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OCCIPITAL WAR TRAUMA AND VISUAL FIELD DEFECTS

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SUMMARY:

Seven cases of visual field defects, caused by war-trauma were seen at Farabi Eye Hospital. None were referred by a neurologist. Four patients had 20/20 visions with normal fundi. One had 12/20, in both eyes, with normal fundi. Two patients presented fundus changes. The visual field defects were seen in all these seven patients. Four had homonymous hemianopia, one had bilateral field restriction, one patient had homonymous quadrianopia, one had unilateral restriction of the visual field, and the last one had bilateral loss of the inferior fields. The Cat-scan of six patients indicated the lesion of occiput and occipital lobe. One paticnt had a diffuse cerebral lesion.

CASE REPORTS:

Case 1:

N.F., a 20 year old male, referred complaining of

unintentional collision with objects. He was the victim of a war-blast with loss of consciousness, five months prior to consultation.

General examination revealed a defect of the right occiput. Ocular investigation showed, the visual acuity of both sides to be 12/20 E. Visual fields indicated restrictions with superior left homonymous quadrianopia (Fig 1). The Cat-scan showed defects of the right occipital zone. The fundi were normal.

Case 2:

M.A., a 16 year old male, complaining of blurred vision of the left eye. He had lost consciousness and had been aphasic for 15 days, following a blast shock, 1,5 month prior to this date.

General examination revealed the right hand paresia. At the ocular examination, he presented 20/20 E of visions. There was a severe restriction of the left visual field (Fig. 2 A). The right fundus was normal,the left fundus showed hyperaemia of the disc and perivascular infiltration arround the disc. The Cat-scan showed defect of the left occipital region (Fig 2 B).

Case 3:

Y.A., a 22 year old male, referred for blurred vision and metamorphopsia. He was victim of a war trauma with loss of consciousness, 6 months prior to consultation.

General examination indicated a defect of the right occiput, confirmed by Cat-scan (Fig 3). At the ophthalmoscopic investigation, the vision of both eyes was 20/20 E. He presented a homonymous hemianopia, and the fundi were normal.

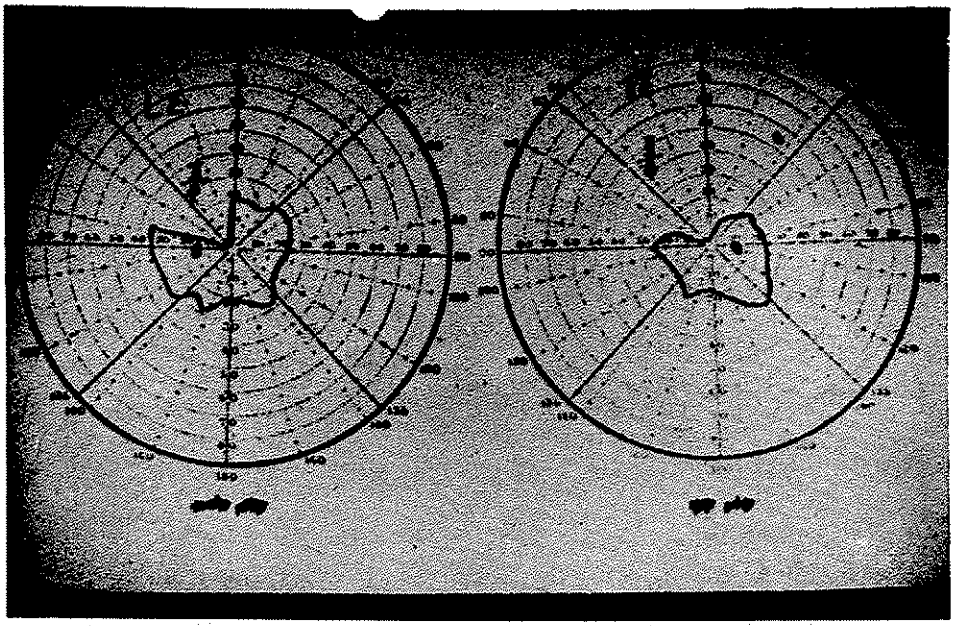
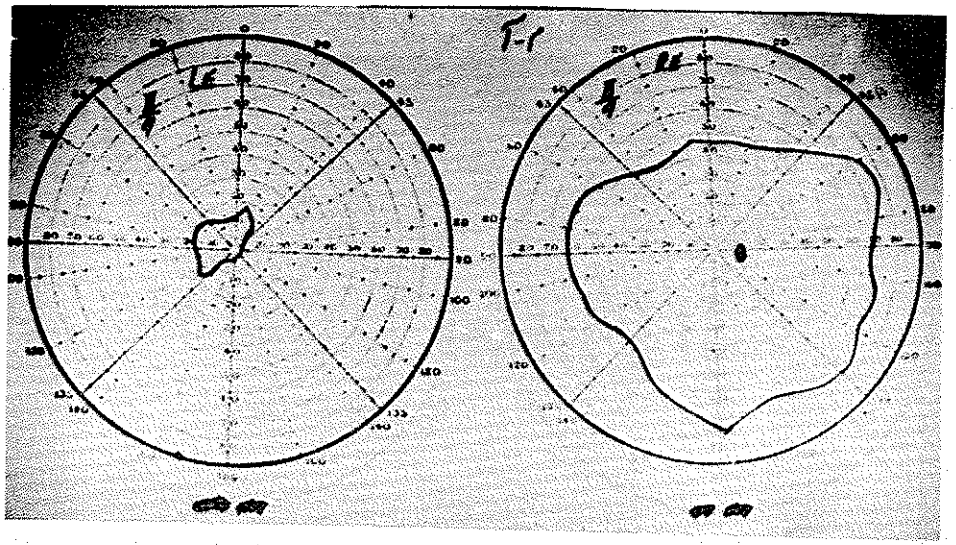


