Superior thyroid artery pseudoaneurysm as a complication of transesophageal echocardiography

Abstract
The pseudo-aneurysm is a hematoma of post-traumatic origin, and capsulated button which is in communication with the lumen of the artery of relevance. Singular occurrence in the district ENT, if not recognized early the pseudo-aneurysm can result in dramatic events such catastrophic bleeding or acute occlusion of the upper airway. In literature there are outstanding references to the pseudo-aneurysm of the superior thyroid (STA). We present a rare case of pseudo-aneurysm occurred after the ATS trans-esophageal echocardiography (TEE) and external cardioversion.

Keywords: pseudoaneurysm, ent complication, endovascular coil embolization

Abbreviations: STA, pseudo-aneurysm of the superior thyroid; TEE, trans-esophageal echocardiography; FNAC, fine needle aspiration biopsy

Introduction
Pseudoaneurysm is a pulsating hematoma that results from a tangential injury to an arterial vessel wall and could represent a complication after trauma. In head and neck region pseudoaneurysm is rare but could have catastrophic consequences. For this reason it must be recognized to prevent such events as hemorrhage or acute occlusion of the airway. In literature a pseudoaneurysm arising from superior thyroid artery (STA) has been reported only in three cases, in one case after ultrasonographically guided chemical parathyroidectomy, one after radiotherapy for hypopharyngeal cancer and the last after fine needle aspiration biopsy (FNAC) of thyroid nodule. We report a case of STA after transesophageal echocardiography guided cardioversion.

Case presentation
A 62-year-old man was admitted in our Otolaryngology Department of presenting sore throat, dysphagia and mild dyspnea after a transesophageal echocardiography guided cardioversion performed 3 days before. The endoscopic examination of upper aerodigestive tract showed a diffuse soft edema of artenoids and pharyngolaryngeal tract without airway obstruction. A corticosteroid therapy was started and the symptoms quickly improved but two days later the patient presented suddenly a hemorrhage from the superior aerodigestive tract. The endoscopic examination revealed a swelling of the left lateral wall of the hypopharynx and a hemorrhage from the apex of the swelling which stopped spontaneous after few minutes. A CT scan of neck revealed an active arterial bleeding with pseudoaneurysmal dilatation of 1,2cm of diameter arising from a fine branch of external carotid artery and a well defined homogeneously enhancing mass, 9.5 x 3.2cm diameter in left neck space extending superiorly to parapharyngeal spaces, inferiorly to hypopharynx displacing hyoid bone, thyroid cartilage, posterior to cricoid cartilage displacing cervical esophagus and laterally to subcutaneous tissue displacing sternocleidomastoid muscle (Figure 1). The mass was suggestive for hematoma. The angiography revealed a pseudoaneurysm with active bleeding of the terminal tract of superior thyroid artery (STA) (Figure 2). An endovascular procedure was performed with a superselective microcateter and an endovascular occlusion by coil embolization of STA with exclusion of the pseudoaneurysm demonstrated at the end of the procedure (Figure 3). The symptoms resolved after one day from the endovascular procedure. The patient was discharged after two days without evidence of bleeding and an endoscopic control after 4 weeks revealed a disappearance of swelling.

Discussion
Pseudoaneurysm, also called “false aneurysm”, is an harnatoma contained by adventitia or perivascular tissue communicating with an arterial vessel that results from a tangential injury to the vessel. Most often it is secondary to blunt and penetrating trauma or surgery or percutaneous biopsy of solid organs.

Pseudoaneurysm of head and neck are quite rare events but could lead to catastrophic complications. Clinical manifestations can include pulsating mass in the neck, dysphagia, dyspnea, pain in the neck, bleeding from oral cavity and cerebrovascular symptoms. The differential diagnosis of an expansive cervical mass includes bronchial cleft cyst, neck abscess and cervical adenitis. Other cervical masses such as tumors, lymphadenopathy or neurinomas can be excluded by...
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