Calcified intracranial haematoma associated with chronic subdural hygroma

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Bulging of a hemicranium and thinning of the temporal bone are encountered in some space-occupying processes, of neoplastic or parasitic origin, in subdural hygromas, in infantile encephalopathies, etc., and always require supplementary investigations for their discovery and adequate surgical solution.

In hygromas, there is a scarcity of neurological signs, and a slightly delayed psychical development may be the only clinical symptom associated with the cranial deformity.

The present case—association of a calcified inter-hemispheric cerebral haematoma and a subdural hygroma occupying almost half the hemisphere—is extremely rare. It represents two evolutive aspects of an intracranial blood effusion, following upon a forgotten skull injury, at birth or during early childhood.

CASE REPORT

The patient, I.V., a woman aged 22, was admitted in February 1966 with a history of headaches for several years and bulging of the right temporal region since childhood. She did not remember any head injury in childhood. The family said she had been slow in learning at school (six years for her first four elementary classes).

Presenting signs were bulging of the right temporal fossa and psychical retardation; neurological findings and oculcar examinations were within normal limits.

Radiograph of the skull revealed, apart from bulging and thinning of the right temporal squama, an irregular calcification measuring 9 cm along vertical lines, 3 cm along the frontal plane, and 3.5 cm in the sagittal plane. This lay between the hemispheres in the posterior left half of the skull posteriorly oblique and slightly concave to the right, moulding the falx cerebri on the left and extending from the vault down to the base of the skull, the pineal gland being displaced to the left (Fig. 1).

Suboccipital pneumoencephalography pointed to displacement of the left ventricular system to the left and inbending of the right lateral ventricle.

Right carotid arteriography revealed an almost vertical course of the first portion of the right Sylvian artery, the presence of an avascular area in the right fronto-temporo-parietal region about three finger widths and the absence of filling of the anterior cerebral artery (Fig. 2).

The presumptive diagnosis of chronic subdural hygroma of the right hemisphere was confirmed operatively. A right temporo-frontal flap was carried out (the temporal bone was papyraceous) and revealed a giant subdural hygroma (350 ml. of clear fluid) in a thick capsule, which was easily detached from the dura mater but could not be separated from the pia mater. It spread throughout the whole right hemisphere in an anteroposterior direction and down to the carotid siphon along the midline; over the convexity it extended up to three finger widths from the longitudinal sinus. The right cerebral hemisphere was completely atrophied and occupied only one third of the right hemicranium. No communication could be established between the fluid cavity of the hygroma and the subarachnoid spaces.

The post-operative evolution was normal. Control arteriography performed a month after the operation showed the same aspect as on admission, showing that renewed expansion of the right cerebral hemisphere, compressed by the hygroma, had not occurred.

DISCUSSION

The subdural hygroma in the right hemisphere had had a slow evolution since birth or early childhood. Bulging of the right temporal squama, the absence of neurological signs, raised intracranial pressure and the thickness of the hygroma capsule testify to this. The hygroma was initially a subdural haematoma, whose evolution was arrested at a given moment. Clarification of the content of a chronic subdural haematoma, taking on the aspect of a hygroma, is one mode of evolution, just as calcification is another mode of evolution.

Interhemispheric calcification was produced by an older interhemispheric haematoma adherent to the falx cerebri. Right curvature of the interhemispheric calcification and displacement of the pineal body and of the entire ventricular system towards the left might be explained by the pressure exercised by the subdural collection upon the right cerebral hemisphere.
Initially in our case there were two blood effusions: a subdural and an interhemispheric one, with a different evolution in time, one being transformed into a hygroma and the other being calcified.

The presence of a hygroma and of a haematoma dating from birth or childhood, although no decisive injury could be incriminated, is proof of the traumatic aetiology of the hygroma. There can be no question of infection at the origin of the hygroma since this could not account for the calcified haematoma.

According to most statistics, multiple intracranial blood effusions are not so rare (10%).

The chronic evolution of blood effusions in the young whose brain can adapt itself without responding by intracranial pressure is well known: interhemispheric haematomas (extremely rare) and intraparenchymatous haematomas become calcified, whereas subdural haematomas in the whole hemisphere or basal haematomas are transformed into hygromas in the course of time.

This is an eloquent example of the connection
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between an old subdural haematoma and a hygroma, a fact also foreseen and timidly asserted by Paillas, Bonnal, Berard-Badier, and Dahl in 1959.

As regards the efficacy of surgery in hygromas detected late, this depends upon the degree of gliosis of the brain (due to the chronic compression) and the possibility of re-establishing a communication between the hygroma pouch and the subarachnoid spaces.

CONCLUSIONS

In the presence of a temporal swelling in children, with or without neurological or psychical signs, a subdural hygroma should be kept in mind. Paraclinical examinations are necessary to elucidate the diagnosis (radiograph of the skull, arteriography, pneumography, EEG, and echoencephalography).

Multiple blood effusions are seldom encountered; they denote a traumatic aetiology.

An early diagnosis results in an adequate treatment and saves the patient from severe neurological and psychological sequelae.

SUMMARY

With reference to a rare case of calcified interhemispheric haematoma associated with chronic subdural hygroma in a cerebral hemisphere, considerations of a clinical, pathological, and therapeutic order are made, asserting the possibility of associated blood effusions, with a different evolution in terms of their location, in the same patient.

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