



Spontaneous Massive Hemothorax Secondary to Ectopic Diaphragmatic Varicose Veins

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► ABSTRACT

The article reports a clinical case of a 39-year-old male patient who was admitted in the emergency room in shock. The clinical exams and additional tests identified a right massive hemothorax, without apparent etiological factors. He was submitted to an emergency right thoracotomy. A bulky varicose formation in the diaphragmatic surface, with evident laceration and haemorrhage was identified. The article describes this case due to its rarity. The varicose formation was simply ligated and the evolution, as well as the outcome of this clinical case was uneventful.

Keywords: Massive hemothorax; Ectopic varicose veins; Shock.

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Introduction

Aberrant or ectopic thoracic varicose veins are defined as distended collateral veins, portal-systemic in different location of gastro-esophageal junction and are usually associated with portal hypertension. They are reported in various locations, such as the duodenum, colon, gallbladder, uterus, and abdominal stomas and, less frequently in the diaphragm, in the cardiophrenic angle [1].

The importance of this case lies not only in its rareness but also in its risk, as only 5% of episodes of bleeding by varicose visceral veins occur and it is very difficult to approach. Besides there is high mortality associated with acute bleeding episodes (40%) [2].

Unlike the other case described in the literature, that was associated with portal hypertension (PH) secondary to hepatocellular carcinoma or liver cirrhosis, we describe a spontaneous rupture of

ectopic veins located in the right hemidiaphragm, in a non cirrhotic patient without stigmata of PH.

Case Report

A 39-year-old man without previous known pathologies, no regular medications, and unaware of allergies presented to our emergency department with subacute onset dyspnea and shock. After physical exertion, loading a van, he suffered general deterioration, with progressive loss of consciousness. He was then transported to our emergency room by the pre-hospital service. The patient was in shock, pale, hypotensive, confused and short of breath. There were absent air sounds in the right hemithorax. The abdomen was normal on palpation and with no apparent collateral circulation.

During the initial assessment he developed a convulsion and cardiac arrest, which reverted after resuscitation manoeuvres that included aggressive

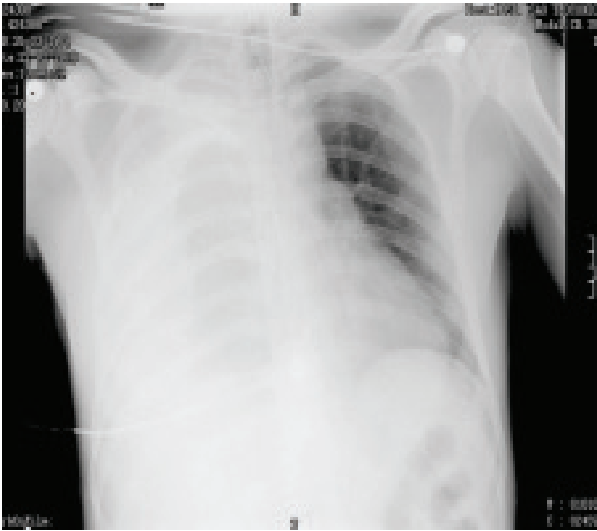


Fig. 1. Posteroanterior chest radiography of 39-year-old man demonstrating right massive hemothorax.

fluid therapy and blood transfusion. The FAST exam was normal and the X-ray only suggested the presence of extensive pleural effusion, compatible with hemothorax (Figure 1).

A chest tube was placed with immediate exit of 2000cc of blood. The resuscitation measures initiated led to an improvement of hemodynamic status and to almost normal values. Afterwards, a chest contrast CT was requested, showing a hemothorax, with signs of active bleeding, without source identification (Figure 2). The patient was then submitted to a right thoracotomy by the 6th intercostal space and to evacuation of blood and clots of the pleural cavity. However, no visible lung injury was identified. The right hemidiaphragm was fully exposed, and a huge varicose formation, with laceration and bleeding was noticed. The bleeding control was achieved with haemostat and ligation with nonabsorbable suture (Figure 3). After evacuation and washing of the pleural cavity with saline, additional sutures with 3/0 silk were performed, with collapse of the varicose veins. The



Fig. 3. Diaphragmatic large varices observed through the right thoracotomy approach.

