



Tortuous Common Carotid Artery Masquerading as Thyroid Mass

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Keywords

Carotid artery; Thyroid; Neck; Tortuosity

Clinical Image

A 58-year-old woman was referred to our hospital for an evaluation of thyroid tumor from local clinic. The patient had no past medical history. Physical examination revealed a soft and pulsatile mass over right thyroid region. No gross tumor was noted over nasopharynx, larynx, oropharynx and hypopharynx. Sono-guided fine needle aspiration biopsy was arranged for a pathological examination. However, ultrasonography with Doppler Color Flow Image (DCFI) showed a tortuous Common Carotid Artery (CCA) compressed right thyroid gland. No focal lesion was noted in the thyroid gland. The procedure of FNA biopsy was cancelled to avoid possible bleeding. Contrast-enhanced Computed Tomography (CT) of the neck further revealed the tortuosity of right CCA and compression to right thyroid gland (Figure 1). The image of 3D-CT reconstruction showed a reverse

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Received Date: 19 Jul 2018

Accepted Date: 14 Aug 2018

Published Date: 16 Aug 2018

Citation:

Chen P-J, Chen H-C. Tortuous Common Carotid Artery Masquerading as Thyroid Mass. *Clin Surg*. 2018; 3: 2070

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Figure 1: Axial view contrast-enhanced CT of the neck further revealed multiple lumens of right CCA and overriding to right thyroid gland.

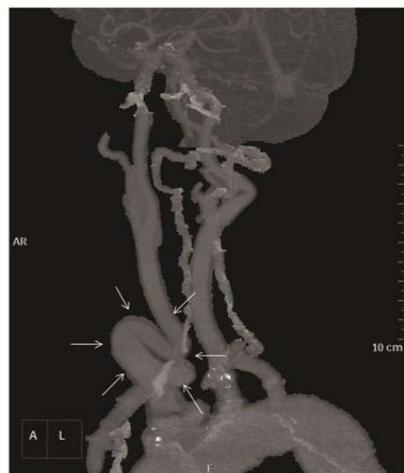


Figure 2: The reconstruction image of 3D-CT showed a reverse S-shaped tortuosity of right CCA.

S-shaped tortuosity of right CCA (Figure 2). A clinical diagnosis of tortuosity of right CCA was made.

The incidence of pulsatile neck mass is relatively rare in the entity of neck mass [1]. Pulsatile neck masses are categorized into vascular lesion and non-vascular lesions [1,2]. The differential diagnosis of vascular lesions includes aneurysm, carotid body tumor, and tortuosity of carotid artery, arteriovenous fistula, prominent carotid bulb, strong venous pulsations or dilated jugular bulb. On the contrary, non-vascular lesions include enlarged lymph nodes, branchial cleft cyst, thyroid tumor, cystic hygroma, lipoma and neurogenic tumor. The diagnosis of pulsatile neck mass should require thorough physical examination, ultrasonography with DCFI, CT or CT angiography or magnetic resonance imaging to rule out potential dangerous diseases such as aneurysm [1,3].

The tortuosity of CCA almost occurs in female with mean age between 50 and 60 year-old and usually presents on the right side of CCA [2]. Most patients are asymptomatic, but some case reports present throbbing, dysphagia, dyspnea or painful sensation associated with the mass and even the symptoms of cerebrovascular insufficiency due to decrease of blood flow [2,4]. The etiology of tortuosity of CCA remains unclear [5]. Hypertension and atherosclerotic vascular disease may contribute to elevation of the aortic arch and subsequent formation of a buckle in the CCA [2,5]. Visualization of the aortic knob at the level of the clavicle or higher on a chest X-ray should raise suspicion for this diagnosis [2].

The management of tortuosity of CCA requires no specific therapy [2]. Surgical treatment including graft insertion, repositioning

techniques and end-to-end anastomosis after resection of CCA is performed among the patients with symptoms of cerebrovascular insufficiency [2]. Because the patient had no neurological symptoms or impending complications, conservative management was recommended. This case illustrates the importance of including carotid artery variation should keep in mind in the differential diagnosis of pulsatile neck mass before performing a blind fine needle aspiration biopsy [1,3].

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