Fig 1: Visual fields indicating a bilateral restriction with superior left homonymous quadrianopia. He presented the right occipital lesions.



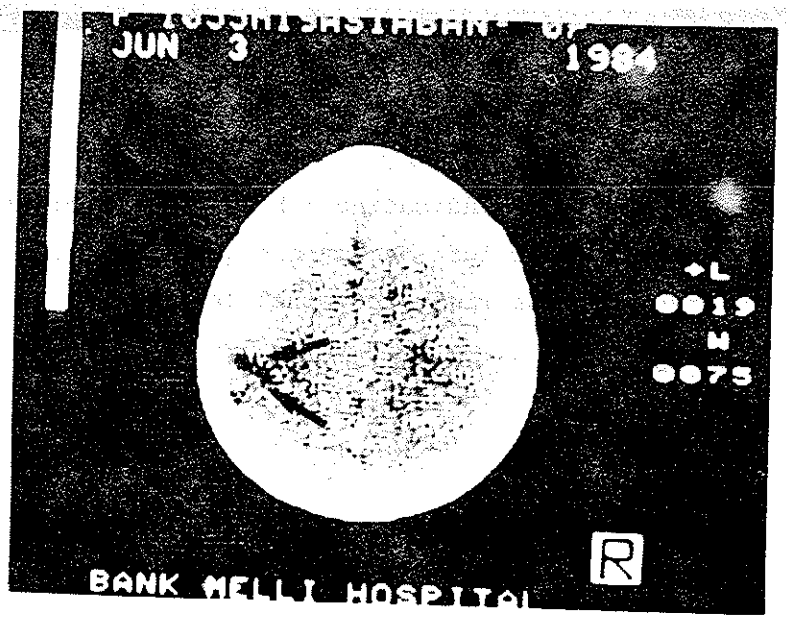


Fig. 2: A- Visual fields indicating a severe restriction at the left side. B- The cat-scan showing defect of the left occipital region.

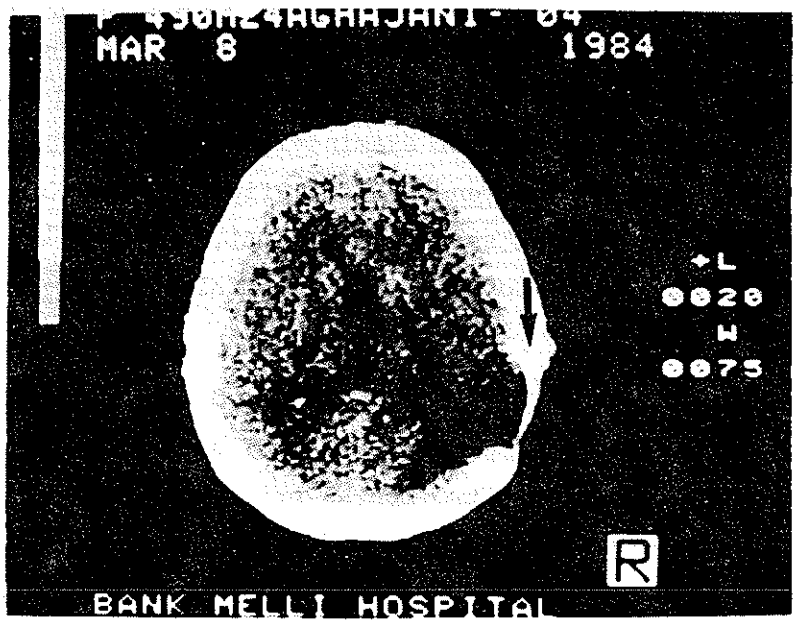


Fig 3: CT Scan showing the right occipital lesions (small arrows). An important occipital bone defect is also evident (arrow). This patient had a left homonymous hemianopia.

