Case Report

Variation in the termination of common facial vein – a case report

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Abstract

During routine dissection of 50 year old male cadaver in the department of anatomy for undergraduate students we found variation of common facial vein, in which it was draining into external jugular vein of same side instead of internal jugular vein. This is rare isolated anomaly of common facial vein. Many other investigators also reported similar findings in previous studies.We are reporting here, the rare occurrence of the common facial vein draining into the external jugular vein unilaterally.Variation in the venous drainage of veins of the neck is having clinical importance for surgeon for the success of procedures in the neck also to avoid the complication during the procedures. This variation is also having embryological basis that will be discussed in this paper.

Keywords: Common facial vein, external jugular vein, retromandibular vein.

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Received Date: 14/02/2015 Revised Date: 22/03/2015 Accepted Date: 26/04/2015

Access this article online

Quick Response Code:

Website: www.statperson.com

Volume 5
Issue 2

INTRODUCTION

Because of the complex developmental pattern of veins of head, face and neck they are prone for variations in the formation and drainage. Usually facial vein begins from the medial angle of eye by union of supraorbital and supratrochlearveins. The superficial temporal vein unites with the maxillary vein to form the retromandibular vein. The retromandibular vein divides into the anterior and the posterior divisions within the substance of the parotid gland. The anterior division joins with the anterior facial vein to form the common facial vein and it drains into the internal jugular vein. The posterior division, after union with the posterior auricular vein, continues as the external jugular vein which drains into the subclavian vein[1]. Then it run downwards and backwards to reach the base of mandible. Then it is joined by anterior division of retromandibular vein to form common facial vein. It crosses base of mandible, inferior surface of submandibular gland and drain into internal jugular vein. External jugular vein is formed by union of posterior division of retromandibular vein and posterior auricular vein. It drains into corresponding subclavian vein in supraclavicular triangle. Veins of neck are commonly used for cannulations for central venous pressure or infusion. These veins are also used in surgeries like carotid endarterectomy. Hence detail knowledge of variations is necessary for surgeons. Clinician must have the thorough knowledge of variation in the venous pattern of the veins of the neck for the successful performance of clinical procedures in the region of neck. Important clinical procedures which are performed in the region of neck arepatch for carotid endarterectomies, veins of the neck are often used for cannulation, either for intravenous infusion or for central venous pressure Monitoring.

CASE STUDY

During routine dissection in the Department of Anatomy of MIMSR medical college Latur, in a 50 old male cadaver on right side we found variation in which, the right common facial vein was formed as usual by joining of facial vein and anterior division of retromandibular vein, but the termination of common facial vein was unusual. Common facial vein was draining in the right external jugular vein just 4cm above the termination of

How to cite this article: Pathan Ferozkhan Jafarkhan, Surwase Ramdas Gopalrao, Smita Balsurkar, Rubeena Hashmi. Variation in the termination of common facial vein – a case report. *International Journal of Recent Trends in Science and Technology* April to June 2015; 5(2): 13-15 http://www.statperson.com

external jugular vein in the subclavian vein. Common facial vein was running long course, crossed sternocleidomastoid muscle by making backward loop and joined to external jugular vein from anterior side. External jugular vein was formed as usual by joining of posterior auricular and posterior division of retromandibular vein. No other anomaly noted on same side. Whereas on left side of neck there was normal pattern of veins. The common facial vein is formed by the union of facial vein and anterior division of retromandibular vein. Then it runs on the inferior surface of superficial part of the submandibular gland, finely it drains into internal jugular vein. The external jugular vein is formed by union of posterior division of retromandibular vein and posterior auricular vein. Then it runs obliquely on the sternocleidomastoid muscle to drain to the subclavian vein.

