

# PREOPERATIVE DIAGNOSIS AND SURGICAL TREATMENT OF STRANGULATED HERNIA THROUGH THE FORAMEN OF WINSLOW

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<b>ABSTRACT</b>	The case of timely diagnosis and surgical treatment of a rare strangulated hernia through the foramen of Winslow is reported.
<b>Keywords:</b>	internal hernia, hernia through the foramen of Winslow.

MSCT – multislice computed tomography

Internal hernias of the abdominal cavity as a cause of intestinal obstruction occur in 0.5–4.1% of cases, according to various estimations [1]. Among them, hernias through the foramen of Winslow occur in 8% of cases, which is 0.08% of all abdominal hernias [1–3]. According to the literature, the small intestine is most commonly strangulated (63%), followed by cecum, ascending colon (30%) and transverse colon (7%). There are also rare reports on gallbladder, greater omentum and Meckel diverticulum strangulated in the foramen of Winslow [3].

Since the first *Balandini* report in 1834 (according to autopsy), the world literature has described 200 cases of hernia of the foramen of Winslow. Of these, the hernia was diagnosed preoperatively less than in 10% of cases [2]. We have not found cases of preoperative diagnosis of this disease in the Russian literature.

The clinical picture of the disease is not specific. Patients usually undergo surgeries for acute intestinal obstruction, and the diagnosis is made intraoperatively [2, 4]. Unfortunately, the difficulty of diagnosing is often caused by ill-timed operation, resulting in necrotized strangulation. The mortality rate reaches 49% in such cases [1–3]. We present a clinical example.

A 29-year old male patient B. was admitted to the emergency department of Irkutsk Regional Clinical Hospital a day after the onset with complaints of epigastric pain, nausea, vomiting. He associated pain with alcohol consumption and copious meal. He also denied chronic diseases. No operations in the medical history.

Satisfactory condition upon admission. Malnutrition. Moist tongue, overlaid with gray-brown coating. The abdomen of regular shape, involved in the act of breathing, soft, painful in epigastric region where the soft elastic infiltrate of about 15 cm was defined. No abdominal aorta pulsation. No sounds upon vessel auscultation. No symptoms of peritoneal irritation. Leukocytosis 12,000 in 1 mm<sup>3</sup>, without a shift, blood amylase 90 g/h\*L.

The ultrasound scan of the abdomen was performed. The pancreas was visualized fragmentarily and had blurred contours, increased echogenicity, diffusely heterogeneous structure. There was a liquid formation of 13.0x6.3 cm with heterogeneous content in the projection of the body and tail. Symptoms of acute pancreatitis, pancreatic bursitis.

MSCT of the abdominal cavity revealed heterogenous liquid gas-containing formation of 90x210 mm, located in the retrogastric region. The pancreas of normal size with smooth wavy contours. Peripancreatic fat was not altered.

The diagnosis: *acute pancreatitis, pancreatic bursitis*. The patient was hospitalized in the surgical department, to prepare for percutaneous drainage of omental bursa under the ultrasonic guidance

The next day, the decreased pain was marked during the morning round. However, mass peristalsis and "splash" sounds were auscultated. The additional history taking, clarified complaints, and clinical picture were not consistent with acute pancreatitis and the presence of a gas-containing retrogastric abscess during such a short period of a disease.

The abdominal MSCT was repeatedly performed with intravenous omnipaque, 350–50.0 ml, primary collimation 64x0.75 mm, reformatted slices of 1–5 mm, and followed with a three-dimensional image analysis in MPR-, MIP- and VRT- reconstructions. The uncontrasted loop of the small intestine was visualized in the left subdiaphragmatic space, pushing the stomach upwards and anteriorly. The loop was dilated up to 15x9 cm. Its mesentery with contrasted vessels was clearly seen. The mesentery was also defined in the foramen of Winslow under hepato-duodenal ligament. The contrasted loop of the small intestine was dilated up to 40 mm, the efferent loop was collapsed (Fig. 1, 2).



Fig. 1.1 — strangulated loop of the small intestine, 2 — stomach



Fig. 2.1 — strangulated loop of the small intestine, 2 — stomach, 3 — mesentery of a strangulated bowel

The patient was taken to the operating room with the diagnosis *strangulated small intestinal hernia through the foramen of Winslow*. The median laparotomy was performed under endotracheal anesthesia. Serous effusion (200 ml) in the abdominal cavity. Dilated jejunum. Collapsed cecum and terminal ileum were located under the liver. The cause of obstruction was the ileum strangulated in the foramen of Winslow. The gastro-colic ligament was cut. The ileal loop dilated up to 9 cm over 15 cm was located in the omental bursa. The bowel was viable (Fig. 3).

