An unusual venous drainage of face – a case report

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ABSTRACT

Facial region is drained by the maxillary, facial and superficial temporal veins. In the present case, retromandibular venous junction divided into anterior and posterior divisions immediately after its formation and a common venous channel was formed between internal jugular and anterior jugular veins where facial, lingual and submental veins drained.

Keywords: Maxillary vein, facial vein, superficial temporal vein, retromandibular vein, internal jugular vein, external carotid artery, lingual vein.

INTRODUCTION

Face is an important part of our body with surgical and cosmetic values. During surgery of temporomandibular joint, posterior ramus of mandible, parotid gland or upper part of neck, any inadvertent injury of retromandibular vein or its division or common facial vein can lead to profuse bleeding, resulting in heavy blood loss. Therefore, from the surgical point of view, the knowledge of the variations in anatomy of venous drainage of face has been found to be of immense importance. The commonest pattern of venous drainage of face presents as union of the superficial temporal vein with the maxillary vein forming the retromandibular vein (RMV) within the substance of parotid gland and at its apex the retromandibular vein divides into anterior and posterior divisions. The anterior division joins with the facial vein (FV) to form common facial vein that drains into internal jugular vein (IJV). The posterior division unites with the posterior auricular vein to form the external jugular vein (EJV). Retromandibular vein usually lies lateral to external carotid artery.[1-5]

MATERIALS AND METHOD

While dissecting on the right side of the face of a 45 year old adult male of Nepalese origin in the Dissection Hall of the Department of Anatomy of BPKIHS, in November, 2004, it was found the superficial temporal vein joined with the maxillary vein to form retromandibular venous junction which immediately divided into anterior and posterior divisions. Further dissection was carried out to observe the unusual venous pattern and the photographs for same were taken.

RESULTS

In the present case, the superficial temporal vein joined with the maxillary vein to form retromandibular venous junction which immediately divided into anterior and posterior divisions. Retromandibular vein wasn't formed because of immediate division of meeting point of superficial temporal and maxillary veins. This was noted within the upper part of the parotid gland.

The posterior division received the posterior auricular vein and formed external jugular vein, which descended downwards superficial to sternocleidomatoid muscle and drained into subclavian vein.

The anterior division descended anteriorly and was crossed superficially by external carotid artery (Fig. 1). Without receiving facial vein, it drained into common venous arch formed between internal jugular and anterior jugular veins.

The lingual vein also drained into common venous arch. The facial vein descended downward and backward as a normal and usual course and received submental vein near submandibular region draining into common venous arch.

The anterior jugular arch was observed as larger than normal and anastomosed with internal jugular vein through common venous arch (Fig. 2).

Therefore, the following were observed in the present case report.

1. No retromandibular vein formation but retromandibular venous junction was observed.
2. Anterior division of the retromandibular junction was crossed by external carotid artery superficially.
3. The anterior division didn't receive common facial vein and drained into common venous arch.
4. The dimension of anterior jugular vein was comparatively larger and anastomosed with internal jugular vein through common venous arch between internal jugular and anterior jugular veins.

5. Facial vein received submental vein and drained into common venous arch.

DISCUSSION

Variations in the venous drainage of face have been reported by researchers in the past. Mehra *et al*[6] reported a retromandibular vein uniting with the submental vein and facial vein to form a common facial venous channel which communicated with anterior jugular vein through a communicating vein and ultimately joined with internal jugular vein.Kopz *et al*[7,8] observed that the retromandibular vein united with the facial vein at a higher level in parotid region. Peuker *et al*[9] discovered facial vein draining into superficial temporal vein cranial to undivided retromandibular vein. Choudhry *et al*[10] reported that facial vein drained into external jugular vein. However, in the present study, an unusual retromandibular venous junction was observed instead of a well formed retromandibular vein which immediately divided into anterior and posterior divisions. The anterior division of the retromandibular junction was crossed superficially by external carotid artery without receiving common facial vein and drained into common venous arch. However, no retromandibular vein formation was found and the anterior division, without receiving common facial vein, drained into common venous arch anastomosing with receiving common facial vein, drained into common venous arch anastomosing with internal jugular vein. Such unusual venous drainage of face has not yet been reported from Nepal.

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LEGENDS OF PHOTOGRAPH

Photograph 1

Fig. 1. Photograph showing immediate division of retromandibular vein.1. superficial temporal vein 2.maxillary vein 3. retromandibular venous junction 4. anterior division of retromandibular venous junction .5. external carotid artery. 6. posterior division of retromandibular venous junction.

Photograph 2

Fig. 2. Photograph showing unusual venous drainage.1.common venous arch 2.internal jugular vein.3.anterior division of retromandibular venous junction. 4. lingual vein. 5. facial vein. 6.submental vein. 7. anterior jugular vein