INTRODUCTION
The middle cranial fossa of cranial cavity is mainly formed by the sphenoid bone. The body of sphenoid is a pneumatic bone lodging pituitary gland. On either side of the body of sphenoid, cavernous sinus is present allowing the passage of internal carotid artery and 3,4,6 cranial nerves. These are important neurovascular structures of eyeball. The sphenoid contains three sloping bony projections in the form of anterior clinoid process (ACP) from the medial end of lesser wing, middle clinoid process (MCP) from tuberculum sellae and posterior clinoid process (PCP) from dorsum sella. These clinoid processes are connected by ligaments or duralfolds. In some occasions there is ossification of these structures leading to foramen formation compromising the structures that are passing through cavernous sinus. The present study observed carotido-clinoid foramen (CCF) that was due to ossification of ligaments between anterior and middle clinoid process on the left side. The foramen was circular measuring 0.55 cm. (fig.1)

Observations
One skull showed unilateral carotido clinoid foramen on the left side of body of the sphenoid bone. This was due to ossification of ligament between anterior and middle clinoid process on the left. The foramen was circular measuring 0.55 cm. (fig.1)

Discussion
Normally the clinoid processes of sphenoid bone are connected by ligaments that are not seen in dry skulls. Ossification of ligaments of clinoid process of sphenoid bone give rise to bony ridges. An osseus bridge between ACP&MCP forms CCF that was first described by Henle. This foramen is known as foramen clinoideo caroticum as described by Dubrul(2). Ossification of interclinoid ligament between ACP&PCP forms sella turcica bridge. (3)Das et al described the morphological changes in the clinoid segment of internal carotid artery due to the presence of CCF(1). Desai S.D.study on 223 skull bones described complete and incomplete CCF that are either unilateral or bilateral (4). In this region the calibre of internal carotid artery is more than the CCF. The clinoid bridge would cause pressure on internal carotid artery in the cavernous sinus increasing the possibility of headache & transient ischemic attack. This foramen needs attention due to its relation with cavernous sinus and its contents and an important pituitary gland (5,6). Surgical approaches of this region for tumors or aneurysms need removal of ACP. But in this situation the removal of ACP increases the risk to ICA & occulomotor nerve. Sella turcica bridge or sellar bridge was observed on the left side, which was formed by the ossification of interclinoid ligament that exist between anterior and posterior clinoid process. This bridge limited the hypophyseal fossa on left side. In this skull behind the optic canal, CCF and an accessory foramen was seen. The circular CCF measured 0.5 cm and accessory foramen was 0.4 cm. Anterior clinoid process on the right side was very prominent. (fig.2)

Materials & Methods
The skulls that showed the variations were present in the anatomy museum. The middle cranial fossa was studied in detail. The size of these foramina was measured with digital calipers.

ABSTRACT
Middle cranial fossa is mainly formed by sphenoid bone. It contains three sloping clinoid process. Cavernous sinus with its neurovascular contents are present by the side of body of sphenoid bone. Ossification of ligaments of clinoid process may compress internal carotid artery & occulomotor nerves which are important to the brain and the eyeball. The present variations were found in the skulls that were present in the anatomy museum. One skull showed unilateral carotido-clinoid foramen and in another skull along with carotido clinoid foramen, interclinoid bridge was seen on the left side limiting the pituitary fossa on that side. A small foramen may compress internal carotid artery which is an important source of blood supply to brain. Hence knowledge of these variant foramina is important to undergo preoperative screening to avoid risk during surgery of this region.
region is circumscribed within the ACP&PCP. The sellar bridge formed by ossification of interclinoid ligament can be complete or partial.(7) Interclinoid ligament bisects the wall of cavernous sinus into carotid triangle anteromedially and oculomotor trigone posterolaterally. So ossification of this ligament leading to bridge formation may influence pituitary gland, ophthalmic artery, optic nerve, 3rd & 4th nerves(8,9,10). So these anatomical variations should always be rule out to prevent fatal complications during surgery.

Conclusion

The sphenoid bone that forms the middle cranial fossa is closely related to internal carotid artery, pituitary gland & nerves of extraocular muscles. The ossification of ligaments of clinoidal process of sphenoid may compress ICA leading to transient ischemic attack or headache. So ossification of clinoidal ligaments should be kept in mind during surgical procedures of this region.

References