

Gastropericardial fistula: a case report

Przetoka żołądkowo-osierdziowa – opis przypadku

Janusz Wójcik¹, Tomasz Grodzki¹, Bartosz Kubisa¹, Jarosław Pieróg¹, Anna Kozak¹, Norbert Wójcik²

¹Oddział Kliniczny Chirurgii Klatki Piersiowej Pomorskiego Uniwersytetu Medycznego w Szczecinie

²Szpital Specjalistyczny Szczecin-Zdunowo



Kardiochirurgia i Torakochirurgia Polska 2011; 4: 497–499

Abstract

We present a case of a 60-year-old patient with sepsis symptoms and intrathoracic pain lasting 7 hours. Chest X-ray, water soluble-contrast study, computed tomography and gastroscopy revealed infiltration of the fundus of the stomach with radiological features of the gastropericardial fistula. It was decided to perform emergency surgery. Intraoperatively extensive infiltration of the cardia, fundus of the stomach, surroundings of the celiac trunk, splenic hilum, perihial part of the diaphragm and pericardium with fistula was found. Because of no possibility to perform intraoperative frozen section and due to technical circumstances, the Ivor-Lewis cardia resection according to oncological protocol with splenectomy, diaphragmatic and pericardial infiltration resection with lymphadenectomy were performed. Intraoperatively pericardial empyema with *Escherichia coli* and *Candida albicans* as a type of culture was confirmed. Reconstruction and fenestration of the pericardium was preceded by intensive lavage with Betadine solution. The postoperative course was uncomplicated and the patient was discharged home taking chemoprophylaxis and vaccination against capsular bacteria.

Key words: peptic ulcer disease, pericardial fistula.

Introduction

Gastric and duodenal perforations are the most serious complications of ulcers and neoplasms of these organs. The majority of perforations penetrate to the peritoneal cavity. Sometimes the stomach cardia and fundus ulceration do not adhere to the peritoneum and can penetrate proximally to the pericardium creating gastro-pericardial fistula (GPF) [1, 2, 4-6]. We have not found such a case in the Polish medical literature, so we considered it desirable to describe the case.

Case report

A 60-year-old patient was admitted to our hospital, complaining of chest pain lasting 7 hours, clinical and labo-

Streszczenie

W pracy przedstawiono przypadek 60-letniego chorego z objawami sepsy i bólami w klatce piersiowej trwającymi od 7 godz. W gastrokopii, tomografii komputerowej i badaniu kontrastowym górnego odcinka przewodu pokarmowego ujawniono naciek okolicy dna żołądka z radiologicznymi cechami przetoki żołądkowo-osierdziowej. Chorego zakwalifikowano do leczenia operacyjnego w trybie doraźnym. Śródoperacyjnie uwidoczniło się rozległy naciek obejmujący wpust, dno żołądka, okolicę pnia trzewnego, wnęki śledziony i przyrozworową część przepony oraz worka osierdziowego. Brak możliwości badania doraźnego i warunki techniczne wymusiły decyzję o resekcji wpustu metodą Ivor-Lewisa ze splenektomią, resekcją nacieku przepony i worka osierdziowego. Śródoperacyjnie potwierdzono cechy ropniaka osierdzia, a z posiewu wyhodowano *Escherichia coli* i *Candida albicans*. Drenaż i rekonstrukcję worka osierdziowego poprzedzono intensywnym płukaniem roztworem betadyny. Przebieg pooperacyjny był niepowikłany. U chorego wdrożono ambulatoryjną chemioprophylaktykę i szczepienia ochronne przeciwko bakteriom otoczkowym.

Słowa kluczowe: choroba wrzodowa żołądka, przetoka osierdziowa.

ratory signs of sepsis. He denied vomiting or gastric ulcers. The chest X-ray revealed pneumopericardium, water soluble-contrast study of the esophagus showed gastric cardia and fundus infiltration. The chest CT detected air and contrast in the pericardium. The gastroscopy confirmed infiltration of the gastric cardia and fundus with centrally located fistula (Fig. 1-4). Emergency surgery was conducted. Intraoperatively the vast infiltration of cardia, fundus, celiac trunk, spleen hilum, diaphragmatic hiatus and pericardium were observed. Under these circumstances and due to no possibility of intraoperative pathological examination, we decided to perform splenectomy and Ivor-Lewis cardia resection completed by diaphragmatic and pericardial infil-

Address for correspondence: dr n. med. Janusz Wójcik, Oddział Kliniczny Chirurgii Klatki Piersiowej PUM, Szpital Specjalistyczny Szczecin-Zdunowo, Sokotowskiego 9/1, 70-891 Szczecin, Email: janusz.zenon.wojcik@wp.pl

tration resection. The additional lymphadenectomy of the celiac trunk, gastric curvatures and posterior mediastinum



Fig. 1. Chest X-ray with air visible in the pericardial sac



Fig. 2. CT view of pneumopericardium with water soluble-contrast in the pericardial sac



Fig. 3. CT view of pneumopericardium with water soluble-contrast closely to the aorta in the pericardial sac

was performed. We established the diagnosis of pericardial empyema and the bacterial smear revealed *Escherichia Coli* and *Candida Albicans* cultures demanding Fluconazole and Ceftazidime therapy. After intensive Betadine (Iodine solution) lavage of the pericardium we reconstructed the pericardial sac with remaining pericardial fenestration to the right pleural cavity. The patient was discharged home taking chemoprophylaxis and vaccination against capsular bacteria.

