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A rare upper gastrointestinal system bleeding case: Aortoesophageal fistula

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ABSTRACT

Aortoesophageal fistula is a rare condition with fatal prognosis. It is one of the life-threatining causes of massive upper gastrointestinal bleeding. With this case report, we will discuss an instance of a fatal aortoesophageal fistula in a patient to whom was implanted a stent due to an aorta aneurysm. In endoscopic examination blood clot on the mouth of the fistula was visualized.

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1. Introduction

Gastrointestinal system (GIS) bleedings related to aorto-esophageal fistulas (AEF) are seen quite rarely and their mortality rate is reported as high. AEF was first described in a soldier who swallowed a beef with bone and died in 1818 (Dubrueil, 1818). Thoracic aort aneurysm is the most common cause of the AEF. Other important factors causing AEFs are foreign body aspiration and advanced esophageal cancer (Ghosh et al., 2011). Sepsis, hemorrhage, and infection that spreads to the surrounding are the most important problems encountered in the treatment of these patients. Chest radiography, computerized tomography (CT), CT aortography, and endoscopy are the most important diagnostic tools in the AEF (Amin et al., 1998; Flores et al., 2004).

Endoscopy in the diagnosis of the AEF has high sensitivity and specificity. Open surgical and endovascular treatments are the most preferred choices among the limited treatment options (Flores et al., 2004). With this presentation we examine a case of upper GIS bleeding related to AEF.

2. Case

A 69-year-old man patient who had black coloured stool for the last two days admits to the emergency department with the complaint of bloody vomiting. He had two stent placements due to aortic aneurysm and he was using aspirin. During the physical examination he was conscious and cooperative. Blood pressure: 110/80 mm-Hg, pulse: 118/min. On the left lung lower zones respiratory sound was not heard. Laboratory tests revealed an urea of 80 mg/dL, creatinine of 1.3 mg/dL, albumine of 2.1g/dL, white blood cell of 13000/µL, haemoglobin (Hgb) of 6.29 g/dL, platelets of 179000/µL, sedimentation rate of 30 mm/h, prothrombin time of 15.5 seconds and an INR of 1.23. Hepatitis markers were negative.

The patient was hospitalized with a preliminary diagnosis of an aspirin related GIS bleeding. Medical treatment has been started. With erythrocyte transfusion, Hb was elevated over 10 g/dL. On the posterio-anterior (PA) chest X-ray; there were blunt image of left pleura, thoracic aorta with aneurysmatic condition and enlarged mediastinum (Fig. 1). The general state of the patient was rapidly recovered with

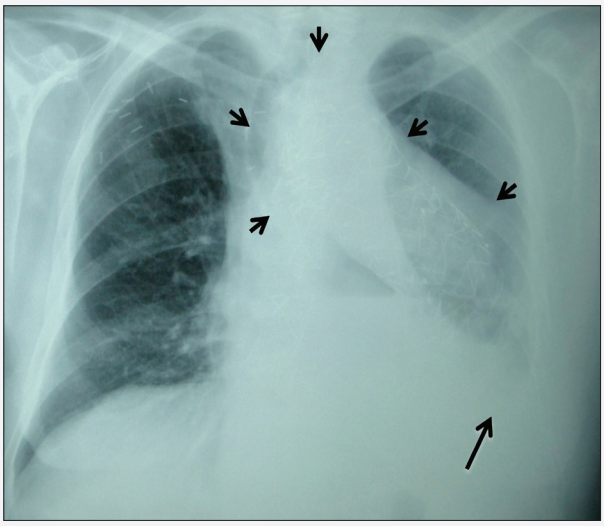

Fig. 1. The posterior-anterior (PA) chest X-ray showing the blunt image of the left pleura (large black arrow) and aneurysmatic thoracic aorta with stent that enlarges the mediastinum, displaces the trachea to the right and superimposed on the left lung (short black arrows).

the treatment of the huge clot (Fig. 2) that fills the half of the esophagus lumen. An oval defect giving oscillation on the middle esophagus, 30 cm from the incisor teeth was seen during the endoscopy performed two days after his arrival. Because AEF is suspected no further actions are taken and the procedure was terminated. The department of cardiovascular surgery was urgently consulted. During the thoracic computerized tomography (Fig. 3 a, b, c) AEF was confirmed.

