Introduction

Bronchial artery aneurysm is a very rare condition. The aneurysms are usually asymptomatic until the point of rupture. The most frequent signs of rupture are hemoptysis or hematemesis and dysphagia. We present a case of a patient whose first sign of bronchial artery aneurysm rupture was epigastric pain.

Case Report

A 50-year-old male came to the acute admission unit for sharp stabbing epigastric pain which had lasted for four days. The patient reported severe sharp pain reaching behind his sternum. He had been treated for arterial hypertension for about one year with the combination of Bisoprolol (Bisoprolol, Merckle GmbH, Germany) and Rhefluin (Amilorid and Hydrochlorothiazid, Zentiva a.s., Czech Republic) and he had abandoned the treatment about three months before admission.

The patient also reported that he had eaten a meal with a plastic fork about ten days before the admission and one fork tooth had been missing after the meal. Cardiac etiology, foreign body (tooth of the plastic fork) in the gastrointestinal tract, duodenal ulcer perforation, thoracic aorta dissection were considered as the cause of the pain.

Gastroscopy excluded foreign body in the gastrointestinal tract and duodenal ulcer. CT scan revealed the diagnosis: a hypertrophic bronchial artery with aneurysm, with large mediastinal hematoma and hematoma in the right pleural cavity (Fig. 1).

The final diagnosis was an aneurysm of the right bronchial artery with rupture and bleeding. Angiography and embolization attempt was considered as the treatment of choice.

During the intervention we inserted a RC 1 catheter into the hypertrophic winding right bronchial artery, where the aneurysm was, with a diameter of about 10 mm. The se-
selective embolization of the aneurysm was not successful due
to the winding shape of the afferent artery, and therefore we
performed proximal embolization of the bronchial artery
only a short distance behind the aorta. We used six 3 mm
Vortex coils (Boston Scientific, USA). The procedure took
160 minutes and was without complications (Figs. 2, 3). The
patient was discharged on the eighth day after the proce-
dure. At the time of this report, 24 months after the procedu-
re, the patient has no further complaint regarding the aneurysm.

Discussion

Seventy-two cases of bronchial artery aneurysm ruptu-
re have been published in the world literature so far (1).
A brief review of management of bronchial artery aneu-
rysm was recently published by Yajima et al. (8). The cause
of the aneurysm could be bronchiectasis, recurrent broncho-
pulmonary inflammation, mycotic origin, trauma (9) or
systemic vascular disease, e.g. Rendu-Osler-Weber syn-
drome or arteriosclerosis (2, 6).

The bronchial artery aneurysms are usually asympto-
matic until they rupture. The rupture can be a life-threatening
condition. In most cases it presents with hemoptysis be-
cause the aneurysm ruptures into the lung parenchyma or
a bronchus. If the aneurysm ruptures into the mediastinum,
it will form a hematoma which will obstruct the oeso-
phagus, or eventually rupture into the oesophagus, and
then present with dysphagia or hematemesis (7). In some
cases the bronchial artery aneurysm rupture can have a cli-
nical picture indistinguishable from thoracic aorta dissec-
tion (2). A case of bronchial artery aneurysm disguised as
esophageal leiomyoma was reported (7).

The diagnosis is usually based on the imaging methods.
Ultrasound scans can reveal hemothorax. CT scans or MRI
have greater benefit, displaying hypertrophic artery with
the aneurysm, and the diagnosis is confirmed by the angi-
ography (3).

Endovascular embolization is the method of choice.
The embolization can be achieved with metal microcoils. It
is necessary to insert the microcather into the aneurysm.
The goal is to homogenously fill the aneurysm and to ex-
clude it from blood flow. If possible, it appears optimal to
commence the embolization in the vessel behind the aneu-
rysm, occlude the aneurysm sac and continue with the em-
bolization of afferent vessel, so called trapping technique.
This technique prevents retrograde filling of the aneurysm.

Another endovascular technique is embolization with N-bu-
tyl-2-cyanoacrylate (NBCA; Histoacryl, B. Braun, Germany).
The microcathether is inserted into the feeding vessel and
the NBCA can be diluted by iodized oil Lipidol (Lipidol
UltraFluide, Guebert, France). It is possible to embolize the
feeding vessel, the aneurysm and the efferent vessel. This
technique is used in tortuous elongated vessels where it is not
possible to insert the cathether inside the aneurysm (1, 4).

Only in cases where the endovascular technique fails, or
it is not possible to perform it (due to hemodynamic insta-
bility of the patient, iodine contrast allergy, etc.), surgical
procedure should be performed (3, 4, 6). Surgical aneu-
rysmectomy is also necessary in case of unsuccessful em-
bolization or in case of continuous bleeding (9).

Management of an asymptomatic aneurysm remains
controversial. There are no known predictors of rupture of
the aneurysm, and the rupture can be a life threatening con-
dition. Therefore asymptomatic aneurysms should be treated
as well. Some authors recommend preventive thoracotomy with an aneurysmectomy, or even lobectomy (5). However, we are convinced that miniinvasive endovascular treatment is the method of choice.

In our patient, the epigastric pain was caused by hematoma in mediastinum. According to our best knowledge, this is the first published case of a patient with bronchial artery aneurysm presenting with epigastric pain. Treating the aneurysm, we preferred endovascular intervention, which proved to be optimal in this case.

References


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