Case 4:

Z. Kh., 24 year old male, consulted for restriction of the inferior visual fields which was consequence of a war blast, with loss of consciousness, 6 months prior to this date.

General examination showed a bone defect of the right occiput. The patient was amnesic and complained of numbness of the forhead. Ocular examination revealed 20/20E of visions and normal fundi. Visual fields showed restriction of the inferior sectors (Fig 4 A). The Cat- scan (Fig 4 B) showed lesions of the occipital lobes.

Case 5:

Sh.V., a man of 24 years, complained of a blurred vision of the left eye. He was victim of a war-blast and loss of consciousness, two months prior to consultation.

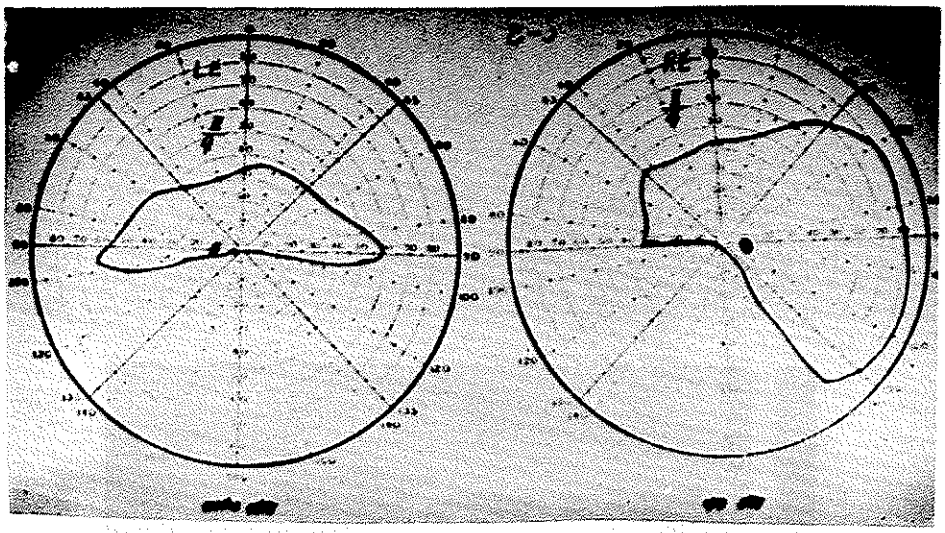
General examination indicated defects of the temporal and occipital bones. He presented right hemiparesia and anesthesia and discrete aphasia. Ocular examination showed visual acuity of 20/20 E of the right eye and 1/20 E of the left. He had right homonymous hemianopia(Fig 5 A). The right fundus was normal. There was a scar on the left macula . The cat-scan showed, left temporo-occipital lesions (Fig 5 B).

Case 6:

G.V., a 20 year old male, referred for a blurred vision. He had lost consciousness following a war-blast, two years prior to this date.

General examination showed the vision of the right eye 12/20E and the left eye 16/20E. The investigation of the fundi indicated the excavation of the discs(RE6/10,

LE 3/10). The intraocular pressures were normal. The patient had no refractive error. He presented a right homonymous hemianopia (Fig 6 A). The Cat-scan indicated the lesion of the left occipital lobe(Fig 6 B).



