

AN ASYMPTOMATIC FRACTURE OF THE SELLA TURCICA

Case report by

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SUMMARY :

We report the case of patient with fracture of sella turcica. The patient did not developed neurologic, vascular and endocrinologic complications.

KEY WORDS :

Head injury, Sella turcica.

INTRODUCTION

The sella turcica is a region surrounded by important vascular and neural structures. Various changes related to its tumoral and vascular lesions have always drawn attention; however, traumatic fractures of this region are encountered quite rarely. Dublin and Poirier classified sella fractures into three basic types, namely (9): First type: Dorsum sella fracture; second type: sella turcica fracture; third type: sella turcica base fracture together with sphenoid and fractures extending to the clivus.

Due to the involvement of surrounding structures, cranial nerve palsies, vascular can accompany these endocrine abnormalities and CSF fistulas can accompany these traumatic lesions (2,3,11,14). In this paper, an asymptomatic case with multiple fractures of the face and a sella turcica fracture as a consequence of maxillo-facial trauma is presented.

CASE REPORT

A male patient, 38 years old, was admitted to hospital with maxillo-facial injuries due to a traffic accident. Information gained revealed that the patient was asleep in a bus at the time of the crash. The patient was fully conscious at the time of physical and neurological examination which disclosed multiple surface cuts on the face, perforation of the right eyeball and total loss of vision on that side. No other abnormality was present, other than racoon eye sign bilaterally.

Of the radiological examinations, sella spot, sella tomography, paranasal sinus graphies, orbita and optic foramen graphies were carried out and planum sphenoidale, sella turcica and dorsum sella (Fig. 1) were observed together with mandibula left condyl and

sympis fractures. In addition two lines of fracture starting from the right orbital margin and continuing in the maxilla were noticed (Fig. 2).

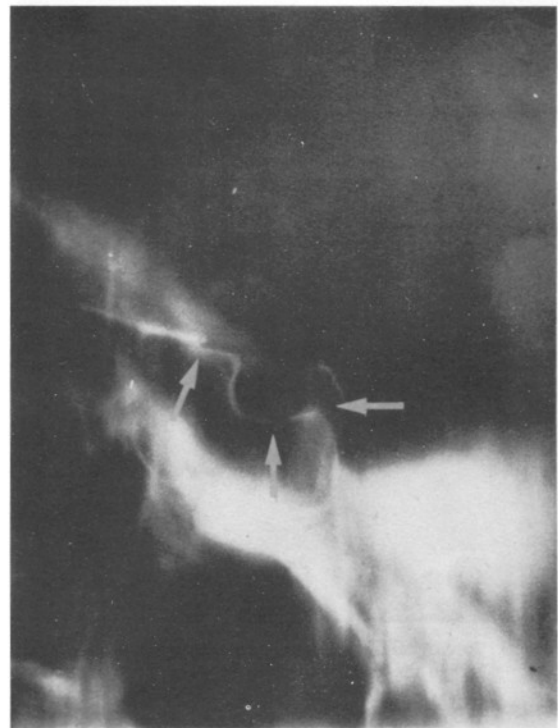


Figure 1 : Lateral tomogram shows fractures of planum sphenoidale, base of sella turcica and dorsum sella.

CT findings revealed images of fractures on both ethmoids as well as the base and the side walls of the sphenoid. Intrathecal administration of iohexol to display a possible CSF fistula showed that the contrast material entered the sella turcica but not the sphenoid sinus through the fracture lines (Fig. 3).



Figure 2: Water's view shows multiple fractures in the lateral and inferior aspects of the right orbit involving the maxilla.

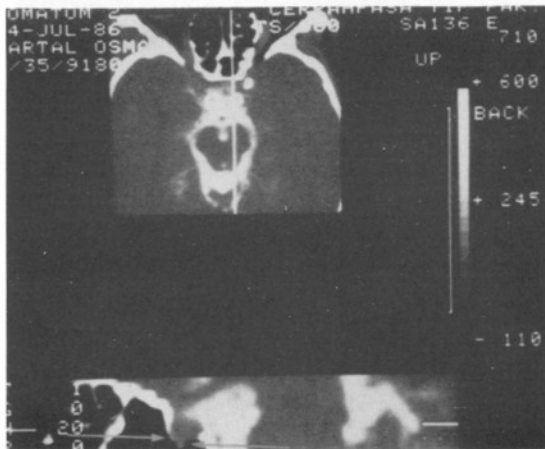


Figure 3: Parasagittal reconstruction demonstrates a large bony defect in the base of the sella turcica with protrusion of sellar contents into the sphenoid sinus. Dural tear and CSF leakage was not identified on CT.

