EXPERIENCE EXCHANGE

E.G. Grigoryev, A.V. Mel'nik, S.E. Grigoryev, A.V. Novozhilov

ROENTGENOSURGICAL TREATMENT OF CHRONIC PELVIC PAIN CAUSED BY PERIMETRIUM VENOUS CONGESTION

ABSTRACT

A 36-year-old female patient (having two children) presented with a permanent pain in hypogastric region, which increased during sexual intercourse. The woman had recurrent pains of such nature from the puberty age. The pain became permanent after the second childbirth. In this regard, sexual intimacy proved almost impossible. The occurrence and increase of pain were not associated with meal, physical exercise, menstrual periods or weather conditions. Dyspepsia was absent. Multiple consultations with medical specialists, including gynecologists were ineffective.

Complex radiation study (doppler ultrasound, multispiral computed tomography, angiography) diagnosed the signs of hyperemia - disorders in the drainage via the left gonadal vein. Superselective occlusion of the dilated vessel resulted in recovery: the pains discontinued, sexual function became normal.

Keywords: venous congestion, chronic pelvic pain, endovascular occlusion.

Varicose pelvic disease or pelvic congestion syndrome (PCS) is a pathological condition that is difficult to diagnose. The main symptoms of the syndrome is a chronic pelvic pain lasting more than 6 months independently of menstrual period, dyspareunia and dysmenorrhea [1, 6]. Louis Alfred Richet was the first to describe this condition in 1857. Pelvic venous hyperemia is caused by renal hypertension and valvular failure of the left ovarian vein [2, 4, 5]. Pelvic venous hypervascularization is the reason of abdominal pain in adolescent girls in 4% of follow-ups [2].

According to Lechter (1999), 70000 hysterectomies were performed annually in the United States for chronic pelvic pain resulted from undiagnosed pelvic varicosities. Currently, the main method for treating pelvic venous hyperemia and chronic pain is an intervention on the gonadal veins based on endoscopic or endovascular procedures. Radiologic surgical occlusion of gonadal veins is technically successful in 92-95% of patients, and its clinical efficacy ranges from 40 to 82% [3, 7].

Case Report

A 36-year-old female patient (having two children) presented with a permanent pain in hypogastric region, which increased during sexual intercourse. The woman had recurrent pains of such nature from the puberty age. The pain became permanent after the second childbirth. In this regard, sexual intimacy proved almost impossible. The occurrence and increase of pain were not associated with meal, physical exercise, menstrual periods or weather conditions. Dyspepsia was absent. Multiple consultations with medical specialists, including gynecologists were ineffective.

Objective status: habitus is regular, normosthenic; the abdomen of normal form is painful in hypogastrium in palpation, peritoneal symptoms are absent. Urination is painless, urine is transparent, straw-yellow in color. Defecation is normal. Rectal examination: perianal skin is not changed, sphincter tone is ordinary. The anterior wall of the rectum is moderately painful with indistinct prolapse. Gynecologic examination did not reveal any acute pathology.

Fig. 1. Selective contrast enhancement of the left renal artery. Retrograde injection of the dilated left gonadal vein during the venous phase

Clinical blood analysis: moderate increase of erythrocytes up to 4.86×10^{12}/l, decrease in blood hemoglobin to 110 g/l. Other rates correlated with the reference values. Clinical urine analysis, biochemical blood analysis, coagulogram were without abnormalities.

Multispiral computed tomography of the abdominal cavity showed varicosed pelvic veins, arteriovenous shunts between the left gonadal vein and the arteries of the left kidney (?). Screening ultrasonography of the abdominal cavity did not reveal any pathological changes.

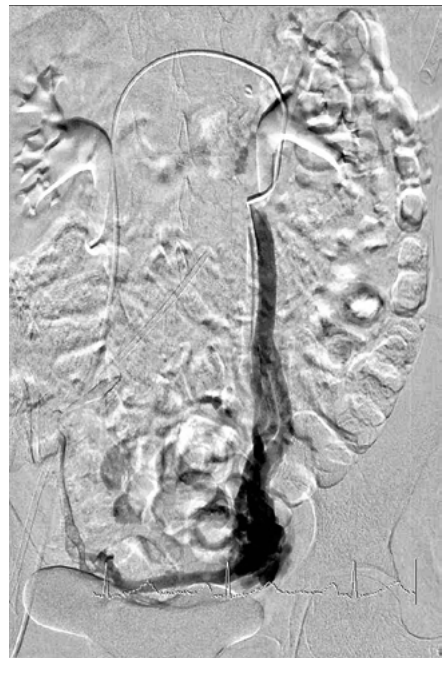

Fig. 2. Selective contrast enhancement of the left renal vein. Injection of ovarian vein and varicose plexus of the small pelvis