There were two options to close the aortoesophageal fistula: Surgery and endovascular stent placement. Because of high mortality risk the surgery was not performed. Endovascular stent placement was also not applicable because diameter of the available stent was smaller than the stent already placed. Following a sudden nausea vomiting a massive bleeding began. The patient was developed respiratory and cardiac arrest. He was intubated. An attempt to adjust his hemodynamics was made but the patient could not be recovered and died on the third day of his arrival.

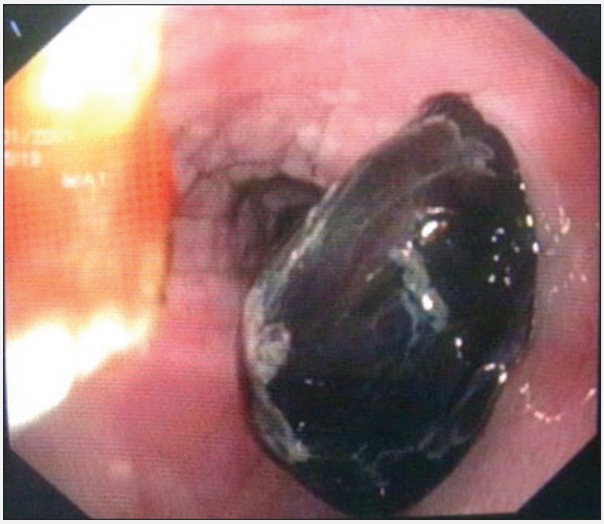

Fig. 2. Clot in the aortoesophageal fistula region owerflowing into the esophagus lumen.

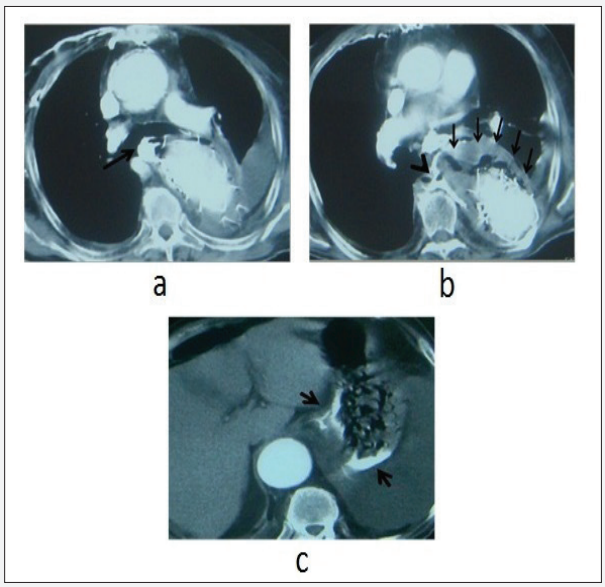

Fig. 3. CT images taken on the arterial phase after giving only intravenous contrast agent; a) Contrast agent nearly filling the whole esophagus location at the level of trachea bifurcation (black arrow). b) Collection of air and fluid (sequential black arrows) in the periaortic area together with the extravasated aortic contrast agent (black arrow head). c) Gastric mucosa coated with the contrast agent (small black arrows).

