ABSCESS FORMATION IN THE PITUITARY FOSSA ASSOCIATED WITH A PITUITARY ADENOMA

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A pituitary adenoma with abscess formation is an extremely rare finding, only two cases having been found recorded in the literature. Whalley,² in 1952, reported the case of a patient who presented a picture of fulminating meningitis, and who died before a diagnosis could be made. At autopsy an abscess in a pituitary adenoma was found as the cause of the acute meningitis.

Asenjo¹ described a case in which the presence of an hypophysial adenoma with typical clinical and radiological findings was detected after the patient had been treated for acute sinusitis, and complained of sudden visual disturbance. Operative treatment was successful.

In the case reported here, as in Whalley’s² case, the presenting symptoms were those of acute intracranial pathology. The pituitary adenoma which was present was diagnosed only during the course of investigations which were performed in order to ascertain the cause of his acute illness.

CASE REPORT

H.P., a white male aged 37 years, consulted his doctor on June 4, 1953, complaining of a very severe left-sided headache, which came on at a moment’s notice as he was closing the door of his car. As the excruciating headache persisted, he was referred to a neurologist 2 days later. At this time, no abnormalities in the general or neurological examinations were evident, and because of the patient’s almost “wild” behaviour, caused by the severe headache, he was admitted to hospital for observation, with doubt as to organic aetiology, and with suspicion of a psychosis.

After admission photophobia developed and, 2 days later, there was a partial 3rd nerve palsy on the left side, which progressed rapidly to complete paralysis within 24 hours. The development of these signs left no doubt as to the presence of an organic lesion, and in spite of the absence of rigidity of the neck, an aneurysm was suspected. Lumbar puncture yielded clear, colourless spinal fluid under normal pressure. There was no rise in the protein content, and 5 lymphocytes were present.

The patient was transferred to the Neurosurgical Unit.

Examination. He complained of persistent excruciating headache and marked photophobia. Blood pressure and pulse rate were normal. Temperature was slightly raised. The optic discs were normal. To rough confrontation there was no impairment of the visual fields. These could not be accurately tested because of the rather poor co-operation of the patient, who was in a distressed condition. There was no evidence of other neurological abnormalities.

Plain roentgenograms of the skull revealed a grossly enlarged pituitary fossa, with thinning of the posterior clinoid processes. There was complete erosion of the posterior portion of the sella turcica. A calcified pineal gland was observed in the postero-anterior view, and was centrally situated. Roentgenograms of the sinuses showed no definite abnormality. Minimal changes were present in the right antrum which were considered of doubtful pathological significance.

In spite of the erosion of the pituitary fossa, suggesting the presence of a pituitary ade-
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adenoma, an aneurysm had to be excluded in view of the history of sudden onset of headache, and the 3rd nerve paralysis. Left percutaneous carotid angiography was performed under general anaesthesia. There was no evidence of an aneurysm. Following angiography, an air-encephalogram was performed which revealed a normal ventricular outline. A diagnosis of pituitary adenoma was made.

Operation. On June 16, 1953, under general anaesthesia, the region of the optic chiasm was exposed via a left transfrontal approach. The bluish capsule of a tumour mass was evident and, after coagulation of the capsule, an incision was made and the tumour was removed by suction and spoon. After the major portion of the tumour had been removed, the bed was scraped with a spoon, and a sudden welling of thick yellow pus in the tumour bed occurred. The total volume of pus aspirated was 5 cc. Complete evacuation of pus and remaining neoplastic tissue was performed, haemostasis was effected, and patties soaked in 200,000 units penicillin were packed into the fossa for several minutes. Closure was then performed in the usual manner.

Histologically the tumour was a chromophobe adenoma.

Culture of the pus yielded a growth of Staphylococcus aureus which was sensitive to the five antibiotics tested.

Course. The patient received intramuscular penicillin and streptomycin, and daily intrathecal penicillin injections of 25,000 units for 3 days. In the first 3 days, the temperature fluctuated between 100° and 100.8°F., then settled to normal. Apart from this, the patient made an uneventful recovery. Relief from the severe headache was immediate. The 3rd nerve palsy started improving after 24 hours, and progressed to almost complete recovery after 10 days. At this time there was slight residual weakness causing occasional diplopia.