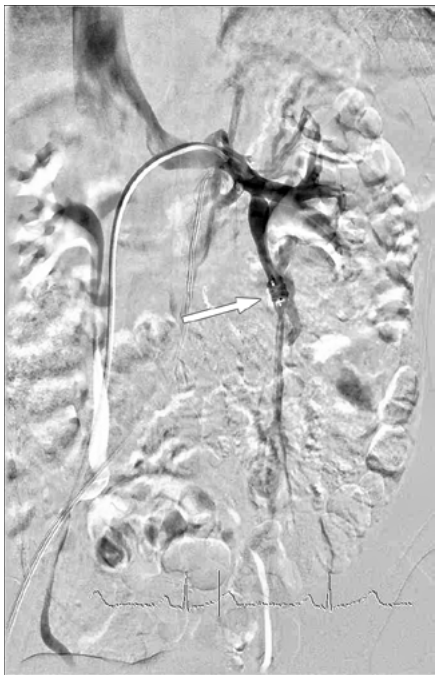

Fig. 3. Selective contrast enhancement of the left renal vein. Occlusion of gonadal inflow by spiral element (arrow)

A detailed instrumental examination was performed. Duplex scanning of renal arteries did not reveal hemodynamic disorders. The diameter and hemodynamic parameters of the abdominal aorta were without changes.

Ultrasound duplex scanning of the superior mesenteric artery showed that it branched off the aortic wall at an acute angle, compressing the left renal vein in the proximal segment, the diameter of which was 1,8 mm in its narrowing. In the preaortic part, the left renal vein was dilated to 1,0 cm, there was a shunt into the left gonadal vein, which was dilated to 0,8 cm. Right renal vein was of ordinary diameter (0,6 cm) with preserved blood flow.

The inferior vena cava was patent in every segment. Common and external iliac veins were without changes on either side. Varicose alterations of pelvic veins: right veins were tortuous and dilated to 7,0 mm; left veins were dilated to 8,0 mm; blood flow was spontaneous, reduced, located on both sides.

Considering the above findings in the venous bed and clinical data, the diagnosis was made: aorto-mesenteric compression of the left renal vein; varicose dilation of the left ovarian vein; pelvic veins varicosity; pelvic venous hyperemia (pelvic congestion syndrome); chronic pelvic pain. It was decided to carry out radiologic surgical intervention for diagnostic and therapeutic purposes.

Selective rheovasography (SRVG) revealed no pathology on the right. Left SRVG showed renal artery without changes. The venous blood outflow from the left kidney was via renal and dilated ovarian veins. The latter was drained into a varicose network of pelvic veins (Fig. 1). Then the contrasted blood entered the inferior vena cava by several collectors. Angiography of the left renal vein was performed from venous access. Varicose ovarian vein originated from its proximal part (closer to the kidney portal) (Fig. 2).

It was decided to embolize the left ovarian vein. Amplatzer vascular plug 2 (8 mm in diameter) was positioned in its proximal part. Monitoring SRVG showed the absence of shunting into the ovarian vein. Monitoring angiography from the renal vein (venous access) showed that renal vein was intact, ovarian vein stump was visualized on the left (Fig. 3).

The early postoperative period was uneventful. The patient was inspected in 24 hours after the manipulation. She complained of moderate pain in the puncture sites on the right thigh. Abdominal pain was not manifested. The abdomen was soft and painless in palpation. The patient was discharged two days after manipulation in good condition.

The patient was surveyed in 7 months: pain is absent, sexual life is comfortable.

Discussion. The patient was admitted to the hospital with a long history of chronic pelvic pain. Arteriovenous shunt between the left renal artery and the left gonadal vein was supposed, but was not confirmed in a subsequent examination.

However, an anomalous angle of the superior mesenteric artery origin from the aorta was revealed, which resulted in compression of the left renal vein with the formation of a collateral blood outflow via the left gonadal vein. Subsequently, the pelvic venous congestion developed, which clinically manifested as the progressing syndrome of chronic pain.

