Abstract
Introduction
The knowledge of variations of veins of head and neck is of clinical importance. The aim of this report was to discuss the absence of the external jugular vein (EJV) and an abnormal drainage pattern in the veins of the neck.

Case report
During routine dissection of the head and neck region, a unilateral variation in the formation and drainage pattern of veins was seen on the left side of an approximately 60-year-old male cadaver. The anterior division of the retromandibular vein joined the facial vein to form the common facial vein, which drained into the anterior jugular vein instead of the internal jugular vein. The posterior division of the retromandibular vein drained directly into the internal jugular vein. The retromandibular vein was unusually wide in calibre, and there was total absence of the EJV. Since the EJV is frequently used for central venous cannulation, either for intravenous infusion or for central venous pressure monitoring. These venous segments are used for carotid endarterectomies. Hence, a thorough knowledge of the normal anatomy and variations could be useful in performing these procedures. The external jugular vein (EJV) is used for cannulation to conduct diagnostic procedures or intravenous therapies. The EJV may give a reliable estimate of central venous pressure. During superficial parotidectomy and open reduction of mandibular condylar fractures, the retromandibular vein is used as a guide to expose the facial nerve branches.

Normally, the maxillary vein unites with the superficial temporal vein to form the retromandibular vein, which descends in the parotid gland. Distally, it divides into two divisions—an anterior division that passes forwards and unites with the facial vein and a posterior division that joins the posterior auricular vein to form EJV. The EJV is formed by the union of the posterior division of retromandibular vein and the posterior auricular vein below the ear in the substance of the parotid gland. It then passes superficially to the sternocleidomastoid muscle and pierces the investing layer of deep cervical fascia 2.5 cm above the midpoint of the clavicle and finally drains into the subclavian vein. It receives blood mostly from the scalp and face, including the deeper parts of these regions. In the present article, a case of abnormal pattern of drainage of these veins and absence of EJV is being reported.

Conclusion
Absence of EJV and the abnormal pattern of drainage of veins in the neck reported here are very rare. Awareness of these venous variations is vital for the surgeons to avoid any intraoperative trial or error during surgical procedures and to prevent unnecessary bleeding.

Case Report
During routine dissection for undergraduate medical students, we observed an abnormal drainage pattern in veins of the neck on the left side of an approximately 60-year-old male cadaver. The retromandibular vein was unusually wide in calibre, and there was total absence of the EJV. The anterior division of the retromandibular vein joined the facial vein to form the common facial vein that drained into the anterior jugular vein instead of the internal jugular vein, whereas its posterior division drained directly into the internal jugular vein without forming EJV (Figure 1).

Discussion
Variations of the veins of the face and neck, especially the facial and EJVs, are not common. A dissection of 89 cadavers has revealed the variations in the pattern of termination of the facial vein into the EJV in 9% of cases. A similar study on 40 cadavers of Indian origin showed the incidence of the facial vein draining into the EJV in 5% of cases. During this study, authors also noticed few anomalies such as the facial vein continued as EJV, common facial vein draining into the EJV and also the anomalous formation of the EJV.

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Case report

Absence of external jugular vein and abnormal drainage pattern in the veins of the neck has also been reported. In the same case, the retromandibular vein was undivided and posterior auricular vein was absent. A peculiar case of the formation of the EJV by the union of facial and lingual vein has been reported. This linguofacial venous trunk drained into the internal jugular vein above the superior belly of omohyoid. Absence of EJV as seen in the current case is rare.

EJV is increasingly being utilized for cannulation to conduct diagnostic procedures or intravenous therapies. The retromandibular vein is used as a guide to expose the facial nerve branches in superficial parotidectomy and in the open reduction of mandibular condylar fractures. Ultrasound-guided venepuncture is a viable possibility in cases of variations in the patterns of superficial cervical veins, and their knowledge is also important for surgeons during reconstructive surgery. Superficial veins of neck are preferred as the first choice of veins to be grafted into the carotid artery during endarterectomy and also used for surgery involving microvascular anastomosis especially in oral reconstruction procedures.

Conclusion

Absence of EJV and abnormal pattern of drainage of veins in the neck reported here are very rare. Awareness of these venous variations is vital for the surgeons to avoid any intraoperative trial or error during surgical procedures and to prevent unnecessary bleeding.

Abbreviations list

EJV, external jugular vein

References


Figure 1: Dissection of neck showing variant venous drainage pattern. RMV, Retromandibular Vein; AD, Anterior division of RMV; PD, Posterior division of RMV; FV, Facial vein; CFV, Common Facial Vein; IJV, Internal Jugular Vein; AJV, Anterior Jugular Vein.