than 5% of duodenal diverticula will require surgery because of a complication from the diverticulum itself. For symptomatic duodenal diverticula, treatment consists of removal of the diverticulum, which can be accomplished endoscopically or surgically. All intraluminal duodenal diverticula require treatment as recurrence of symptoms is certain. Curative treatment consists of removal of the intraluminal diverticulum by laparotomy and duodenotomy or by endoscopic resection. Extraluminal duodenal diverticula should be resected in the setting of symptomatic disease or need for urgent surgery, such as free perforation or hemorrhage. The most common and effective treatment is diverticulectomy.

Careful identification of the ampulla is essential to prevent injury to the common bile duct and pancreatic duct. For diverticula embedded deep within the head of the pancreas, a duodenotomy is performed, with invagination of the diverticulum into the lumen, which is then excised, and the wall is closed [13].

Jejuno-ileal diverticulosis (JID) was first described by Sommering in 1794. It is found twice as much in men as in women, 75% are found incidentally. JID is a rare entity, most often found incidentally during radiological investigations. The incidence of small bowel diverticula ranges from 0.06% to 1.3% [1, 3, 7].

JID diverticulosis involves only the mucosal and submucosal layers (false diverticula), and is characterized by herniation of mucosa and submucosa through the muscular layer of the bowel wall. The herniation is placed through the weakest mesenteric site of the bowel wall. With the exception of Meckel's diverticulum, JID are acquired. They may be primary, or secondary to conditions like Crohn's disease, tuberculosis, and abdominal surgery. There are three types of microscopic abnormalities: 1. visceral neuropathy = axonal and neuronal degeneration. 2. visceral myopathy = fibrosis and degenerated smooth muscle cells. 3. progressive systemic sclerosis = fibrosis and decreased numbers of normal muscle cells [5].

Although most cases are asymptomatic, 30% to 40% of cases progress to cause malabsorption, hemorrhage, chronic abdominal pain, diverticulitis, obstruction, abscesses, and in severe cases diverticulum perforation. Therefore, it is imperative for physicians to consider small bowel diverticula in patients presenting with abdominal pain, nausea, fever, and other nonspecific GI symptoms to prevent such complications that can be life-threatening and potentially require surgical management. Jejunal diverticulosis is an unusual and rare cause of massive small bowel hemorrhage; however, it could be a fatal complication. This hemorrhage maybe due to diverticulitis with ulceration, diverticulosis associated with trauma and irritation disorder. More significantly, the hemorrhage could be due to arteriovenous malformations (AVMs). In general, AVMs or angiodysplasia of the GI tract is an acquired lesion of small submucosal and mucosal blood vessels which can give rise to hemorrhage. It is commonly found the colon but also occurs less frequently in the small intestine and stomach. The diagnostic modalities for AVMs are mainly endoscopic procedures [3, 7].

No treatment is required for asymptomatic small bowel diverticulosis. In cases of diverticulitis, the only definitive intervention is small bowel resection with primary anastomosis. Nonsurgical management can be considered in certain cases, generally consisting of broad-spectrum antibiotics and close observation for development of perforation or other complication. Similarly, surgery remains the definitive treatment in cases of severe bleeding. However more recently, successful interventions with argon plasma coagulation and endoclip placement have also been noted [4, 10, 16, 17].

Nearly 80% of small bowel diverticulosis (SBD) occurs in the jejunum, 15% in the ileum and 5% in both. Associated diverticula are frequently found in the colon (35-75%), in the duodenum (15-42%), in the esophagus (2%), in the stomach (2%) and in the urinary bladder (12%) [2, 6, 9, 15].

Diverticulosis is a common nomenclature for diverticula of the colon, which is the most common place that diverticula can occur in the GI tract. A diverticulum in the colon is of the false type. The incidence of diverticulosis is 5% at age 40 and increases substantially over time to 60% at age 80. Modern estimates indicate that fewer than 5% of patients with

diverticulosis will develop diverticulitis; however, due to the high prevalence of diverticulosis, it has become a significant clinical and financial burden. Up to 15% of all patients with diverticulosis will experience a complication of bleeding diverticula in their lifetime. Diverticular bleeding is the cause of up to 50% of all hematochezia. After one episode of diverticular bleeding, the recurrence rate of bleeding is estimated at 38%. Contrast studies, ultrasound, and MRI have also been used, but currently, CT has become the most useful examination to confirm the diagnosis, exclude other diagnoses, and classify the severity of the disease. Endoscopy is most effective in diagnosing colonic diverticular bleeding. Up to 80% of all diverticular bleeding can be identified on direct endoscopic visualization. Patients with complicated diverticulitis are characterized by the presence of an abscess, fistula, obstruction, or free perforation. The treatment for uncomplicated diverticulitis depends on the severity of symptoms, and the approach is subsequently individualized [8, 12, 13, 14].

In multiple literary materials, various combinations of multiple diverticula of the gastrointestinal tract are described, examples of various complications are given, but it is difficult to find a combination of the above-described diversity of localization of diverticula and a series of serious complications. Thus, the proposed case seems to us interesting, rare and instructive.

