Chronic Calcified Subdural Hematoma

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CHRONIC calcified subdural hematoma is a rare and infrequent entity. The radiological findings are typical and might even be considered pathognomonic. Goldhahn[1] reported the first case of calcified subdural hematoma in 1930. It was in an 11 year old child with the typical dense shadow of calcification under the cranial vault on the left side, asymmetrical enlargement of the opposite side of the cranium and dense thickened bone on the ipsilateral side. Dilatation of the sinuses on the side of the lesion and hemiatrophy of the brain substance on the same side were also noted. Subsequent to Goldhahn's original description, other cases were reported. Mosberg and Smith[2] reviewed the literature in 1952 and reported finding 20 cases to which they added one of their own. MacLean and Levy[3] added an additional case in 1955. Since no additional cases have been reported in over ten years, the authors felt it would be of value to report the present case along with a review of the subject.

In some of the reported cases, there has been an antecedent history of cranial injury or illness in childhood of many years preceding the discovery of the skull findings. This has led to the theory that the radiological findings in the examination of the skull are the result of a progressive series of physiological and anatomical changes. In children, trauma can frequently go undetected especially in the very young. The increased intracranial pressure caused by the clot causes hemiatrophy of the brain on the involved side and some enlargement of the skull and middle fossa. As the hematoma shrinks, the skull responds to the decreased intracranial pressure with a thickening of the bone overlying the hematoma and hypertrophy of the underlying frontal sinuses and ethmoid air cells.[4-6] The hematoma then progresses to the stages of organization and calcification (and in some cases ossification). It has been postulated that the adult skull also shows this lability of structure and capacity for compensation.[3]

The roentgenological findings in these cases have consisted of a typical calcific density, crescentic and irregular in nature, which is noted in a routine plain film of the skull.[2] There is an associated asymmetry of the cranial vault. Other findings include enlargement of the frontal and ethmoid sinuses on the side of the lesion and occasional enlargement of the mastoid air cells. There is thickening of the bony table overlying the lesion with increased density of the bone. Further examination using more sophisticated radiological techniques such as tomography, pneumoencephalography and cerebral angiography have confirmed the anatomical changes. Tomography reveals the separation of the calcified membrane from the inner surface of the cranial vault. The hypertrophy of the overlying bone is more dramatically revealed along with the increased size of the sinuses on the involved side. Pneumoencephalography reveals dilatation of the ventricular system on the side of the calcified subdural hematoma and shift of the system usually toward the side of the lesion.[4, 5]

Cerebral angiography reveals shift of the superior sagittal sinus and midline systems toward the side of the calcified subdural hematoma (thought to be secondary to the hemiatrophy of the corresponding hemisphere).

The patients in all of the reported cases have sought medical attention years after the precipitating injury or illness for symptoms usually unrelated to the calcified subdural hematoma. Because of this, it is dangerous and unwarranted to ascribe all of the patients presenting symptoms and any unexpected findings to the calcified subdural hematoma, McLean and Levy warn that it is important to seek

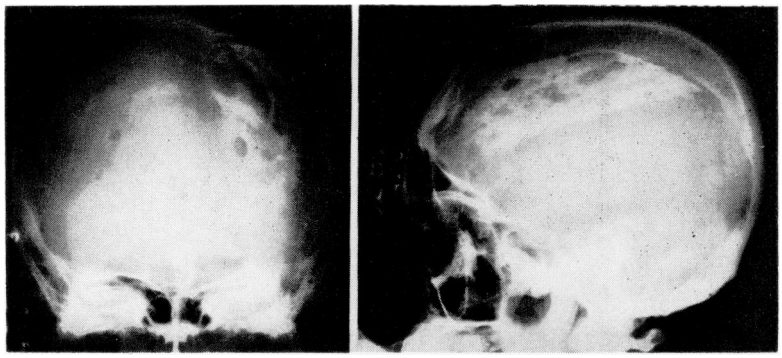

Fig. 1. Routine anteroposterior and lateral radiographs of the skull reveal the typical calcific wedge shaped density and skull asymmetry.

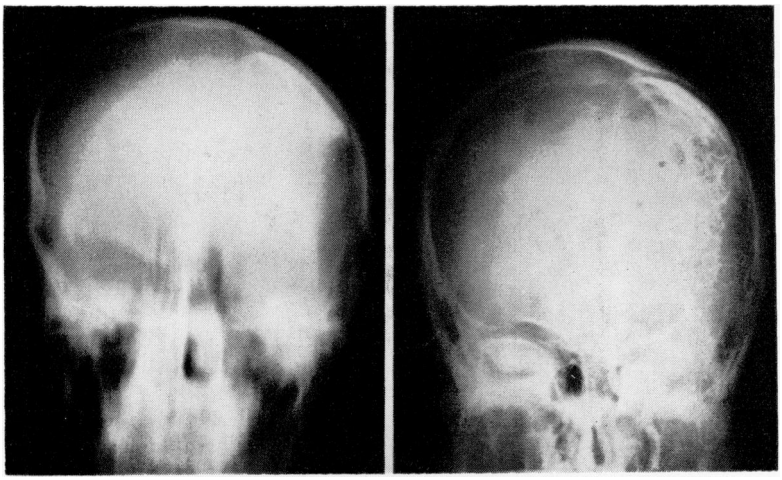

Fig. 2. (left) Tomographic sectional radiograph of the skull reveals a separation of the calcific plaque from the inner table of the skull. The thickened dense overlying bone is also demonstrated and the asymmetry of the cranium is apparent.