Detailed examination allowed an accurate diagnosis and an adequate management. Direct angiography verified the findings of non-invasive radiation methods and enabled minimal invasive correction of hemodynamic disorders and as a result the relief of the permanent pain.

Thus, women with chronic pelvic pain syndrome need obligatory duplex ultrasound examination of the venous bed of the small pelvis with an assessment of hemodynamic parameters. Angiography of the venous bed with the material occlusion of the pathological venous shunt allows effective and fast relief of clinical manifestations of pelvic congestion syndrome and pain.

References

1. Верезгова С.В., Троик Е.Б. Использование эндоваскулярных методов для диагностики и лечения варикозной болезни малого таза. Дальневосточный медицинский журнал. 2016; 2: 20-23. [Verezgova SV, Troik EB. The use of endovascular techniques for the diagnostics and treatment of varicose veins of pelvic congestion syndrome. Dal'nevostochnyy meditsinskiy zhurnal. 2016; 2: 20-23. (In Russ.).]

2. Гарбузов Р.В., Поляев Ю.А. Хирургическое лечение при венозной конгестии таза при патологии гонадных вен у подростков. Российский вестник детской хирургии, анестезиологии и реаниматологии. 2012; 2(2): 21-26. [Garbuzov RV, Polyaev YuA. Surgical treatment of venous congestion of the pelvic in the syndrome pathology of gonadal veins in adolescents. Rossiyskiy vestnik detskoy khirurgii, anesteziologii i reanimatologii. 2012; 2(2): 21-26. (In Russ.).]

3. Кириенко А.И., Гаврилова С.Г., Янина А.М., Турищева О.О. Оценка эффективности хирургических способов лечения тазового венозного полнокровия. Флебология. 2016; 10(1): 44-49. [Kirienko A.I., Gavrilov S.G., Yanina A.M., Turishcheva O.O. Results of different types of operations in patients with pelvic congestion syndrome. Flebologiya. 2016; 10(1): 44-49. (In Russ.).] DOI: 10.17116/flebo201610144-49

4. Соколова А.А., Цветкова Н.В. Варикозное расширение овариальных вен – диагностика и лечение. SonoAce International. 1999; 4: 19-22. [Sokolova AA, Tsvetkova NV. Varicose ovarian veins - diagnosis and treatment. SonoAce International. 1999; 4: 19-22. (In Russ.).]

5. Brown CL, Rizer M, Alexander R. Sharpe III EE, Rochon PJ. Pelvic Congestion Syndrome: Systematic Review of Treatment Success. Semin. Intervent. Radiol. 2018; 35(1): 35-40. DOI: 10.1055/s-0038-1636519.

6. García-Espinosa J, Martínez-Martínez A.Left Ovarian Vein Drainage Variant: An Exceptional Cause of Pelvic Congestion Syndrome. Eur. J. Vasc. Endovasc. Surg. 2018; 5(4): 592. DOI: 10.1016/j.ejvs.2018.01.002.

7. Whiteley MS, Lewis-Shiell C, Bishop SI, Davis EL, Fernandez-Hart TJ, Diwakar P, Beckett D. Pelvic vein embolisation of gonadal and internal iliac veins can be performed safely and with good technical results in an ambulatory vein clinic, under local anaesthetic alone - Results from two years' experience. Phlebology. 2018; 33(8): 575-579. DOI: 10.1177/0268355517734952.

Information about authors

Grigoryev Evgeniy Georgievich - corresponding member of the Russian Academy of Sciences, MD, Professor, head of the department of hospital surgery of Irkutsk State Medical University, scientific director of Irkutsk Scientific Centre of Surgery and Traumatology, egg@iokb.ru,

Mel`nik Alexey Viktorovich – roentgen-endovascular surgeon of Irkutsk Regional Clinical Hospital, egg@iokb.ru,

Grigoryev Sergey Evgenievich - PhD, surgeon of the department of portal hypertension of Irkutsk Regional Clinical Hospital, grigorievse@gmail.com,

Novozhilov Alexander Vladimirovich - PhD, head of the department of portal hypertension of Irkutsk Regional Clinical Hospital, novozhilov_av@mail.ru.

V.V. Saveliev, M.M. Vinokurov, T.V. Yalynskaya

OUR EXPERIENCE OF LAPAROSCOPIC SUTURING PERFORATIVE GASTRODUODENAL ULCER IN THE MULTIDISCIPLINARY URGENT SURGICAL CENTER OF THE REPUBLIC SAKHA (YAKUTIA)

ABSTRACT

The **aim** of the study was to evaluate the results of surgical treatment of patients with perforated gastroduodenal ulcer, taking into account the use of the laparoscopic method in a multi-field surgical center of the Republic of Sakha (Yakutia).

