A CASE OF SUBDURAL HÆMATOMATA

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THE subject of subdural hæmatomata has not found its way into neurological or surgical textbooks to any great extent, and even in works on neural surgery it by no means always finds a place. Percival Bailey¹ indeed refers to these curious posttraumatic cysts, remarking on the fact that they are not so rare as many seem to think, and on their essential curability by surgical means if they can only be diagnosed. One of the best papers on the subject is that of Putnam,² undertaken for the Society of Neurological Surgeons, in which eleven cases are collected and described.

In his introduction to this paper Professor Cushing remarks: 'These subdural hæmatomata are far less rare than is usually supposed. In the majority of cases and perhaps in all they follow on a trauma so insignificant as to be commonly forgotten by the patient or overlooked in the anamnesis. The diagnosis should always be considered in a history of mild trauma followed after a latent interval of surprising length by severe headaches associated with psychoses. If a correct diagnosis is made, the indications for operation are as definite as those for the well-recognized extradural hæmorrhages associated with fracture of the skull. Perfect recovery is to be expected on evacuation of the clot. Continuance or recurrence of the bleeding is unusual.'

In the past this condition was generally included without ætiological differentiation in the category of pachymeningitis hæmorrhagica interna, but in 1914 Wilfred Trotter³ distinguished four traumatic cases, and since then the issue has been considerably clarified.

It seems worth while to quote the conclusions of Putnam's article:—

'An apparently insignificant trauma to the head may in certain individuals be followed, after a latent interval which varies from a few hours to months or even years, by symptoms of cortical irritation and of intracranial pressure due to a subdural hæmatoma. These cases are less rare than formerly supposed.

'Clinically, after a period of headache, these patients show an extraordinary variability of symptoms, particularly in the intellectual sphere. They are prone to psychoses and often become irritable, indecent and unmanageable. Choked disc is apt to be present, and a frontal lobe tumour suspected.

‘At operation or necropsy, a subdural hæmatoma will be found on one or both sides enclosed in a continuous membrane slightly adhering to the dura but not adherent to the pia.

‘The enveloping membrane on the side toward the pia is thin and covered with mesothelium. On the dural side, it is more dense and composed of organizing granulation tissue with large mesothelium-lined spaces containing blood and fibrin which appear to anastomose with each other and with the capillaries.

‘In this respect, the membrane of the traumatic hæmatoma seemingly differs from that of the commonly described pachymeningitis hæmorrhagica interna, in which the thin-walled vessels are enormous, and no mesothelium-lined spaces are seen. Such a pachymeningitic membrane may possibly give rise to hæmatomas, which symptomatically and in the gross resemble the posttraumatic variety.

‘In certain cases in which the onset of symptoms is delayed for only a few days after trauma, it is possible that they may be due to a hæmatoma formed immediately, but which only announces its presence when the brain becomes œdematous or congested.

‘In other cases the occurrence of late hæmorrhages seems probable, and may be due to the formation of communication between the mesothelium-lined spaces and bloodvessels, with rupture of one or the other.

‘The spontaneous pachymeningitis vasculosa may represent a chronic form of the same process. There is no satisfactory evidence that either form is inflammatory or neoplastic.

‘The term reactive pachymeningitis might be used to designate the peculiar process of organization that is evoked by the presence of blood-clot or other collection of fibrin on the inner surface of the dura, and which may possibly give rise to secondary hæmorrhages.

‘When the presence of a subdural hæmatoma is under suspicion, an exploratory craniodural puncture over the hemisphere will give the most reliable evidence of the presence or otherwise of the clot. This should be bilateral, as the lesion is not infrequently bilateral. A lumbar puncture may show a faint xanthochromic fluid, but often the cerebrospinal fluid is negative.

‘If the diagnosis is verified, an osteoplastic resection with reflection of the dura and removal of the more or less organized clot as intact as possible is the procedure of choice, with subsequent painstaking hæmostasis. The removal of the dura on the basis that it is a possible source of further hæmorrhage is unnecessary.

