

Saccular Aneurysm of the External Jugular Vein: A Case Report

Hae Young Lee, M.D.¹, Sung Ho Cho, M.D.¹, Taek Yong Ko, M.D.¹, Hyun Su Kim, M.D.¹,
Jong In Kim, M.D.¹, Sung Dal Park, M.D.¹, Sung Rae Cho, M.D.¹, Bong Kwon Chun, M.D.²

Saccular aneurysm of the external jugular vein presenting as a neck mass is very rare. We report the surgical treatment of an external jugular venous aneurysm in a 48-year-old female patient due to the cosmetic problem of neck engorgement, concomitant with thyroidectomy for cancer.

Key words: 1. Venous disease
2. Aneurysm
3. Vascular disease

CASE REPORT

A 48-year-old female patient visited our cardiovascular outpatient department for treatment of a mass-like dilated neck vein as a procedure concomitant with thyroid cancer surgery. We could detect the gross engorgement of the neck mass in the supine position or by using the Valsalva maneuver when the patient was in an erect position (Fig. 1). Preoperative contrast-enhanced computed tomography (CT) of the neck showed a venous dilatation, similar to a cystic mass (size: 2.5×2.2 cm) communicating with the left external jugular vein (Fig. 2).

After thyroidectomy under general endotracheal anesthesia, an additional separate skin incision (length: approximately 2.5 cm) along the neck dermatome was made because of the distance from the collar incision (approximately 5 cm). We accomplished aneurysmectomy by the division of both ends of the external jugular vein and a tributary of the aneurysm in the subcutaneous layer (Fig. 3A). No intraluminal thrombus was observed upon a gross inspection of the specimen.

Pathological findings confirmed that the diagnosis was consistent with a saccular venous aneurysm. In contrast to focal thinned media with thickened intima by fibrous tissue in a varicose vein, the vascular wall thickness of a venous aneurysm is relatively homogenous with thickened media and localized thickened intima (Fig. 3B). The patient was discharged without any complications.

DISCUSSION

Acquired venous aneurysm in the neck area is a very rare disease and requires a differential diagnosis including enlarged cervical lymph node, tumor of the adjacent organs, laryngocele, and various cystic formations. According to the incidence rate, the internal jugular vein is a more frequent site of aneurysm development than the external vein, but the anterior jugular vein is the least frequent site [1]. Saccular aneurysm is less common than fusiform aneurysm [2].

Fusiform venous dilatation is frequently diagnosed in children with a congenital etiology and right-side predominance

Departments of ¹Thoracic and Cardiovascular Surgery and ²Pathology, Kosin University Gospel Hospital, Kosin University College of Medicine
Received: October 7, 2013, Revised: November 19, 2013, Accepted: November 21, 2013

Corresponding author: Sung Ho Cho, Department of Thoracic and Cardiovascular Surgery, Kosin University Gospel Hospital, Kosin University College of Medicine, 262 Gamcheon-ro, Seo-gu, Busan 602-702, Korea
(Tel) 82-51-990-6466 (Fax) 82-51-990-3066 (E-mail) aorta007@naver.com

© The Korean Society for Thoracic and Cardiovascular Surgery. 2014. All rights reserved.

© This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.



Fig. 1. A 48-year-old female patient complained of cosmetic concerns regarding a compressible lump in the left supraclavicular fossa, which was diagnosed as a venous aneurysm.

but appears in adults as an acquired form with left-side predominance; the suggested mechanism in adults is the patient's hypertensive aorta compressing the left innominate vein, resulting in venous dilatation [3].

In addition, the etiology of an acquired venous aneurysm can involve tumors, inflammation, trauma, or spontaneous development [4]. Of the aneurysms resulting from iatrogenic causes, pseudoaneurysm at the internal jugular vein appears most frequently; a case at the external jugular vein has also been reported [5]. However, the patient in the present case had no previous neck procedures or trauma history. Therefore, the etiology of this case is considered to be spontaneous development.

Clinically, although painful swelling is associated with intraluminal thrombus, saccular aneurysm appears with painless swelling. The Valsalva maneuver, performed by moderately forceful attempted exhalation against a closed airway, usually

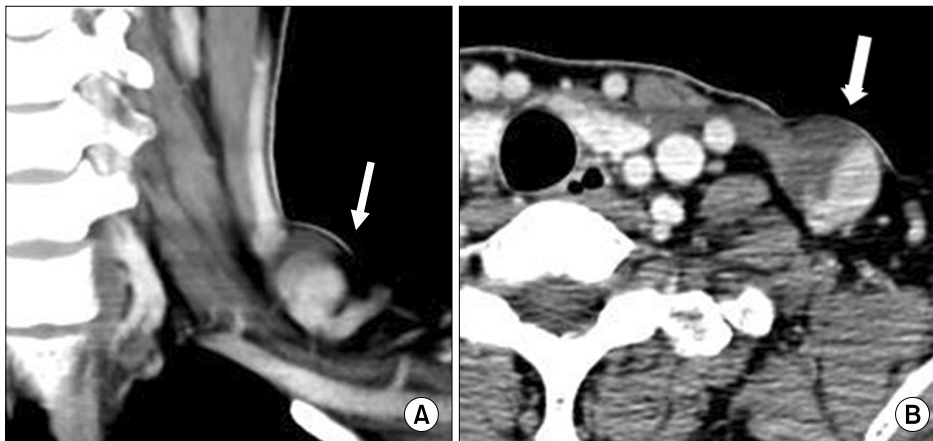


Fig. 2. Enhanced computed tomography showed a cystic mass (arrow) communicating with the left external jugular vein. (A) Coronal; (B) axial view.