Material and methods. The work is based on the analysis of the results of treatment of 108 patients with perforated gastroduodenal ulcer, of which 45 (41,7%) underwent laparoscopic suturing of the perforated opening.

Results. The first experience of laparoscopic suturing of perforated gastroduodenal ulcer demonstrated the promise of the method, as well as its high efficiency and safety. **Conclusion**. The introduction of the method allowed to reduce the number of postoperative complications by 1,7 times, and to reduce the length of stay in a multidisciplinary surgical hospital by 28,6%.

Keywords: perforated gastroduodenal ulcer, laparoscopic suturing.

Introduction. In urgent surgical practice, operations for perforated gastroduodenal ulcers are still relevant. According to a number of researchers [1], the incidence of gastric ulcer and duodenal ulcer among the adult population in the Russian Federation is 3-15%, in 5-15% of patients the disease course is complicated by ulcer perforation, while postoperative mortality ranges from 1,3 to 19,4%, depending on the time of admission of the patient to the hospital [6], and the number of postoperative complications reaches 17% [8].

It is worth noting that, at present, the treatment of this complication of peptic ulcer disease is one of the many unsolved problems of surgical gastroenterology [4]. The operation of choice in most clinical cases is laparoscopic suturing of the perforation hole. Technically, suturing is fairly easy to do and provides favorable immediate results of treatment [7]. The need to perform more complex operations rarely arises (a combination of perforated ulcers with stenosis of the output section of the stomach and duodenum, multiple and callous ulcers, widespread purulent peritonitis). The disadvantage of the suturing operation is the high purity of the recurrence of peptic ulcer - up to 45% [4]. At present, with the advent of a new generation of drugs that have a proven ability to significantly accelerate the processes of repair and healing of ulcers, as well as prevent their relapses, prospects have opened up for improving the long-term results of the treatment of perforative ulcers after they are sutured [3].

In the Republic of Sakha (Yakutia), as well as in other regions of the Russian Federation, the perforation of the gastroduodenal ulcer is one of the leading places among urgent surgical pathology. According to the Yakutsk Republican Medical Information and Analytical Center (YRMIAC), in recent years there has been a slight decrease in the incidence of gastric ulcer and duodenal ulcer – 6,3‰ in 2017 compared to 7,8‰ in 2010, but the problem is significant degree complicates the formation of various forms of severe complications, including perforation, bleeding and malignancy. The current situation is alarming and creates the need to search for more effective diagnostic methods, as well as to improve the principles and methods of conservative and surgical treatment that exist today.

Research materials and methods. The presented work is based on a retrospective analysis of the results of complex treatment of 108 patients with perforated gastroduodenal ulcer who were treated in the emergency surgery department of the Republican Hospital № 2 - Emergency Medical Center of the Republic of Sakha (Yakutia) from 2010 to 2019. The average age of patients was 35.2 ± 5.5 years, while there were 73 men (67,6%) and 35 women (32,4%). The diagnosis, perforated gastroduodenal ulcer, is verified on the basis of a modern multi-level comprehensive examination. Patients were divided into study groups. The main group consisted of 45 (41.7%) patients who underwent laparoscopic suturing (LS) of the perforation hole, and 63 (58.3%) patients with the control group who underwent perforation ulcer excision (PUE), including duodenoplastic (according to Judd-Tanaka, Judd-Horsley) depending on its location. Perforation of gastric ulcer during surgery was found by us in 27 (25%) and duodenal ulcers - in 81 (75.0%) patients. At the same time, in 39.7% of cases, local serous-fibrinous peritonitis was detected, in 55.0% - diffuse and 5.3% - widespread purulent. The diameter of the perforation hole, when conducting LS and PUE, averaged 5.0 ± 1.4 mm.

All operations were performed using the endoscopic system Karl Storz Endovision ® DCI® with the autorotation system (ARS) - a digital single camera, PAL, NTSC color systems with an integrated digital image processing module. A set of DCI® HOPKINS®II laparoscopes (10 mm large format optics), trocars, forceps, scissors, dissectors, Karl Storz Click´Line® extractors under combined endotracheal anesthesia. We considered contraindications to the performance of