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 cataclysmic bleeding or acute occlusion of the upper airway. In literature there are outstanding references to the pseudo-aneurysm of the superior thyroid (ATS). 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

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 tree cases, in one case after ultrasonographically guided chemical parathyriodectomy, 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, disphagia 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 arytenoids and pharyngolaryngeal tract without airway obstruction. A corticosteroid therapy was started and the symptoms quickly improved but two days later the patient presented suddenly an 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 1.2 cm of diameter arising from a fine branch of external carotid artery and a well defined homogeneously enhancing mass, 9.5 x 3.2 cm diameter in left neck spaces 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 superselctive microcateter and a 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

Figure 1: Axial CT scan illustrating pseudoaneurysmal dilatation arising from a fine branch of external carotid artery.
A fast development of an expanding mass under the angle of the mandible or in lateral pharyngeal wall after surgical procedure of the neck, percutaneous biopsy and neck trauma should always raise the suspect of an extra cranial arterial pseudoaneurysm.

In our knowledge only three cases of pseudoaneurysm of superior thyroid artery have been reported previously. The first case was a pseudoaneurysm occurred after ultrasonographically guided chemical parathyriodectomy [15]. The diagnosis was made by angiography and treated by selective coil embolization. The second case reported a pseudoaneurysm occurred in a patient with hypopharyngeal squamous cell carcinoma during simultaneous radiotherapy and chemotherapy [13]. The diagnosis was made by a CT scan and treated by selective coil embolization. The third case reported a pseudoaneurysm after ultrasonographically guided biopsy of a thyroid nodule [10]. The diagnosis was made after ultrasonography and color Doppler examination and treated waiting spontaneous thrombosis.

In our patient the pseudoaneurysm occurred after a transesophageal echocardiography guided cardioversion (TEE-guided). The diagnosis was made by a computed tomography scan and treated by selective coil embolization. Transesophageal echocardiography guided cardioversion with short-term anticoagulation can be considered a safe and clinically effective for patients with atrial fibrillation. Complications reported after TEE-guided procedure includes bleeding events. We describe a unique case of superior thyroid artery pseudoaneurysm after TEE-guided.

Pseudoaneurysm in the neck are quite rare event but a rapid growing of an expanding mass in the neck after surgical procedure of the neck, percutaneous biopsy and neck trauma or transoral procedures should always raise the suspect of an extra cranial arterial pseudoaneurysm. A rapid growing mass in the neck can led to an airway acute obstruction and a fast diagnosis and treatment is required in order to prevent catastrophic consequences. In according with literature there are not protocols for diagnosis and treatment. In our opinion CT scan for differential diagnosis and visualization of anatomical structures involved and a transarterial coil embolization can be considered a safe and effective diagnostic and treatment procedures.

References
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