The bowel was withdrawn through the foramen of Winslow. For this purpose, the fingers of the left hand dilated the foramen, and the right hand gradually emptied the bowel of liquids and gases, pushing it down to the free abdominal cavity (Fig. 4, 5).

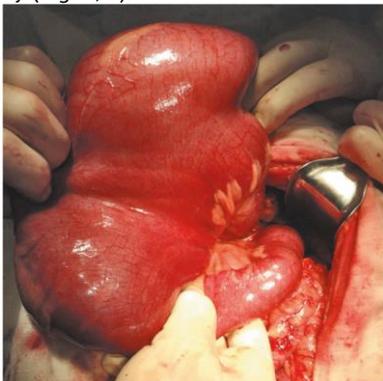


Fig. 3. The loop of ileum extracted from omental bursa



Fig. 4. The efferent ileal loop, introduced into the foramen of Winslow

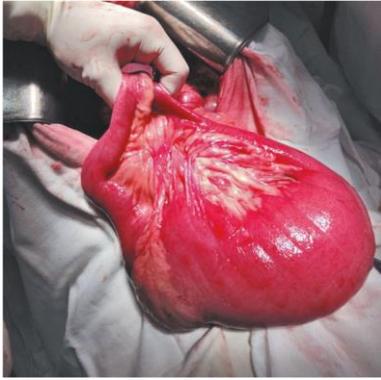


Fig. 5. The ileum removed from the foramen of Winslow

Nasointestinal intubation of the small intestine was performed. The parietal peritoneum was cut above the inferior vena cava (Fig. 7).

The foramen of Winslow was reduced by fixing the upper horizontal and descending duodenal branches to the lateral flap of the separated parietal peritoneum cut above the vein (Fig. 8).

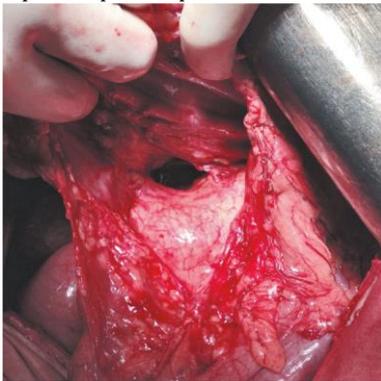


Fig. 6. Hernial ring, the view from the omental bursa

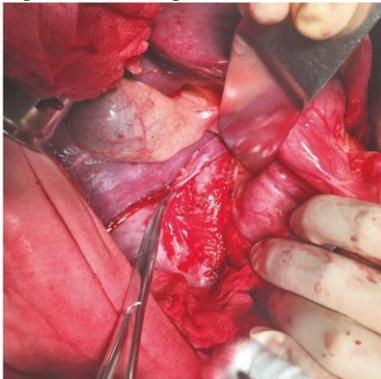


Fig. 7. Cutting the parietal peritoneum above the inferior vena cava

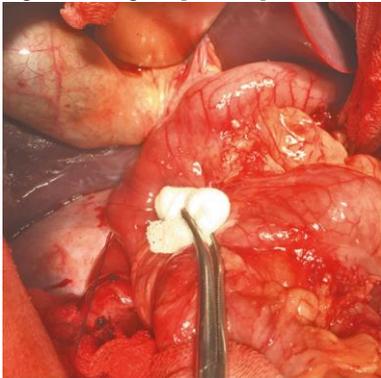


Fig. 8. Fixation of the duodenum to the parietal peritoneum

Small bowel loops were put on the nasointestinal probe. The drainage was installed in the pelvis. The abdominal wall was sutured.

Uneventful postoperative course. The patient defecated 3 days later. On the same day we removed the nasointestinal probe. The patient was discharged on the 7<sup>th</sup> day.

The reported case shows the complexity of preoperative diagnosis of strangulated hernia through the foramen of Winslow. The use of modern methods of radiodiagnosis simplifies the solution of this problem if interpretation of obtained findings is correct.

#### DISCUSSION

The problem lies in the fact that there are no specific recommendations for narrowing the foramen in the literature in order to prevent the recurrence. There is a danger of damage to elements of the hepatoduodenal ligament, the inferior vena cava during manipulations in this area [3]. There is a chance of portal vein thrombosis when suturing the hepatoduodenal ligament to the parietal peritoneum [2, 3]. In some cases, authors left the foramen of Winslow untouched, expecting that the post-surgical intra-abdominal adhesions would prevent movements of organs. [3] The block of the foramen of Winslow with the greater omentum is also possible, with loose fixation [1]. In the literature, we have not found an option performed in the reported case.

#### CONCLUSION

Not only the surgeons involved in urgent abdominal diseases, but also experts of radiodiagnosis should be aware of this rare form of internal intestinal strangulation. Complaints and a clinical picture of the disease should be necessarily compared with findings identified by modern diagnostic imaging devices.

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