

SELLAR BRIDGE

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ABSTRACT

Ossification of interclinoid ligament that stretches between anterior clinoid process and posterior clinoid process leads to the formation of sellar bridges. Out of 73 adult skulls and 32 adult sphenoid bones in the department of anatomy, Meenakshi medical & dental college, bilateral complete sellar bridge with bilateral carotico-clinoid foramina in one skull, unilateral left complete sellar bridge in another skull & an incomplete right sellar bridge with left carotico-clinoid foramen in a sphenoid bone were observed. Since it has an important relation with Internal carotid artery and oculomotor nerve, they might compress these structures and lead to clinical problems.

KEY WORDS: Interclinoid ligament, sellar bridge, anterior clinoid process, posterior clinoid process.

INTRODUCTION:

The sellar region is of prime importance to the neurosurgeon as more than one-third of operable lesions occur here¹. There are many variations in the bony surroundings of the pituitary gland due to the complex embryology of the region. Sellar bridges are bony structures running between anterior clinoid process and posterior clinoid process. This is the ossified interclinoid ligament. It can be of complete or incomplete type². It may be present unilaterally or bilaterally. Carotico-clinoid ligament extends between anterior clinoid process and middle clinoid process, when ossified forms carotico-clinoid foramen through which passes the internal carotid artery.

MATERIALS AND METHODS:

Out of 73 adult skulls and 32 adult sphenoid bones in the department of anatomy, Meenakshi medical & dental college various types of sellar bridges were observed in 3 specimens which were photographed and measured by using digital vernier caliper.

OBSERVATIONS:

Skull no.1

Bilateral complete sellar bridges (SB) with bilateral carotico-clinoid foramina were observed. (fig.1)

Length of right SB ---8.4mm

Length of left SB ----6.2mm.

Thickness of bony bars----1mm

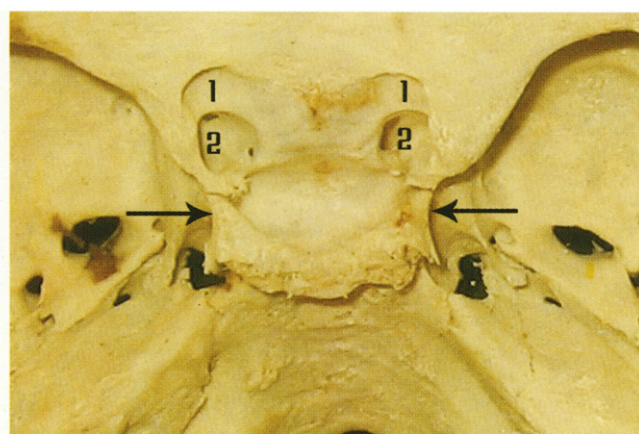


Fig. : Bilateral complete sellar bridges (arrow) with bilateral carotico-clinoid foramina (2) and, Optic canal (1)

Skull no.2

Unilateral left complete sellar bridge was observed. (fig.2)

Length of left SB ---- 5mm

Thickness of bony bar---- 1.5mm

Sphenoid bone no.3

Right incomplete sellar bridge with left carotico-clinoid foramen was observed.(fig.3)

Length of right incomplete SB ----5.7mm Thickness of bony bar----2.4mm A gap of 1mm distance was

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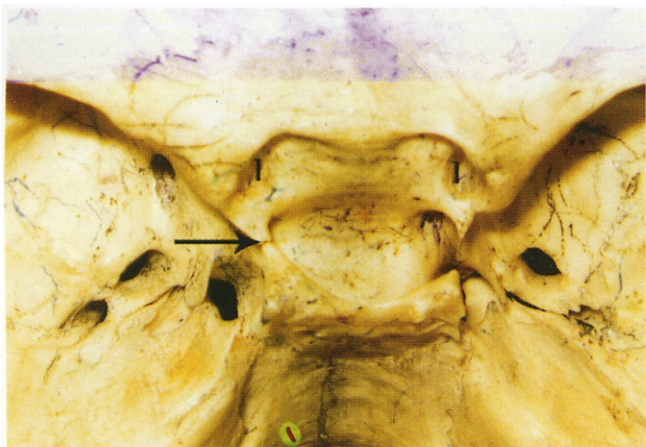


Fig. 2 : Unilateral left complete sellar bridge (arrow).

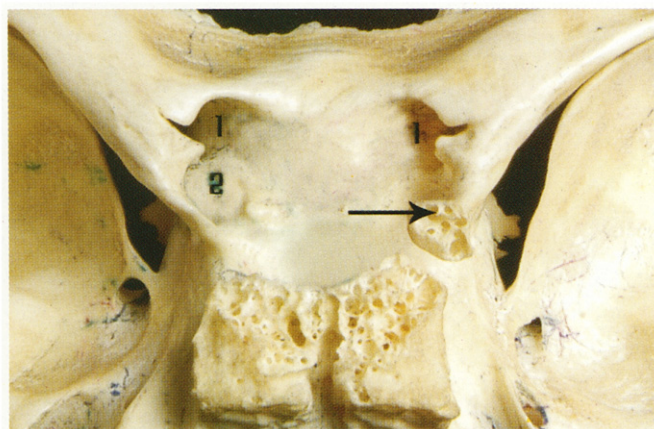


Fig. 3 : Right incomplete sellar bridge (arrow) with left carotico-clinoid foramen (2) and Optic Canal (1)

present between the right posterior clinoid process and the bony bar.

DISCUSSION:

The incidence of interclinoid osseous bridge was evaluated as 8.68% by Keyes³(1935) 5% by Lang⁴ (1977), 4% by Inoue⁵ (1990) and Erturk⁶ (2004) observed it in 8% of Turkish population.

Ozdogmus et al⁷ noted it bilaterally in 6% of autopsy cases. The degree of calcification of the ligament does not vary by gender⁸. Carotico clinoid foramen (complete fusion) was observed in 13% and incomplete fusion was present in 24%⁹.

Anterior clinoid processes serves as a landmark

for the transition of the internal carotid artery from its intracavernous extradural portion to an intradural subarachnoid portion. These bony fusions account for the occasional difficulty in completing an extradural anterior clinoidectomy in the surgery of aneurysms of intracavernous part of internal carotid artery¹⁰.

The relationship between the cranial nerves and the structures adjacent to the cavernous sinus has been organized into a series of anatomical triangles that guide surgical approaches to this region¹⁰. Interclinoid ligament bisects the wall of cavernous sinus, dividing it into two triangles; the carotid trigone anteromedially and the oculomotor trigone posterolaterally. Hence ossification of interclinoid ligament may influence the structures such as internal carotid artery and the oculomotor nerve.

It plays an important role in the surgery of the aneurysms of intracavernous portion of internal carotid artery and also of tuberculum sella meningiomas¹¹.

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