Test for GH, cortisol, prolactin, T3, T4, at endocrinological examination were carried out and it was noticed that the prolactin level was 15 ng (N0.2-0.4 ng/ml) despite the lack of clinical findings. All consecutive prolactin controls showed approximately the same results.

No neurosurgical attempt was made. Arch-barr was applied for the mandibula arm and maxilla frac-

tures also keratoplasty was carried out on the right eye.

DISCUSSION

Figures in the literature regarding the incidence of sella turcica fractures have been extensively varied. Kojima et al (15) Dublin, Poirler (9) point out this incidence to be 1% out of 282 patients and 1.4% out of 350 patients respectively who had suffered from head injuries. However, Ortega and Longridge (18) indicated that the rate of fractures passing through the sella turcica fractures. These authors share the opinion that the cause of death in these cases is related to the severe trauma sustained. Sella turcica fractures develop as a consequence of frontal and maxillo-facial traumas (1). According to Carlson (4), fractures occur through either a penetrating blow exerted on this region or at the level of the sphenoid sinus, caused by a mandibula arm coming to the midline due to lateral shifting of the bone.

Young et al (21) divided sella turcica fractures into 5 types depending on their occurrence.

I. type: Maxillo facial trauma occurring at 1/3 mid of the face could press the facial bones over the sphenoid.

II. type: This type may develop as a consequence of the propagation of a frontobasal fracture line arising from antero-posterior or lateral-medial frontal trauma.

III. type: Fracture line occurring as a result of parietal and parietotemporal trauma may reach the sella in the middle cranial fossa after extending beyond the petrous bone.

IV. type: Fractures which develop from occipital traumas that reach the sella via foramen magnum and clivus.

V. type: This is a very seldom encountered isolated type of sella turcica fracture, the anterior clinoid and dorsum sella are conjointly affected.

In our case, the exact circumstances of the accident are not known. However, the various fractures on the face bones simultaneous with the sella turcica fracture seem to suggest that our case is of type I, after a complete conventional radiological examination. The patient also underwent an intrathecal contrast CT scan to eliminate the possibility of a CSF fistula.

Engels states that conventional X-ray methods provide valuable information (10). However, in the 48 postmortem cases studied by Ortega and Longridge, no sella fractures were observed in antemortem films (18).

As a result of sella turcica fractures, the anterior and posterior group vascular structures located at the cranial base may be affected. Further, consequences of this phenomenon may be affected. Further, consequences of this phenomenon may be carotico-cavernous fistulas (8,21), spasm of the intra-cavernous portion of the internal carotid artery or occlusion of the basilar artery (17).

Young et al suggest four-channelled angiography in regard to the above mentioned facts, in these patients (21). The asymptomatic nature of our case led us to avoid an invasive method like angiography. There were no cranial nerve findings and eventhough one fracture line passed at the level of the planum sphenoidale, the optic nerves were not affected with fractures of the clinoid process, direct optic nerve injuries or ophthalmological findings arising from chiasmatic haematoma may develop (10,16,19). Dublin and Poirier also encountered 3rd and 6th nerve palsies, in three cases out of 14 (18). In addition, in fractures extending to the petrous bone 7th and 8th nerve palsies may be evident.

In patients with severe head injuries, endocrine disturbances may also be encountered. Dublin and Poirier, Witter and Tasher and others found 15 patients with permanent findings of insufficiency due to anterior pituitary involvement; diabetes insipidus was even more frequent (5,6,7,9,12,13,20). In the endocrinological examination of our case, the level of prolactin were found to be above the normal values. The existence of such an isolated disturbance has suggests that this finding was coincidental.

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