3. Discussion

There are two types of AEF. In the primary AEF thoracic aortic aneurysm, swallowing foreign objects, esophageal malignancy and traumatic aorta injuries are the main reasons; its incidence is 0.04-0.007% (Voorhoeve et al., 1996; Saers and Scheltinga, 2005). In the secondary AEF stents used during the repair of aortic aneurysms, aortic surgery and esophageal surgery are the main reasons (Grundy and Glees, 1997; Kieffer et al., 2003; Okita et al., 2005). Its incidence is 0.7-1.7% (Hollander and Quick, 1991; Okita et al., 2005). Endoscopy, CTscan and aortography are used to diagnosis. Classical symptoms are dysphagia, mid-thoracic pain, sentinel arterial hemorrhage and bleedings then a asymptomatic period (Chiari's triad). Also in our case a slow course without pain, a short asymptomatic period and later an abundant bleeding were seen. The appearance of the clot that gives oscillation and overflowing into the esophagus lumen when entering first with the endoscope was visually stunning. It is reported that in these cases endovascular repair is the best choice, the morbidity and mortality rate of the surgical approach is recommended high (Hance et al., 2003; Flores et al., 2004). The proposed treatment approach is placement of an endovascular stent to gain time for surgical treatment of the esophagus. Otherwise the risk of mediastinitis and stent infection is increasing (Metz et al., 2006).

In these cases, it is important that the clot should not be removed. In summary, in AEF cases early diagnosis, the placement of endovascular stents if applicable and surgical approach are vitally important. Physicians should consider aortoesophageal fistula in cases of massive gastrointestinal bleedings.

REFERENCES

Amin, S., Luketich, J., Wald, A., 1998. Aortoesophageal fistula: Case report and review of the literature. Dig. Dis. Sci. 43, 1665-1671. doi: 10.1023/A:1018850728928.

Dubrueil, O., 1818. Observation sur la perforation de l'esophague et de l'aorte thoracique par une portion d'os oval: Avec des réflexions. J. Univ. Sci. Med. 9, 357-363.

Flores, J., Shiiya, N., Kunihara, T., Yoshimoto, K., Yasuda, K., 2004. Aortoesophageal fistula: Alternatives of treatment. Case report and literature review. Ann. Thorac. Cardiovasc. Surg. 10, 241-246.

Ghosh, S,K., Rahman, F,Z., Bown, S., Harris, P., Fong, K., Langmead, L., 2011. Survival following treatment of aortoesophageal fistula with dual esophageal and aortic intervention. Case Rep. Gastroenterol. 14, 40-44. doi: 10.1159/000323700.

Grundy, A., Glees, J.P., 1997. Aorto-oesophageal fistula: A complication of oesophageal stenting. Br. J. Radiol. 70, 846-849. doi:http://dx.doi.org/10.1259/bjr.70.836.9486053.

Hance, K.A., Hsu, J., Eskew, T., Hermreck, A.S., 2003. Secondary aortoesophageal fistula after endoluminal exclusion because of thoracic aortic transaction. J. Vasc. Surg. 37, 886-888. doi:10.1067/mva. 2003.159.

Hollander, J.E., Quick, G., 1991. Aortoesophageal fistula: A comprehensive review of the literature. Am. J. Med. 91, 279-287. http://dx.doi.org/10.1016/0002-9343(91)90129-L.

Kieffer, E., Chiche, L, Gomes, D., 2003. Aortoesophageal fistula: Value of in situ aortic allograft replacement. Ann. Surg. 238, 283-290. doi: 10.1097/01.sla.0000080828.37493.e0.

Metz, R., Kimmings, A.N., Verhagen, H.J., Rinkes, I,H., van Hillegersberg, R., 2006. Aortoesophageal fistula successfully treated by endovascular stent-graft. Ann. Thorac. Surg. 82, 1117-1119. doi:10.1016/j.athoracsur. 2006.01.091.

Okita, R., Mukaida, H., Takiyama, W., Oheda, M., Uchida, N., Ishihara, H., 2005. Successful surgical treatment of aortoesophageal fistula after esophagectomy. Ann. Thorac. Surg. 79, 1059-1061.

Saers, S.J., Scheltinga, M.R., 2005. Primary aortoenteric fistula. Br. J. Surg. 92, 143-152.

Voorhoeve, R., Moll, F.L., de Letter, J.A., Bast, T.J, Wester, J.P., Slee, P.H., 1996. Primary aortoenteric fistula: Report of eight new cases and review of the literature. Ann. Vasc. Surg.10, 40-48.