past six months, fracture of the occipital bone was found in 18 patients, 11 of whom had complications. There were 3 cases of extradural hematoma in this region which were found by retrograde brachial cerebral angiography; removal of clots was followed by complete recovery in all cases.

Posterior fossa subdural hygroma occurred in 5 cases and all survived. After prolonged stupor supratentorial and infratentorial subdural hygroma was evacuated successfully in 2 patients who had no occipital bone fracture. Although attention has been focused on the supratentorial space so far, similar attention should be given to the posterior fossa.

Discussion to 1-14.

Posterior Fossa Extradural Hematoma demonstrated by Percutaneous Direct Vertebral Angiography

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Posterior fossa hematoma will quickly lead to death unless the diagnosis is suspected early and surgical treatment undertaken promptly. But its clinical diagnosis is frequently difficult because of absence of focal signs and rapid course of deterioration.

We have treated a patient with a posterior fossa extradural hematoma that was diagnosed preoperatively by percutaneous direct vertebral angiography.

The patient was a 40-year-old man who was brought to our hospital in stuporous state 48 hours after a fall. X-rays of the skull showed a depressed fracture of the right occipital region which extended across the transverse sinus.

On the right vertebral angiography the lateral view revealed upward deviation of the posterior cerebral and the superior cerebellar arteries and displacement of the inferior cerebellar superficial arteries forward as well as from the inner table of the floor of the posterior fossa up to 2.0 cm compared to their corresponding arteries on the left side, as shown in the figure.

About 100 g of extradural clots, probably having arisen from the transverse sinus, were removed surgically. The patient began to improve slowly after operation. He returned to his usual work 3 months later without sequelae.

This case demonstrates that unilateral posterior fossa hematoma can be readily visualized by vertebral angiography. The knowledge on a precise localization of the lesion can be of great assistance to the surgeon in planning his surgical attack.

We believe that our technique of percutaneous direct vertebral angiography is particularly useful in emergency cases because the technique is easy under general anesthesia and instruments can be the same as those of carotid angiography.

1-17. A Study of Head Injured Patients, Performing Osteoplastic Craniotomy

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In our hospital, the osteoplastic craniotomy was performed for 49 head injured patients (ages from 3 to 66 years) for about 12 years.

These head injuries frequently caused by traffic accidents.

Summary of pathologic conditions in craniocerebral trauma were:

Skull

Depressed fracture 10 cases

Intracranial contents

Epidural hematoma 7 cases

Subdural hematoma 19 cases

Epi- and subdural hematoma 4 cases

Intracerebral hematoma 1 case

Subdural hydroma 6 cases

Traumatic epilepsy 1 case

Infection

Brain abscess 1 case

In space expanding lesion, acute, subacute and chronic forms were 22, 6 and 9 cases.

The space in which hematoma and hydroma occupied were all supratentorial regions.

The skull fracture was observed in 85.7% of epidural hematoma and in