‘Experience tends to show that there need be no fear of reformation of the clot, but that cerebral œdema is apt to occur in the brain released from its long pressure. It consequently may be advisable to combine the osteoplastic exploration with a subtemporal decompression.

‘Should œdema occur, the use of hypertonic saline or the performance of lumbar puncture should perhaps be resorted to before reinvestigation of

the wound, for in no case in the present series at least has the procedure been of use.'

PERSONAL CASE

The present case was that of a man of 62. After death a vague history was obtained that a flowerpot had fallen on his head eight years previously. He had been

FIG. 1.—Brain *in situ* post mortem. Shows compression of frontal lobes and anterior portions of cysts.

FIG. 2.—Calvarium with posterior portions of cysts (distended with cotton wool).

Photographs kindly taken by C. Kindersley, Esq., F.R.C.S.

reasonably healthy till July 6, 1933. On that date, when working with his son decorating a staircase, he fell off a plank, down one storey, landing across a banister and striking the middle of his back. There was no sign of head injury and there was no

FIG. 3.—Cysts attached to dura mater.

loss of consciousness. He came home to bed and was seen soon afterwards. He was sent for X-ray examination and then to hospital. The X-ray report was as follows :—

'Lumbodorsal spine, anteroposterior view: The following fractures are observed: tip of the left transverse process of the first lumbar vertebra; both trans-

verse processes of the second and third lumbar vertebræ, and the right transverse process of the fourth lumbar vertebra.

‘Lateral view : The bodies of the vertebræ are seen to be of normal width and correct alignment and spacing. The lower dorsal and upper lumbar vertebræ show the coarse reticular shadowing, with irregular calcification and increase in the width of clear areas, characteristic of Paget’s disease.

‘A fracture of the spinous process of the third lumbar vertebra is observed.

FIG. 4.

- a.* Dura shrunk away from cyst wall.
- b.* Large spaces said to be typical of traumatic cases.
- c.* Blood clot.

Microphotograph kindly taken by Dr. R. M. Norman.

‘Pelvis : Evidence of Paget’s disease is noted throughout the whole pelvis and in the right femur.’

The patient remained in hospital for three weeks and was in bed at home for a further three weeks. He gradually got about again and had been back at fairly normal work. (He was on his own work, so could regulate his hours and labour.) On October 20, 1933, he seemed to change mentally, became confused as to time, dates and localization. He was temporarily better but complained of headache. On October 23 he became excitable, then almost maniacal and difficult to control. On October 25 he had become partially comatose, and just responded to direct commands. No localizing signs were discovered ; no nystagmus was present ; the optic discs were normal. A frontal thrombosis was diagnosed, though no explanation of

cause could be given. He gradually sank into deeper coma and died on the night of October 27/28.

A post-mortem examination was held and the photographs show the findings. The cysts were full of relatively recent blood clot, semifluid, and only slightly changed in colour. They were almost exactly symmetrical. The walls were thin and not adherent to the pia, and stripped easily off the dura. Had a diagnosis been made during life there is no doubt that they could readily have been removed by the surgeon, or even drained through a small opening, which is said to be adequate treatment. The subjacent brain, though much compressed, was not congested, and appeared perfectly normal.

COMMENT

The case is remarkable for the absence of any real history of head injury, though presumably the hæmatomata occurred at the time of the spinal injury. The terminal event was presumably due to a fresh hæmorrhage into the cysts. These were large as compared with many described in the literature, and showed no old laminated clot. They covered the whole area from behind the frontal sinuses to the posterior margin of the frontal lobes, and were not connected with each other or with any venous sinuses. The skull did not show any marked degree of Paget's disease, which was elsewhere obvious.

REFERENCES

- ¹ BAILEY, P., *Cerebral Tumours*, 1933.
- ² PUTNAM, T. J., *Arch. of Surg.*, 1925, **11**, 329.
- ³ TROTTER, W., *Brit. Jour. Surg.*, 1914, **2**, 271.