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## SUMMARY

### CLINICAL CASE REVIEW

Gurgenidze M.<sup>1</sup>, Asatiani G.<sup>2</sup>, Pipia E.<sup>3</sup>, Kochiashvili K.<sup>3</sup>

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TSMU, SURGERY DEPARTMENT<sup>1</sup>, DEPARTMENT OF GENERAL SURGERY<sup>2</sup>, THE FIRST UNIVERSITY CLINIC OF TSMU, DEPARTMENT OF SURGERY<sup>3</sup>

The incidence of simultaneous diverticula in the large intestine and the small intestine is approximately 20% to 70%. The incidence of small bowel diverticula ranges from 0.06% to 1.3%. Up to 15% of all patients with diverticulosis will experience a complication of bleeding diverticula in their lifetime. At the same time, information about the simultaneous complications of diverticula of different localization is very scarce.

This article describes an interesting case of a patient with multiple diverticula of the duodenum, small and large intestines. The disease was complicated first by profuse bleeding from all three areas of localization of diverticula, and then, alternate perforation occurred in two places of small intestinal diverticula. First, due to the ineffectiveness of conservative measures, due to ongoing bleeding, a total colectomy was performed. Then a relaparotomy was performed to control bleeding from three duodenal diverticula, as well as from small bowel diverticula. Two duodenal diverticula were sutured and the third was excised. A resection of the part of the small intestine was performed. During the same hospitalization, surgery was performed twice more for perforation of diverticula of the small intestine.

In multiple literary materials it is difficult to find a combination of the above-described diversity of localization of diverticula and a series of serious complications.

დარსანია თ.<sup>1</sup>, გარუჩავა ნ.<sup>2</sup>

## კუსტარულად დამზადებული სურსათით გამოწვეული კვებითი მოშხამების სსპარტოვლოში

თსუს, კვების, ასაკოვანი მადიცინის, გარემოსა და პროფესიული ჯანმრთელობის დეპარტამენტი<sup>1</sup>; ეპიდემიოლოგიისა და ჰიოსტატისტიკის დეპარტამენტი<sup>2</sup>

მსოფლიო ლიტერატურაში ვრცელადაა აღწერილი სახლის პირობებში დამზადებული სურსათით გამოწვეული კვებითი მოშხამების მაგალითები, რაც მიუთითებს, პირველ რიგში, დიასახლისებისა და, ასევე, ოჯახის სხვა წევრების მიერ პირადი ჰიგიენისა და გარემოს სანიტარულ-ჰიგიენური პირობების დარღვევებზე [1,7,8]. WHO-ის თანახმად, ყოველწლიურად რეგისტრირდება 1-1.2 მილიარდი დიარეული დაავადება, რისგანაც, დაახლოებით, 5 მილიონი ბავშვი იღუპება [10]. საქართველოშიც აღინიშნება ნაწლავური ინფექციების ზრდა და სახლის პირობებში დამზადებული სურსათით გამოწვეული კვებითი მოშხამების დიდი რიცხვი [9]. სურსათის წარმოების ტექნოლოგიური პროცესების, შენახვისა და რეალიზაციის პირობების სრულყოფა, აგრეთვე, მოსახლეობის განათლებისა და კეთილდღეობის მაღალი დონე ყოველთვის ვერ იქნება ამ დაავადების პრევენციის ან მისი კეთილსაიმედო გამოსავლის ძიების წინაპირობა [4]. ეს კიდევ ერთხელ ადასტურებს, რომ განათლება და კეთილდღეობა ყოველთვის არ განაპირობებს სანიტარული კულტურისა და ჰიგიენური ქცევის სათანადო სტანდარტს. მომხმარებელი წარმოადგენს საკვებისმიერი დაავადებების პროფილაქტიკის ბოლო რგოლს. ეს საკითხები მნიშვნელოვანია სურსათის უსაფრთხოების თვალსაზრისითაც, რადგან არასწორად შენახული და დამზადებული სურსათი სწრაფად ფუჭდება, შესაბამისად, საკვები გადანაყარის რაოდენობა იზრდება. სურსათის ჯაჭვის ყველა რგოლი პასუხისმგებელია ამ ეკონომიკურად გაუმართლებელ საქმიანობაზე. თუმცა ყველაზე დიდ პასუხისმგებლობას იღებს სურსათის ნარჩენებზე ეს უკანასკნელი ამ ჯაჭვში, ანუ ოჯახი. ევროკავშირში (EU-28, data for 2012) ოჯახი პასუხისმგებელი იყო ტყუილად დახარჯული სურსათის 50%-ზე [8]. მრავალი ფაქტორი, რომელიც გავლენას ახდენს სურსათის ნარჩენებზე, შეუმჩნევლად იმალება საყოფაცხოვრებო საქმიანობის რუტინის ქვეშ (სურსათის შექმნის, შენახვის, მომზადებისა და მიწოდების პროცესი), როგორც ნებითი ურთიერთობების ელემენტი [5]. აქედან გამომდინარე, კვლევის მიზანს საკვებისმიერი მოშხამებისა და დაავადებების რისკის ცოდნის დონის შესწავლა, სურსათის შექმნის, შენახვის, დამუშავებისა და დამზადების ეტაპებზე მოსახლეობის ქცევის შეფასება და სურსათის ნარჩენების მართვის მნიშვნელობაზე აქცენტირება წარმოადგენდა.

კვლევის მასალა და მეთოდები: კვლევა ჩატარდა 2019 წლის თებერვალსა და მარტში. ამონარჩევის ზომა შეადგენდა 1115 რესპონდენტს, რომელიც კვლევაში მონაწილეობის მიღებას დათანხმდა. რესპონდენტთა რაოდენობა პროპორციულად განაწილდა საქართველოს ყველა მსხვილ ქალაქში. კვლევა-