The patient was discharged on the 23rd postoperative day, symptom free. Vision on the right side was 6/9, and on the left 6/12. The visual fields were full. The 3rd nerve palsy had cleared up completely, no diplopia being complained of.

The patient was kept under observation and reported every 3 months. The visual fields remained normal, and visual acuity improved. The only complaint was a feeling of tiredness.

On Sept. 21, 1953 he suffered a severe headache, which alarmed both the patient and his wife, in view of the similarity to the beginning of his initial illness. Examination revealed normal neurological findings, but a slightly raised temperature. Roentgenograms of the skull and sinuses demonstrated changes characteristic of a pansinusitis. This condition rapidly improved and cleared up on antibiotic therapy.

Although the roentgenograms prior to operation showed no definite pathology of the sinuses, apart from minimal changes in the right antrum, the subsequent pansinusitis strengthened the presumption that the suppuration in the pituitary fossa, which was found at operation, was caused by extension from a sphenoidal sinus infection.

Because of the persistent complaint of tiredness, a further assessment of endocrine function was made and, although no evidence of gross pituitary deficiency was revealed, he was given a small maintenance dose of cortisone and testosterone. After this the tiredness disappeared and further, the patient volunteered the information that his libido had improved, although this loss had not been mentioned prior to the investigations. Periodic follow-up examinations have revealed no abnormalities and the patient is symptom free.

DISCUSSION

Cases of inflammatory processes and abscess formation in the pituitary gland have been described in the literature, and have been discussed in an article by Asenjo. His case, that of Whalley and the case described here are, however, the only ones known in which abscess formation and pituitary adenoma coexisted.

In the present case the abscess in the pituitary fossa, which undoubtedly originated from an infection of the sphenoidal sinus, caused the acute presenting symptoms which led to the diagnosis of a pituitary adenoma. The fairly rapid onset of the 3rd nerve paralysis must have been caused by excessive pressure in a lateral direction, extending to the cavernous sinus with compression of the 3rd nerve.
As mentioned, this case bears a similarity to that described by Whalley,\(^2\) in that the onset was sudden, and not actually associated with symptoms of a pituitary tumour. In the case of Whalley, however, the clinical picture was that of a fulminating meningitis, which was originally thought to be secondary to a cavernous sinus thrombosis. Bilateral blindness developed with great rapidity, and the patient died within 12 hours of admission to hospital. Autopsy showed a tumour occupying the sella turcica, with an abscess occupying one whole side of the mass. No evidence of a break-through into the subarachnoid space was found at autopsy, which makes the mechanism of spread of the meningitis rather difficult to explain.

Asenjo’s\(^1\) patient had been treated for a frontomaxillary sinusitis which had cleared up but, because of the persistence of the complaint of visual disturbance which had commenced with the sinusitis, he was referred to the Institute of Neurosurgery, and a diagnosis of pituitary adenoma was made from the patient’s clinical symptomatology, radiological findings and the visual field charts which showed a typical, complete bitemporal hemianopia. At this time there were no further signs of an acute inflammatory condition present.

**SUMMARY**

A case is presented of pituitary adenoma with abscess formation in the pituitary fossa.

The clinical symptomatology was unusual, as the patient did not present the classical symptoms or signs of an hypophysial tumour, and diagnosis of the adenoma was made on the radiological findings.

The presenting feature was the acute onset of symptoms of meningeal irritation which, combined with the subsequent onset of a 3rd nerve paralysis, were at first suggestive of an aneurysm with subarachnoid haemorrhage.

Only two other similar cases have been found in the literature. Whalley’s\(^2\) patient presented symptoms of a fulminating meningitis, and the diagnosis was made at autopsy. In Asenjo’s\(^1\) case, the associated abscess was a complicating factor in a symptomatology that was diagnostic of a pituitary adenoma.

**REFERENCES**