Fig. 3. (right) Angiography of the skull shows a vascular shift away from the midline and an associated cerebral hemiatrophy.

other causes for the presenting complaints.[3]

CASE REPORT

The patient was a 47-year-old white male veteran who was refused hospitalization at BVAH at the regional office for a history of dizzy spells preceded by "a funny taste and smell." The dizziness was of short duration and unassociated with the loss of consciousness. At times during the spell "far away soothing music is heard." These spells began in April 1954. In November 1954, the episode was followed by a loss of consciousness. When the patient regained consciousness, he was in the County Hospital. In February 1955, another episode occurred characterized by complete loss of consciousness, tongue biting but no urinary incontinence. According to his wife, he became stiff and exhibited generalized twitching. His eyes were open at times and stared vacantly. He drooled at the mouth and his breathing was heavy and uneven. After five to ten minutes, the attack ceased and he fell into a heavy sleep. He has complaints of constant heaviness of the head since the onset of these attacks.

A past history of thyroidectomy was made in 1942, while in the service, for benign thyroid disease. He was discharged from service with a diagnosis of psychoneurosis. Neurological exam was normal except for a left ankle reflex which was difficult to ellicit. No pathological reflexes were ellicited. Optic fundi were normal. The rest of the physical examination was normal.

His mother states the patient was hit in the head on the left side with an iron at the age of four years. Apparently no significant medical treatment was received following this and no significant symptoms were noted.

EKG	Normal
Spinal Tap	Normal clear fluid
Colloidal Gold	111,000,000 (flat) neg.
Spinal Fuid	Sugar 68
CL 121	Globulin—none
P 27	No cells
CBC 6500	With normal differential
Urine	Normal
Blood Studies	Negative

No family history of epilepsy was ellicited.

The workup revealed the typical radiological findings of a calcified chronic subdural hematoma. EKG, spinal tap and spinal fluid chemistries were normal. All other laboratory findings were normal. The patient was placed on anticonvulsant medication with great improvement. He was subsequently discharged to be followed on an out-patient basis.

The final diagnosis was: 1) temporal lobe epilepsy (idiopathic); 2) calcified subdural hematoma.

SUMMARY AND CONCLUSIONS

A case of calcified chronic subdural hematoma is presented with a review of the typical radiological findings which, along with the history, are pathognomonic.

The authors have attempted to review the development of the entity and to point out the necessity for the use of extreme caution in ascribing the patients presenting symptoms and any unexpected neurological findings to a calcified chronic subdural hematoma.

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NATIONAL BOARD SCORES

Each year an increasing number of medical students, now about three-fourths of all medical students in the United States, take the National Board examinations as candidates or as a school requirement. Medical schools consequently can receive the scores of individual students as well as summary data about the overall performance of their schools. This information can be very useful to each school in providing measures of knowledge and ability, but there exists a danger, which cannot be over-emphasized, of improper use and interpretation of this information.

A general concern about the use of National Board scores was evident at a 1970 Invitational Conference where the use, misuse, and even the availability of this information was discussed. While the participants seemed to favor the retention of numerical scores as opposed to the reporting of a pass or fail only, they emphasized the importance of the proper use of this information. William J. MacDonald, a student from the University of Vermont College of Medicine, who was one of the panelists at this conference, stated: "If we are taking this exam and we do have this information available, it seems to me that it is important that we do get the numbers for whatever they are worth. I think it is going to be up to the individual schools to choose whether they will use them or abuse them."

The National Board "passing" grade for each examination is established for purposes of certification and is not intended to be a criterion (and certainly not the only criterion) for promotion or graduation of any student. In this respect, a pass-fail system would probably be sufficient for some state boards, but other state boards have a statutory requirement for numerical grades. However, a student's scores or subscores can often be helpful when used in conjunction with many factors known to his own faculty. For an individual student, a grade on these examinations may confirm other evidence of satisfactory performance, and thus increase the probable accuracy of a decision reached on a total view of his capabilities. Conversely, a grade out of line with other factors should stimulate thorough review of the student's entire performance and individual record. In any event, a grade which remains deviant is not intended to be used as the sole determinant of the student's fate—in either direction.

The breakdown of a student's performance into subscores should also provide valuable information as to the balance of his background. It may be expected that a candidate's areas of interest will be reflected in his performance, but, and more important, the areas of weakness, perhaps greater than he realized, will also be evident.

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