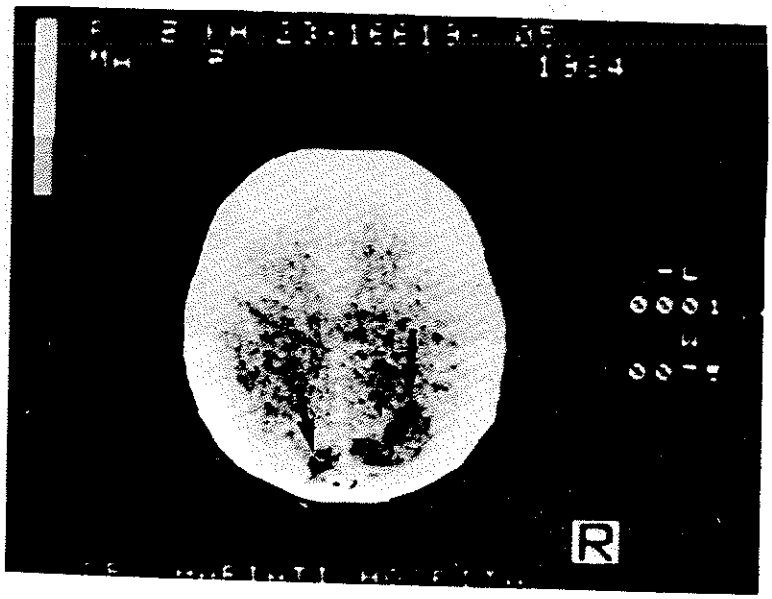
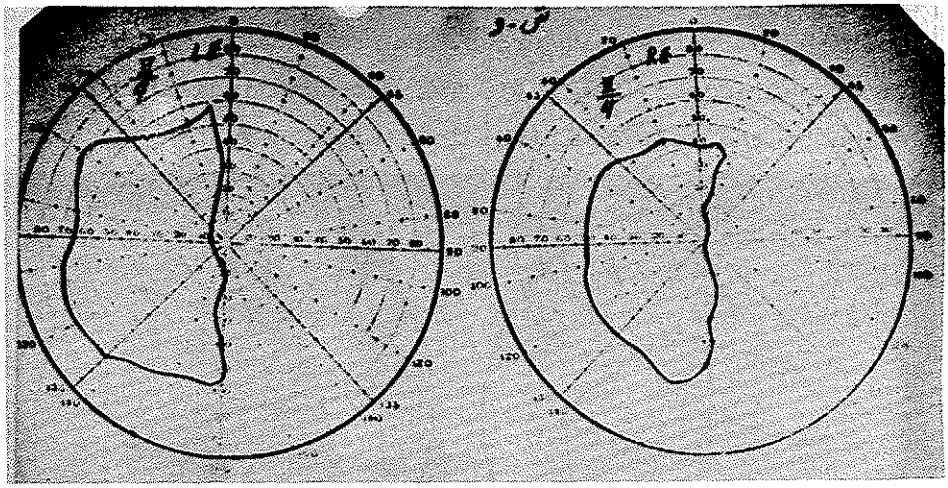


Fig 4:A-Visual fields showing an important defect at the inferior part of the left field and defect of the infero-nasal sector of the right. B-CT Scan showing occipital lobes leions (arrows).



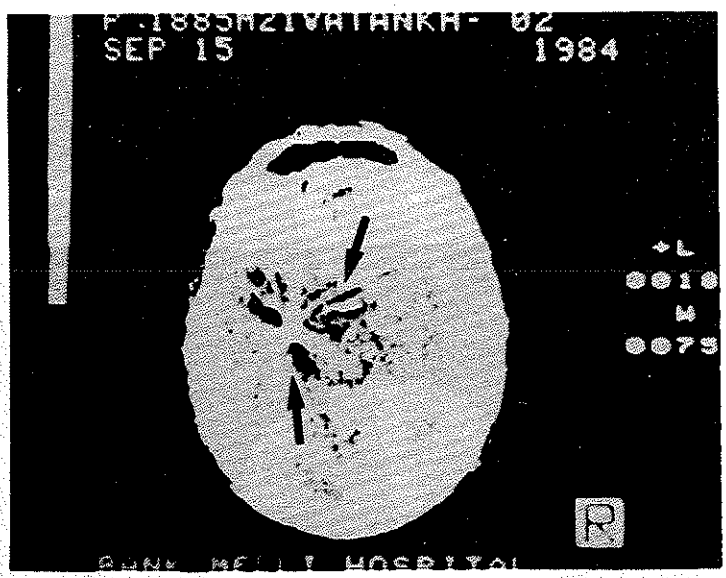
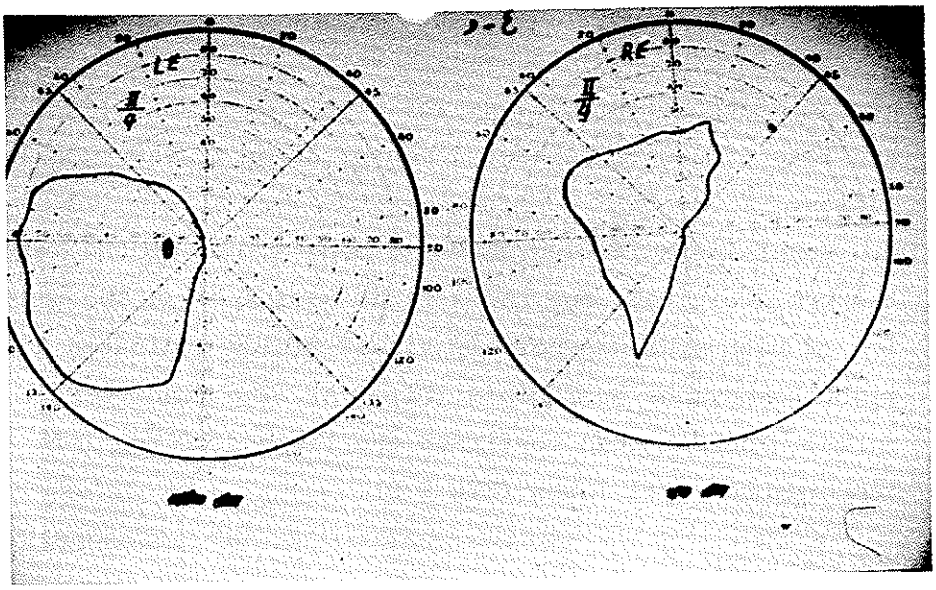