Discussion

This was the first such a case operated at our institution. The intense symptoms of chest pain, fever and laboratory inflammation markers were fully reflected in the gastroscopic and radiologic findings (chest X-ray, contrast study, computed tomography). The fistula between gastric fundus and pericardium had a broad lumen and prevented heart tamponade, which occurs in 37% of described cases [2]. Intraoperative “adhesion” penetration criteria of the infiltration process including surrounding anatomical structures were met and the “technical” splenectomy enabled conducting successful surgery as previously described [1, 6]. The range of the operation complied with potential oncologic margins and the gastro-intestinal tract reconstruction was performed within the parts free of the infiltration. The bacteriologic findings were similar to the other authors’ reports and the postoperative course was uneventful [2]. The GPF case ought to undergo surgery because of high mortality rate if treated conservatively, though single patients were successfully cured in such way [1, 3, 5]. The chest pain coexisting with pneumopericardium are the first and major signs of the fistula. The other symptoms are not so frequent and they consist of arrhythmias, gastric bleeding, peritoneal manifestation with radiation to the supraclavicular region or tamponade [1, 2, 4]. The gastroscopy should be conducted with the highest care due to possible exacerbation of tamponade symptoms caused by the va-

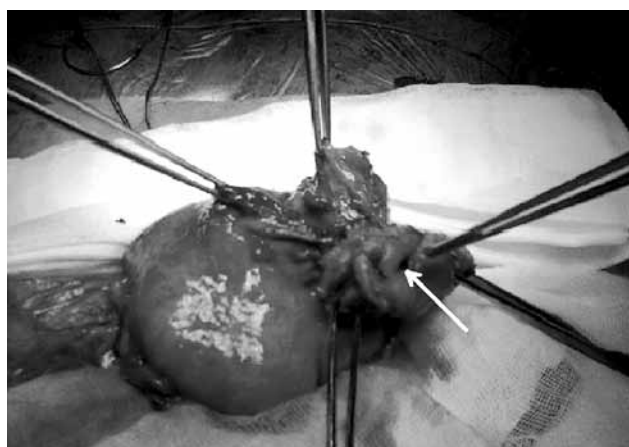


Fig. 4. Intraoperative view. The fundus infiltration separated with part of the diaphragm and pericardium is visible. The fistula orifice is marked by an arrow. Pathological assessment (26940): intensive necrosis of the tissue surrounding the fistula

live mechanism in the fistula orifice [1, 2]. Some GPF can occur due to gastric dislocation following esophagectomy, fundoplication or in the course of subphrenic abscess and untreated esophageal hiatal hernia. The pericardial empyema symptoms are nevertheless similar in these patients [2, 5, 7, 8]. The differential diagnosis should include esophageal-pericardial fistula and Boerhaave syndrome [7, 9, 10]. The extreme and always lethal GPF form is gastro-cardiac fistula, which fortunately is rare [6].

References

1. Grandhi TM, Rawlings D, Morran CG. Gastropericardial fistula: a case report and review of literature. *Emerg Med J* 2004; 21: 644-645.
2. Tang CP, Wang YW, Shiau YT, Lee RC, Lan KH, Chao Y. Gastropericardial fistula and *Candida albicans* pericarditis: a rare complication of gastric adenocarcinoma treated with radiation and chemotherapy. *J Chin Med Assoc* 2009; 72: 374-378.
3. Murthy S, Looney J, Jaklitsch MT. Gastropericardial fistula after laparoscopic surgery for reflux disease. *N Engl J Med* 2002; 346: 328-332.
4. Luthi F, Groebli Y, Newton A, Kaeser P. Cardiac and pericardial fistulae associated with esophageal or gastric neoplasms: a literature review. *Int Surg* 2003; 88: 188-193.
5. Chapman PR, Boals JR. Pneumopericardium caused by giant gastric ulcer. *AJR Am J Roentgenol* 1998; 171: 1669-1670.
6. Porteous C, Williams D, Foulis A, Sugden BA. Penetration of the left ventricular myocardium by benign peptic ulceration: two cases and a review of the published work. *J Clin Pathol* 1984; 37: 1239-1244.
7. Włodarczyk J, Olechnowicz H, Kocoń P. Esophago-pericardial fistula during the course of primary esophageal carcinoma. *Ann Thorac Surg* 2008; 86: 1967-1969.
8. Kato T, Mori T, Niibori K. A case of gastropericardial fistula of a gastric tube after esophagectomy: a case report and review. *World J Emerg Surg* 2010; 5: 20.
9. Rokicki M, Rokicki W. Spontaneous esophageal perforation-Boerhaave's syndrome. *Pol Merk Lek* 1996; 1: 348-350.
10. Wójcik N, Wójcik J, Grodzki T, Kubisa B, Pieróg J. Ostra martwica przełyku – opis przypadku. *Kardiochir Torakochir Pol* 2010; 7: 44-46.