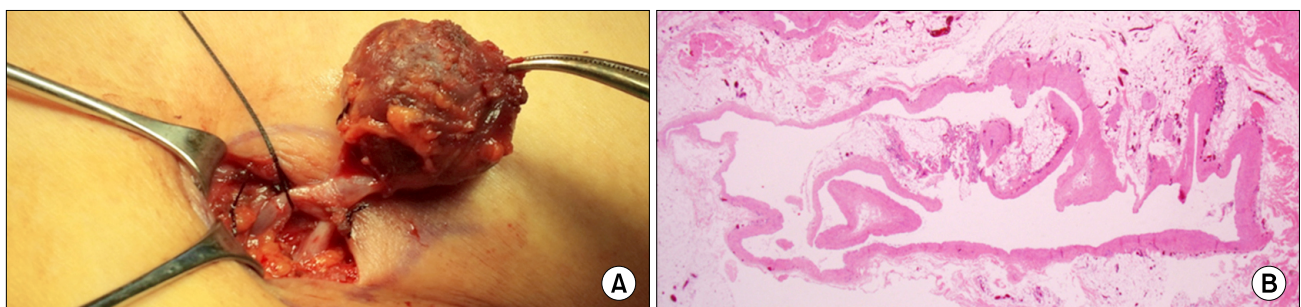


Fig. 3. (A) Resection of the external jugular venous aneurysm with proximal and distal tributaries. (B) The microscopic findings show that the vascular wall thickness of the venous aneurysm is relatively homogenous with thickened media and localized thickened intima (H&E, ×12.5).

performed by closing one's mouth and pinching one's nose shut while pressing out as if blowing up a balloon, can induce venous engorgement characteristically. However, by manual compression of an engorged neck mass in the case of the external jugular vein, the Valsalva maneuver cannot make the swelling prominent [4].

Ultrasonography has been the most useful diagnostic modality for this disease [6]. Because the patient had already undergone contrast-enhanced CT imaging for thyroid cancer, ultrasonography was not required in this case.

Cosmetic concerns, painful swelling due to intraluminal thrombosis, or phlebitis of the jugular vein are all motives for surgical treatment. Otherwise, reassurance and regular follow-up can be a substitute for prompt treatment of an asymptomatic venous aneurysm. Although embolic complications have been reported at a lower incidence rate in jugular venous aneurysms, active treatment cannot be neglected. A recent report documented a pulmonary thromboembolism derived from an external jugular venous aneurysm [7], and large-scale studies are needed to overcome the limitations of rare case reports [8]. Thus, all cases of venous aneurysm should be reported for further study.

Surgical resection can minimize the risk of pulmonary thromboembolism as well as aneurysmal rupture induced by growth and can confirm the histopathological diagnosis. Aneurysmal resection is accomplished by excision with ligation in the saccular form, and exclusion via bypass in fusiform aneurysms [4].

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. LaMonte SJ, Walker EA, Moran WB. *Internal jugular phlebotaxis: a clinicoroentgenographic diagnosis*. Arch Otolaryngol 1976;102:706-8.
2. Verbeeck N, Hammer F, Goffette P, Mathurin P. *Saccular aneurysm of the external jugular vein, an unusual cause of neck swelling*. J Belge Radiol 1997;80:63-4.
3. Nwako FA, Agugua NE, Udeh CA, Osuorji RI. *Jugular phlebotaxis*. J Pediatr Surg 1989;24:303-5.
4. Mohanty D, Jain BK, Garg PK, Tandon A. *External jugular venous aneurysm: a clinical curiosity*. J Nat Sci Biol Med 2013;4:223-5.
5. Drakonaki EE, Symvoulakis EK, Fachouridi A, Kounalakis D, Tsafantakis E. *External jugular vein aneurysm presenting as a cervical mass*. Int J Otolaryngol 2011;2011:485293.
6. Lee HY, Yoo SM, Song IS, Yu H, Lee JB. *Sonographic diagnosis of a saccular aneurysm of the internal jugular vein*. J Clin Ultrasound 2007;35:94-6.
7. Ioannou CV, Kostas T, Tsetis D, Georgakarakos E, Gionis M, Katsamouris AN. *External jugular vein aneurysm: a source of thrombotic complications*. Int Angiol 2010;29:284-5.
8. Calligaro KD, Ahmad S, Dandora R, et al. *Venous aneurysms: surgical indications and review of the literature*. Surgery 1995;117:1-6.