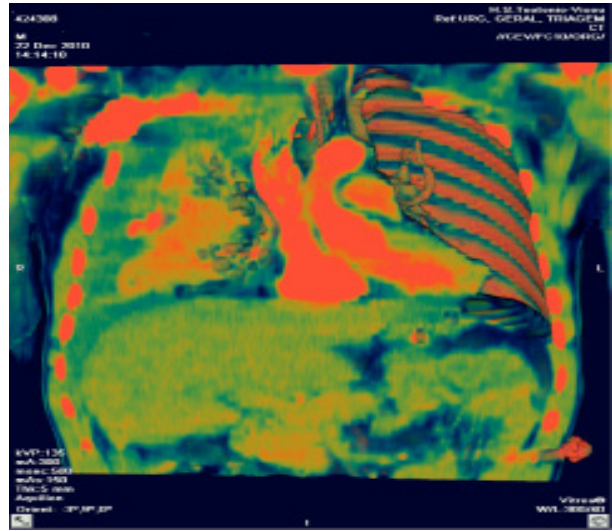


Fig. 2. 3D computed tomography (CT) reconstruction of the chest revealing active bleeding in the right hemithorax.

thoracotomy was closed as usual over a chest tube (Figure 4). The resuscitation continued during the operation, with aggressive fluid therapy, transfusion of 4U PRBC, 4U FFP and platelets.

The patient was admitted to the intensive care unit for artificial ventilation, and final hemodynamic stabilization. Six days later, the patient was transferred to the ward with a residual right pleural effusion (Figure 5). The recovery was uneventful and the patient was submitted to an angio-MRI on the 16th day. Vascular malformations were not identified, in particular the previous diaphragmatic varicose veins (Figure 1). The patient was discharged on the 17th day after his admission. Three months later he remains well with an almost normal chest x-ray (Figure 6).

Discussion

Aberrant or ectopic varicose veins are a rare entity that can appear in several locations from the duodenum to the rectum, gallbladder, uterus, vagina, bladder, abdominal stomas and digestive anastomosis [1].

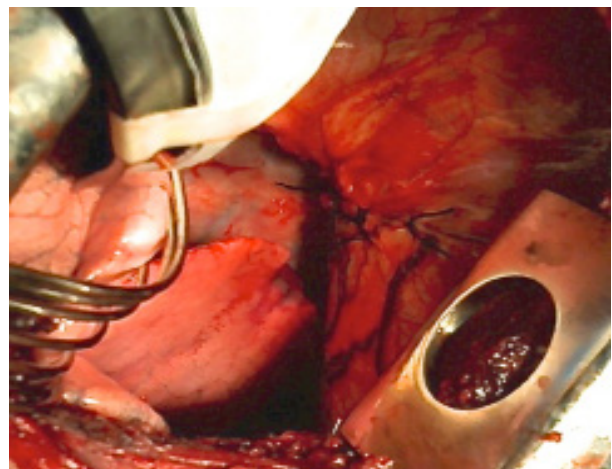


Fig. 4. Suture ligation of the diaphragmatic varices through right thoracotomy.



Fig. 5. Posteroanterior chest radiography of the patient 1 day after operation demonstrating residual pleural effusion.



Fig. 6. Posteroanterior chest radiography of the patient 3 months after operation demonstrating complete resolution of the effusion.

They occur as a secondary manifestation of idiopathic portal hypertension, surgical procedures involving organs or abdominal vessels, vascular anomalies, congenital or hepatocellular carcinoma [3].

Bleeding is rare, but when it starts it is difficult to control and it is sometimes fatal. In this context, the episodes of bleeding are more frequent at the level of stomata (26%) and the duodenum (17%) [4]. Because of the infrequency which bleeding ectopic varices present, there have been no randomized trials on the management of this condition and it is unlikely that there ever will be such trials [2]. Aberrant varicose veins in the diaphragm are even rarer, being mostly associated with portal hypertension.

In the case here described varicose veins probably disrupted by increased intrathoracic pressure, due to excessive physical stress against a closed glottis and no association to portal hypertension. These varicose veins probably disrupted by increased intrathoracic pressure, due to excessive physical stress against a closed glottis and no association to portal hypertension. In general, the therapeutic approach depends mainly on the location of varicose veins, on the underlying cause, and on the

available resources [5].

Octeotide, beta-blockers or terlipressine, have been described as being useful in reducing splanchnic blood flow [2]. Endoscopic alternatives, selective embolization or surgical resection may be indicated when varicose veins are well circumscribed. In selected cases, a transjugular portosystemic shunt (TIPS) [6] can be considered when in association with portal hypertension. The absence of signs of portal hypertension in this patient and the mandatory emergent surgery, forced the adoption of a damage control procedure. The resolution of patient's condition and ectopic varices did not justify subsequent attitudes. In an emergency setting, surgical ligation of varicose veins may be the only recommended solution.

Although rare, ectopic varicose veins on the diaphragmatic surface should be considered in the differential diagnosis of hemothorax. In hospitals that do not have all the specialties available, the versatility of the general surgeon is paramount for the patients who cannot wait for a safe transfer.

Conflict of Interest: None declared.

References

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