

Unilateral Duplication of Retromandibular Vein an Unusual Variation

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Abstract

Background: Variation in blood vessels is not uncommon and is more frequently seen in veins including retromandibular vein. The Knowledge of variation of superficial veins of head -neck is important to surgeon as these may be used for reconstruction surgery. **Aims & objectives:** To know variation in origin, course and termination of retromandibular vein. **Methods and observations:** During routine dissection for undergraduate class in the department of anatomy, a duplication of retromandibular vein was observed on left side in a 47 year old male cadaver. **Conclusions:** This case is being reported to highlight this rare variation of retromandibular vein, which may have significance in surgical and modern imaging field to localize the parotid tumor in relation to facial nerve and its subsequent removal. Although variations of retromandibular vein are reported earlier, but duplication is unique because of its rarity.

Keywords: Retromandibular vein; Facial nerve; Parotidectomy.

Introduction

Variations in blood vessels of body are not uncommon and are more frequently seen in veins including retromandibular vein (RMV). The Knowledge of variation of superficial veins of head -neck is important to surgeon as these may be used for reconstruction surgery or cannulation for intravenous medication. Moreover RMV is used as a guide to expose facial nerve branches in superficial parotidectomy.[1] RMV is also important clinically because venous aneurysm can develop in it.[2] The present case is being reported for its surgical importance as the variations of RMV may be helpful to take pre-surgical decision to avoid excessive bleeding during parotidectomy.

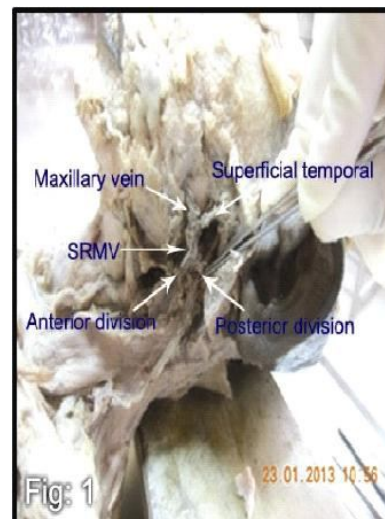
Aims & Objectives

To know variation in origin, course and termination of RMV vein.

Materials and Method

A 47 year old embalmed male cadaver was used for undergraduate students in Department of Anatomy, GSL Medical College, and Rajahmundry. Dissection was

Fig 1: Formation of SRMV & DRMV

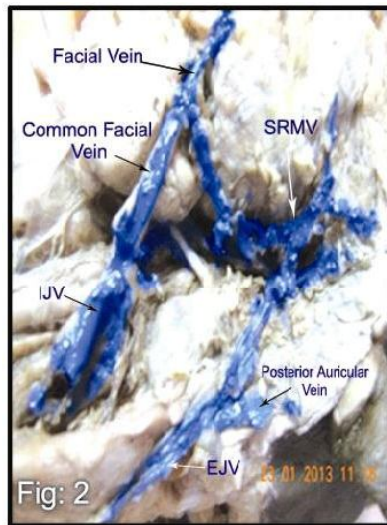


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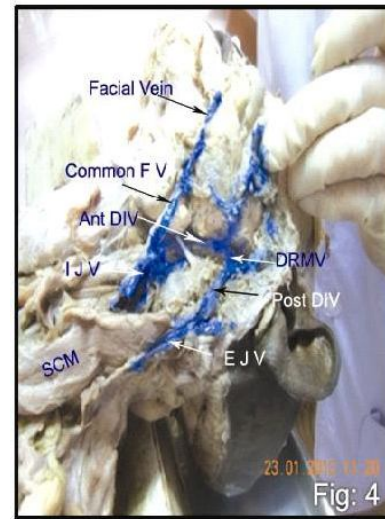
Fig 2: relations of SRMV & DRMV

done according to the Cunningham's Manual of Practical Anatomy (vol-3, page 115-118). After careful dissection variation of RMV was observed and photographed.

Results

In present case we observed unusual variation of RMV which consisted of two components (superficial SRMV-Fig 1, 2 & deep DRMV- Fig 3, 4).

Formative tributaries of both RMV arose from superficial temporal and maxillary vein and both the veins divided to form retromandibular veins (SRMV & DRMV)

Fig 3: Tributaries of SRMV & DRMV**Fig 4: Termination of SRMV & DRMV**

within the parotid gland.

After formation both veins divided into anterior and posterior division. Posterior division of SRMV united with posterior division of DRMV to form common trunk which in turn joined with posterior auricular vein to form external jugular vein.

Anterior division of SRMV united with facial vein to form common facial vein which drained into internal jugular vein.

The anterior division of DRMV directly joined with internal jugular vein although a communication was found between anterior divisions of both veins (SRMV & DRMV).

No variation was found in right RMV. No variations were noted on either side in any other vessel of head neck.

Discussion

During embryonic development, the venous drainage of head neck region gets established after the formation of skull.[3] The variation of size and pattern of veins in head and neck is quite common including the RMV. The anomalous venous patterns are due to regression and/or retention of venous anastomotic channels as described by Veena Vidya shankar *et al* in their article.[4]

Hamilton and Boyd *et al* described that

variation of superficial veins of head neck is a common phenomena because superficial veins of head neck develop from superficial plexus of capillaries.[5] This plexus ultimately gives rise to primary head vein. Larger veins are formed by joining of confluence of capillaries or enlargement of individual veins. Regression of few venous channels alters the venous flow.

In present case we have observed bifurcation of superficial temporal vein. Similar findings were also noted by Veena Vidya shankar *et al*[4].

Tour *et al* reported in their study that the relationship between facial nerve and RMV was not fixed.[6] They dissected 132 cadavers and found following results. The vein was medial to the nerve in 65.2% cases and lateral to the nerve in 13% cases. In 6.8% cases they found the nerve was placed between superficial and deep venous plane.

In present case we also found superficial and deep RMV but both were situated deep to facial nerve.

According to Yao Wancai *et al*, the most common variation of RMV was that the vein crossed the facial nerve medially (33.31%) at a point between the bifurcation and ramification points of the lower trunk of facial nerve.[7] They investigated 31 cadavers. In 15.4% cases they observed the course of RMV was different on right and left side of face in same cadaver.

Copuz *et al* reported in their series of 30 cadaveric dissections that in 90% of cases RMV was located on the medial side of the upper and lower trunks of facial nerve.[8] In 10% cases RMV was located lateral to the lower trunk and 15% cases the course of RMV was different on right and left side of same cadaver.

The present case showed variation in RMV on left side alone.

Mehera *et al* reported that an undivided RMV joined with common venous trunk (formed by union of submental vein with facial vein) to form common facial vein which in turn drained into internal jugular vein (IJV).[9]

In present case although anterior division of SRMV joined with facial vein to form common facial vein which drained into IJV but DRMV directly drained into IJV.

Sahanaz *et al* found undivided RMV on both side of same cadaver which in turn joined with posterior auricular vein to form external jugular vein.[10]

No such variation was observed in present case.

Conclusion

We discussed a rare variation of RMV. Although variation of formation, termination and division of RMV were found but duplication is unique because of its rarity. Knowledge of this variation may be useful in planning and executing surgical or radiological intervention

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