DISCUSSION

1. Variations in the venousdrainage pattern of head and neck are common but important clinically.
2. Chudhari *et al* (1997) reported facial vein terminating in the external jugular vein.[2]
3. Siddaraju S.K. (2013) reported common facial vein dividing and draining in to external as well as internal jugular veins.[3]
4. Pikkieff *et al* (1937) noticed facial vein ending as external jugular vein.[4] Facial vein joining retromandibular vein at higher level in the right parotid gland was reported by Kopuz *et al* (1995).[11]
5. Peurker *et al* (2001) reported right facial vein draing in superficial temporal vein.[5]
6. Bertha A and Suganthy Rabi (2011)[6] found in three specimens, the common facial vein opened into the external jugular vein. In one specimen, on the right side, the common facial vein ran separately for almost the whole length of the neck and opened into the external jugular vein. In two other cadavers, the left common facial vein drained into the external jugular vein, while the right vein drained into the internal jugular vein.

There was no division of the retromandibular veins into the anterior and posterior veins on both sides. The common trunk of the retromandibular veins joined with the anterior facial veins to form the common facial veins. The external jugular veins were absent bilaterally. He also found rare bilateral drainage of the common facial vein into the subclavianvein and the bilateral absence of the external jugular vein. ShilpaBathla, RituSingroha, S.K. Srivastava (2012)[13] found bifurcated facial vein with one limb terminating into the anterior jugular vein and another into external jugular vein.

CLINICAL IMPORTANCE

Deviation from the normal pattern in the vascular system is a common feature, and it is more common in the veins than in the arteries (Hollinshead, 1982).[12] Detailed knowledge of normal course, termination and variation of blood vessels is important to avoid complication in surgeries and to prevent undue blood loss. Common facial vein terminating into external jugular vein may give false record of central venous pressure. Complication may occur during central venous catheterization because of such variation. The knowledge of the variations of the superficial veins of the neck the effective utilization of these veins for grafting in endarterectomies.(BERTHA). The common facial vein has been used as a patch material for carotid angioplasty, as it is almost always available at the carotidexposure site. It can be harvested by the same incision by a simple technique and at no extra operating time[7,8]. According to Siddaraju KS External jugular vein may give diagnostic signs of heart failure. Techniques of central venous catheterization are now of great clinical importance both to measure central venous pressure (CVP), for practical purpose the pressure within the right atrium, and also to allow rapid blood replacement and long term intravenous feeding by means of glucose, amino acids and fats.[3]

Embryological basis: Superficial veins of head and neck develops from superficial plexus of the capillaries, which ultimately form primary head vein. Large channels are formed by enlargement of individual capillaries[7,8]. The anomalous patterns could be explained by the regression and/ or retention of the venous anastomotic channels.[9] The drainage of the common facial vein into the external jugular vein could be explained by the persistent anastomotic channel between the primitive linguofacial vein and the secondarily developing external jugular vein.

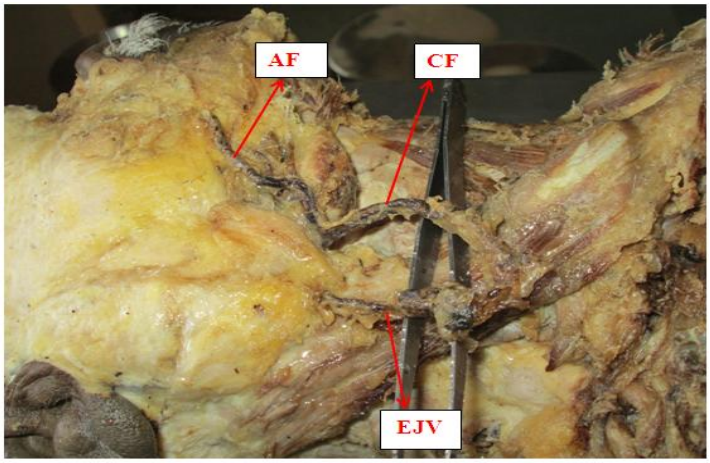

Figure 1

ABBREVIATIONS: CFV- common facial vein, EJV- external jugular vein, FV- anterior facial vein

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Source of Support: None Declared
Conflict of Interest: None Declared