CASE REPORT

Undivided Retromandibular Vein Continuing As External Jugular Vein With Facial Vein Draining Into It : An Anatomical Variation

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Abstract

Despite the fact that the blueprint of the whole body is unravelled, faultlessly during the growth and development of an animal; but amazingly variations do occur. During routine dissection of head and neck in a middle aged cadaver in the Post Graduate Department of Anatomy of this medical college, we found variation in the formation of external jugular vein on both sides, which was formed by the continuation of undivided trunk of retromandibular vein. The facial vein and posterior auricular vein were the tributaries of external jugular vein. The sound anatomical knowledge of variations of the veins of head and neck is essential to the success of surgical procedures. The embryological evaluation of the above anomaly was done and compared with the available literature which showed that the observed variation was rare

Key Words

External jugular vein, Retromandibular vein, Variations

Introduction

The variations of the blood vessels of body are not uncommon and are seen more frequently in veins than in arteries. The external jugular vein drains most of the blood from the face and scalp. The standard anatomical description of external jugular veins consists of posterior division of retromandibular vein uniting with the posterior auricular vein (1). The knowledge of variations of superficial veins of head and neck is important to surgeons as these veins may be used as patches for carotid endarterectomy and for oral reconstruction surgeries, where facial vein is often needed for microvascular anastomosis(2). The external jugular vein is increasingly being utilized for cannulation to conduct diagnostic procedures or intravenous therapies (3). The external jugular vein is easier to visualize than the internal jugular vein and may give a reliable estimate of central venous pressure. Permanent catheterization for haemodialysis via it is a simple procedure without any severe complications (4). In addition, the retromandibular vein is used as a guide to expose the facial nerve branches in superficial parotidectomy and in open reduction of mandibular condylar fractures. The vein and its tributaries have to be identified and ligated during surgeries to prevent excessive bleeding. The present article reports the case of bilateral anatomical variation in the external jugular vein of a cadaver during dissection.

Case Report

During routine dissection of head and neck, in a middle aged male cadaver a bilateral variation was noticed. The external jugular vein was formed by the continuation of undivided retromandibular vein which was formed by joining of superficial temporal vein with the maxillary vein within the substance of parotid gland. The facial vein presented a normal course from its origin up to the base of the mandible lying posterior to the facial artery at the anterior border of masseter muscle. It joined with submental vein in submandibular region and ultimately drained into external jugular vein. Posterior auricular vein drained into external jugular vein as a tributary. The external jugular vein after receiving all these tributaries

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Fig 1. Showing Retromandibular Vein Continuing as External Jugular Vein. Facial Vein and Posterior Auricular Vein Draining into External Jugular Vein

crossed the sternocleidomastoid muscle superficially reaching the roof of the posterior triangle, where it pierced the deep fascia and drained into subclavian vein.

Discussion

The obscure system of development of the vascular system often results in an array of clinically related anomalies. The veins draining the regions of head and neck establish their identity only after the development of skull. The external jugular vein arises as a secondary channel from a capillary plexus derived from a tributary of cephalic vein, from the tissues of the neck and anastomoses secondarily with the anterior facial vein (5). In the present case, the undivided retromandibular vein was continuing as external jugular vein. Its tributaries were posterior auricular vein and facial vein which were comparatively of smaller diameter and drained obliquely into the external jugular vein. Although some cases of facial vein draining into the external jugular vein instead of the internal jugular vein have also been reported like the present case, but in all those cases the mode of formation of external jugular vein was normal and the anomaly recorded was unilateral (6,7,8,).

The available literature does not depict such type of anomaly in which retromandibular continued as external jugular vein with facial vein joining as one of the tributaries. Moreover, the bilateral spectrum of anatomic variation makes it a rare special case. The variation of external jugular vein and its tributaries are of great importance since this subcutaneous vein has many clinical applications in reconstructive microsurgeries and diagnostic procedures. Any malformation and variations of veins of head and neck should be kept in mind preoperatively, as this helps surgeons to plan the operative procedures.

Conclusion

A rare variation of continution of retromandibular vein as external jugular vein with facial vein draining into it is presented.The significance of anomaly is due to its bilateral occurence as the same has not been reported in the litrature.

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