Research Paper

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Duplicate Condylar Canal-A Case Report with Clinical Implications

Medical Science

KEYWORDS : Posterior condylar canal, skull, Radiologists, Anatomists

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ABSTRACT

Posterior condylar canal is one of the largest and inconsistent emissary foramen in human skull. It can be single or multiple. It transmits posterior condylar vein and branch of ascending pharyngeal or occipital artery. During osteology demonstration class of undergraduate MBBS students, a skull was found to have a double condylar canal on right side .Knowledge of this anatomical variation is utmost important for clinicians,radiologists and anatomists.

INTRODUCTION:-

Foramen magnum is the largest foramen of the skull. It is bound anteriorly by the basilar part, laterally by the occipital condyles and squamous part of occipital bone posteriorly.Posterior to the occipital condyles ,there lies condylar fossa which lodges the superior articular facet of atlas[1].Occasionally condylar fossa presents posterior condylar canal which transmits an emissary vein called posterior condylar vein that connects sigmoid sinus with the suboccipital venous plexus. This vein communicates anteriorly with jugular bulb and posteriorly with the vertebral venous plexus. It also transmits nerves that supply the duramater of posterior cranial fossa[1,2]. Clinically these venous channels acts as an alternative channel for venous drainage and can enlarge secondary to vascular malformations.It can also act as conduit for spread of infections[3]. There are reported cases of dural arteriovenous fistulas of posterior condylar vein[4].Lateral transcondylar approach is done in skull base surgeries which involves extensive dissection and may cause injury to the neurovascular structures[5]. Therefore knowledge of variations in posterior condylar canal is to be studied before any procedure. Present paper describes a case of double condylar canal with its clinical significance.

CASE REPORT:-

During routine study of bones for 1 MBBS students In the Department of Anatomy,Yenepoya Medical College, Out of 50 skulls we came across a skull having double condylar canal on the right side and absence of canal on the left side(Fig1).The vertical and horizontal diameter of the proximal canal was 5mm and 4mm respectively. The vertical and horizontal diameter of the distal canal was 4mm and 3mm respectively. No other abnormalities were observed on the above skull.

DISCUSSION:

Berge and Bergman reported that doube condylar canal was found in 6 of 144 foramina (4%) and tripled in one case6.Condylar emissary vein is a valve less vein that traverses the condylar canal of occipital bone and which connects the endovenous systems and exocranial systems5.When there is a change from fetal to neonatal circulation, venous system atrophies accompanied by bony canal closure.Persistence of these bony canals may be the cause for presence of double condylar canal. Clinical significance of these canals is that any metastasis or infection in the suboccipital region or cervical spine can be transmitted through this venous network7.The condylar canal also transmits a branch of ascending pharyngeal artery or occipital artery which can affect any surgical intervention in this region. Any variations in the posterior condylar canal may be associated with variations in posterior condylar vein and can be wrongly considered as pathological3.So this anatomical variation is of utmost importance for radiologists to avoid misinterpretation in imaging studies, when considering endovascular treatments for posterior fossa dural arteriovenous fistulas and in sub occipital craniotomy.

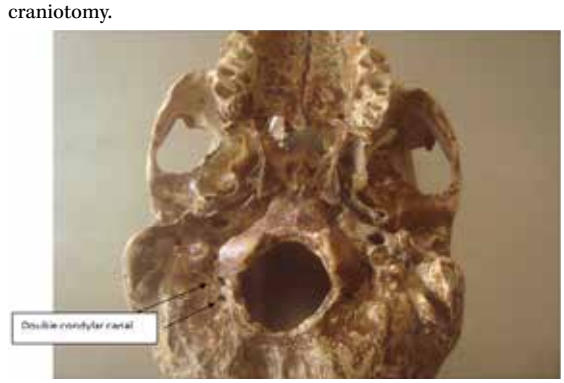

Fig1:-Presence of double condylar canal on right side

CONCLUSION:-

Understanding normal anatomy and its variations is of clinical importance when considering endovascular treatments for posterior fossa dural arteriovenous fistulas. Recognition of This variant will prevent misunderstanding of radiographs because it can be confused with glomus jugulare tumor or calcified lymph node.

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