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Gastric fistula and its treatment after sleeve gastrectomy in patients after kidney transplantation – a case report

Laparoskopowa rękawowa resekcja żołądka u pacjentów po przeszczepie nerki – opis przypadku

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Słowa kluczowe

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Conflict of interest

Konflikt interesów

None

Brak konfliktu interesów

Summary

Kidney transplantation in obese patients with the necessity of continuous use of immunosuppressive drugs greatly increases the co-occurrence of metabolic syndrome, which in turn has a significant impact on the risk of transplant rejection.

A 32-year-old patient with the BMI of 52 kg/m² and metabolic syndrome had undergone kidney transplantation 7 years earlier. Owing to the rapidly increasing risk of graft rejection, the patient was qualified for laparoscopic sleeve gastrectomy. Six days after the surgery, we diagnosed a staple-line leak. The fistula was sealed by endoscopic clips, and further, because of leak recurrence after 12 days, a gastroesophageal prosthesis was applied. After 3 weeks, we observed the prosthesis shift to the duodenum and an incomplete intestinal obstruction, which resulted in the prosthesis removal. During treatment, the patient required several dialyses due to the risk of an acute damage of the transplanted kidney. Complete fistula healing was achieved after 1.5 months of treatment.

Written consent from the subject was obtained.

Through an effective and permanent treatment of obesity and metabolic syndrome, bariatric surgery may improve the function of the transplanted kidney, contributing to a reduction of immunosuppressant doses. However, it should be taken into account that a much higher risk of peri- and postoperative complications may occur in this group of patients.

Streszczenie

Przebyta transplantacja nerek u otyłych chorych w związku z koniecznością stałego stosowania leków immunosupresyjnych znacznie zwiększa współwystępowanie zespołu metabolicznego, co z kolei istotnie wpływa na ryzyko odrzucenia przeszczepu. Czy chirurgia bariatryczna tej grupie pacjentów może pomóc?

W swojej pracy pragniemy przedstawić opis przypadku 32-letniej pacjentki po 7 latach od przeszczepu nerki z BMI 52 kg/m² i zespołem metabolicznym. Z powodu gwałtownie narastającego ryzyka odrzucenia przeszczepu chorą zakwalifikowano do wykonania laparoskopowej rękawowej resekcji żołądka. W 6. dobie rozpoznano nieszczelność w linii staplerowania. W leczeniu przetoki zastosowano klipsy endoskopowe, a następnie w związku z brakiem szczelności w 12. dobie od zabiegu protezę przelykowo-żołądkową. Po 3 tygodniach przesunięcie protezy do dwunastnicy i niepełna niedrożność przewodu pokarmowego skutkowały jej wyjęciem. W trakcie leczenia chora wymagała kilkakrotnie dializoterapii w związku z ryzykiem ostrego uszkodzenia nerki przeszczepionej. Wygojenie przetoki uzyskaliśmy po 1,5 miesiąca od zabiegu.

Uzyskano pisemną zgodę pacjenta.

Chirurgia bariatryczna poprzez skuteczne i trwałe leczenie otyłości i zespołu metabolicznego może poprawić funkcje przeszczepionej nerki, przyczyniając się do zmniejszenia dawek leków immunosupresyjnych. Należy jednak brać pod uwagę znacznie wyższe ryzyko powikłań około- i pooperacyjnych w tej grupie chorych.

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INTRODUCTION

Surgical treatment of obesity effectively reduces body mass, restores balance between energy demand and supply, as well as deals with obesity complications (1). Every year, approximately 350 000 bariatric procedures are performed worldwide, including 35% of laparoscopic sleeve gastrectomy (2). Laparoscopic sleeve gastrectomy consists in a minimally invasive resection of 4/5 of the stomach along the lesser curvature. The procedure significantly reduces the stomach volume, which leads to limitation of food intake and faster satiety and influences neurohormonal activity. Observation indicates that an obtainable and satisfying effect of the procedure is 60% of EWL (Excess Weight Loss) during the first 2 years (3, 4).

Bariatric surgery conducted by an experienced team is one of the safest surgical procedures. Mortality connected with bariatric procedures mentioned in literature oscillates around 0.01-1% (5, 6). However, the frequency of complications reaches 10% and differs depending on the center and operation technique (5, 7, 8). The most frequent perioperative complications of sleeve gastrectomy are leakage and bleeding from the line of staples. The frequency of leakages occurrence equals 0-7.8%. Leakages observed within 2 days after the surgery depend mostly on the type of procedure, as well as staplers used. Ischemic leakages occur within 5-7 days after the surgery (9, 10). It has been proved that individual factors such as male gender, age over 50 years, heart diseases, type 2 diabetes, steroid drugs intake and smoking increase the risk of fistula occurrence (11, 12). Leakages are most frequently (90%) located below the gastroesophageal junction of the Hiss angle area (13-17).

A specific group of obese patients are those after organ transplantation, including kidney. Those patients are required to apply immunosuppressive drugs and steroids, which intensify symptoms of the coexisting metabolic syndrome. Hypertension, diabetes, hyperlipidemia, and atherosclerosis significantly influence the risk of transplant rejection. Is bariatric surgery helpful for those patients?