Fig 5: A- Visual fields indicating a right homonymous hemianopia.
B-CT Scan of the same patient showing the left temporo-occipital lesions (arrows).



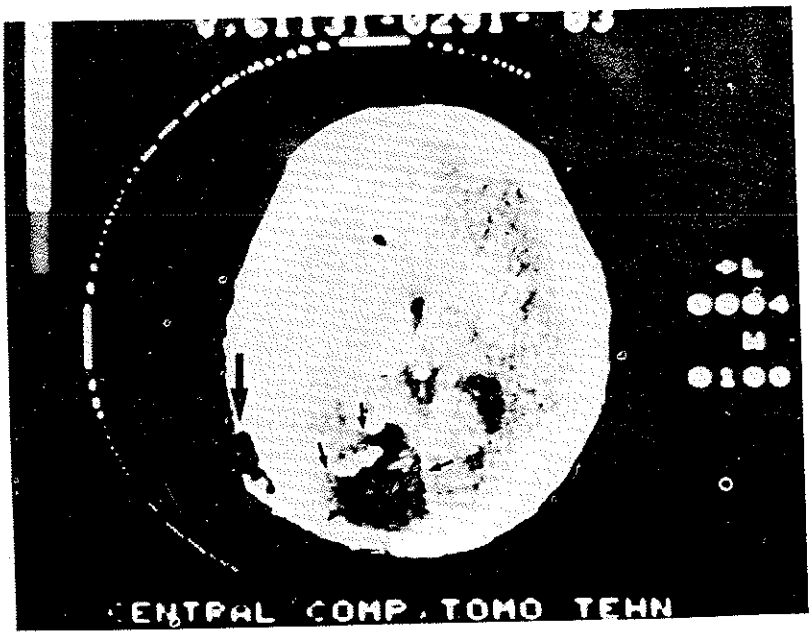


Fig 6: A- Visual fields indicating a right homonymous hemianopia.
B- CT Scan of the same patient showing left occipital lobe's lesions (small arrows) and occipital bone defects (arrow).

DISCUSSION:

In the visual pathway, postchiasmal lesions(lesion of optic tract, lateral geniculate body, optic radiations and the striate cortex of the occipital lobe)usually produce homonymous hemianopia of the visual fields(1). The hemianopia of the occipital lobe is contrary to the lesions of other segments of the visual pathway meticulously symmetrical and congrous. Equally characteristic of occipital lesions is absence of neurologic symptoms.

The characteristic sign of the lesions of the posterior part of the occipital lobe is involvement of the point of fixation and homonymous paracentral scotomas (2). Bilateral lesion of the occipital lobes may cause complete loss of vision, called cortical blindness (3).Injuries to the lower part of the visual cortex are usually fatal due to involvement of the large venous sinuses(4).

The combination of associated signs and symptoms are usually sufficiant to differentiate the occipital lesions from the lesions of the other sectors of the visual pathway.

In 1962, Smith (5) reported on the causes of homonymous hemianopia, in 100 patients. Almost 40% of patients had occipital lesions, 33% had parietal lobe lesions,24 % had temporal lobe lesions. Optic tract and lateral geniculate lesions were rare.

The most common cause of occipital lesion is vascular. traumas are relatively a frequent element of occipital lesion (6). Depressed fracture of the occiput with bone spicule penetration of the dura is a common injury in war wounds. Trauma may cause a direct lesion of the occi-

pital lobe or indirect compression by hematoma, edema, causing ischemia and dysfonction of the brain. In all these cases, complete blindness, homonymous hemianopia, central or paracentral scotoma can be the end-result. Here we have investigated seven patients with traumatic occipital lesions causing visual field defects.

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