CASE REPORT

In this article, a case of a 32-year-old patient with congenital adrenal hyperplasia, 7 years after kidney transplantation is presented. The patient was admitted with the BMI (Body Mass Index) of 52 kg/m², developed metabolic syndrome, and steatosis. Because of an increasing risk of transplant rejection, despite the administration of bigger doses of drugs, the patient was qualified for laparoscopic sleeve gastrectomy. The procedure was performed with the use of 4 ports (trocar); stomach resection started 6 cm from the pylorus, with calibration in tube 36F. Staples were used in the following order: 2 × yellow (1.8 mm) and 3 × blue (1.5 mm).

The surgery and the period before the discharge were uncomplicated.

Six days after the surgery, the patient visited the outpatient clinic with a leakage of food content from the wound after the peritoneal drain. After another introduction of the drain, a tightness test was performed by oral administration of methylene blue, which confirmed the leakage. Furthermore, radiography with oral contrast revealed a fistula in the area of Hiss angle.

The performed gastroscopy proved a loss in the gastric wall, in the line of a stapler located in the area of gastroesophageal junction (fig. 1). In the first stage

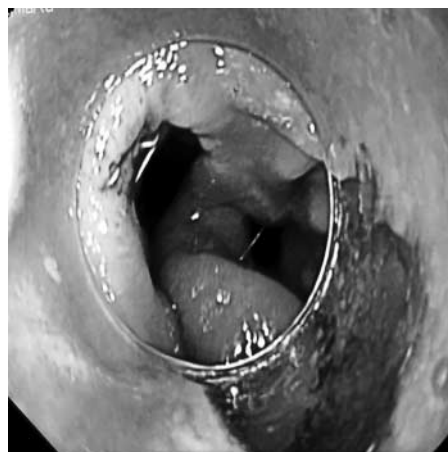


Fig. 1. Fistula on stapler line

of the leakage treatment, clips gathered with an endoscopic loop were used; these were placed in the circumference of the fistula, bringing the edges closer (fig. 2 a, b). Also, a Flocare tube was introduced in order

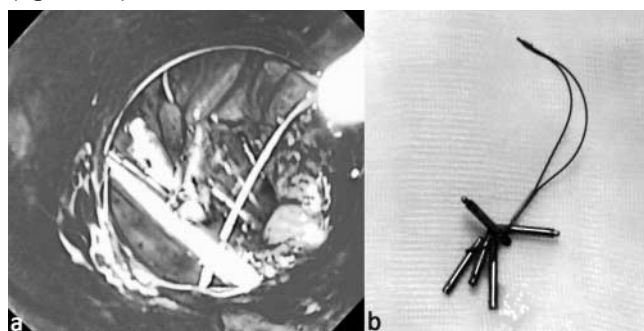


Fig. 2 a, b. Endoscopic clips in a loop bringing the edges of the fistula closer (a) and after remove (b)

to feed the patient enterally. The patient's general status improved, and the content leakage from the drain decreased. Owing to the lack of full tightness, 12 days after the surgery, a self-expandable esophageal-gastric coated Niti-S Mega prosthesis was introduced endoscopically. Full tightness confirmed radiologically was obtained.

Three weeks after an endoscopic introduction of the prosthesis, the patient was admitted because of stomach pain, nausea, emesis, difficulty in swallowing, as well as subileus of the upper part of the gastrointestinal tract. Contrast radiography revealed prosthesis displacement to the duodenum causing a partial occlusion of the gastrointestinal tract (fig. 3). An endoscopic attempt of prosthesis relocation was



Fig. 3. Migration of the gastroesophageal stent – duodenum occlusion

conducted, which led to its removal after the recommended 6 weeks (18). During the treatment, owing to electrolyte disorders and the risk of an acute damage of the transplanted kidney, the patient required several dialyses. Antibiotic therapy was also applied, along with parenteral feeding. The final healing of the fistula was obtained 6 weeks after the surgery. The patient, 12 months after sleeve gastrectomy, reduced body weight to the BMI 31.2 kg/m², and she is after abdominoplastic surgery.

The study was approved by the local Ethics Review Committee (R-I-002/438/2014).

Written consent from the subject was obtained.

DISCUSSION

Bariatric surgery, according to the United States Renal Data System, is a safe and efficient method of treating obesity and its complications in patients after kidney transplantation and candidates to such a transplantation. In the period of 30 days after the surgery, death occurred in 3.5% of patients from both groups, and further 3.5% died within 90 days after the surgery (19).

Laparoscopic sleeve gastrectomy, through an efficient and permanent reduction of body mass and metabolic syndrome improvement, may also enhance the function of the transplanted kidney. The better carbohydrate balance and hypertension normalization directly influence kidney function improvement (20). In the case of sleeve gastrectomy, both in this study and worldwide, deterioration of absorption of immunosuppressive drugs administered orally such as tacrolimus and cyclosporine doesn't change (20, 21).

In regard to the unbeneficial activity of immunosuppressive drugs and steroids, a higher risk of peri- and postoperative complications in this group of patients has to be considered. Patients undergoing such treatment, especially with complications such as a fistula, are at a significantly higher risk of sepsis (21).

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