ACUTE HEMORRHAGE INTO PITUITARY ADENOMAS

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Hemorrhage into a normal pituitary gland, with or without later
signs of hypopituitarism, is said to occur in many conditions.16,18–20,25,32
Kraus cited reports of pituitary hemorrhage in anencephaly, cretinism, cardiac failure, tetanus, erythremia, sepsis, abdominal typhus, miliary tuberculosis, Basedow’s disease and diabetes mellitus; he stated that bleeding is found frequently in pituitary tumors. Although this latter complication is well recognized,19 it can hardly be said to be common. However, it is probably more common than usually is thought, since reports in the last few years are usually of several cases each,7,14,20,27,34 whereas nearly all the reports before 1949 dealt with isolated instances.5,8,30,35,37

A search of the literature uncovered reports of a total of 71 cases of hemorrhage into pituitary adenomas.1–3,5–11,13,14,16,17,21–23,26–28,36,38,40–42 The condition in 35 of these cases was acute,2,3,5,7,9,10,17,21,23,26,28,34–36,41,42 and the hemorrhage in another 1313,27,33,34,39 was associated with roentgenological treatment, of which bleeding is a recognized complication, although Sosman19 said it is infrequent. It is difficult to assess the actual incidence but Müller and Pia27 found 19 instances of hemorrhage in a series of 270 pituitary adenomas; the condition in 3 of the 19 was acute. Müller and Pia classified hemorrhage into pituitary tumors as acute, subacute and chronic; this classification is useful but not completely accurate, since a patient may give a story of one or more subacute episodes before a final acute one;6,7,23,34,35 also, evidence of both old and recent bleeding may be found at necropsy12 or operation.7,14,34,38 Acute bleeding is sudden and is accompanied by compression of the chiasm, optic nerves and cavernous sinus27,31 and also not infrequently by penetration of the capsule of the gland, with subarachnoid hemorrhage. More unusual forms occur so that the picture may be rather misleading, as in the case of Schnitker and Lehnert;56 although their patient was known to have a pituitary adenoma, the exact diagnosis was not suspected at first because compression of the middle cerebral artery produced the clinical picture of closure of that artery. Other findings to confuse the diagnosis were presented in the third case of Brougham and associates;7 the patient in question had

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right hemiparesis. Another of their patients had facial pain from compression of branches of the fifth cranial nerve in the cavernous sinus.

In the acute stage of hemorrhage into a pituitary adenoma, the clinical picture must be distinguished from that of a ruptured congenital aneurysm.\(^9,13,16\) Clinically, this may be difficult, especially if the patient is drowsy or in coma. However, when evaluation of the visual fields can be done, the usual defects thus found may be diagnostic of a pituitary lesion. Furthermore, the amount of blood in the cerebrospinal fluid demonstrated by spinal puncture tends to be somewhat less in pituitary hemorrhage than in subarachnoid hemorrhage from an aneurysm, and, of course, there may be none at all. The diagnosis can be made more readily if the patient is known to have a pituitary tumor or is having roentgen treatment for one. Even if this is not so, the patient may show signs of pituitary dysfunction, such as acromegaly,\(^2,6,9,16,17\) as seen in one of our patients, and an adenoma of the pituitary could be suspected. When a tumor is known to exist, the possibility of an acute pressure cone\(^16\) at the tentorial notch or of secondary adrenal insufficiency\(^28\) as a cause of the coma should be considered.

Clinical and laboratory evidence of anterior pituitary insufficiency would be helpful in making the diagnosis of hemorrhage into a previously asymptomatic pituitary adenoma. However, such evidence may not appear with acute episodes and one must rely on the changes in visual fields plus signs of increased intracranial pressure. Patients who have had several episodes of bleeding might well present the appearance of hypopituitarism or show comparatively rapid accentuation of pre-existing signs and symptoms of this condition and one perhaps should suspect bleeding as the cause in such circumstances. Demonstrable pituitary insufficiency during the time of hemorrhage did not occur in either of the 2 cases to be reported.

The diagnosis is helped greatly by evidence of a ballooned sella turcica in lateral roentgenograms of the skull, although this classic roentgenographic picture is not present in all cases.

Sudden death associated with a pituitary tumor without hemorrhage has been reported in several cases.\(^12,24,29,37\) An uncomplicated pituitary tumor might, therefore, have to be considered in the differential diagnosis but such differentiation would be of little practical value in decisions regarding treatment.

**PROGNOSIS**

Some of the case reports in the literature lack sufficient detail to allow clear analysis of the results. In the acute lesions reported in the past, the outlook has not always been good and the mortality rate has been high. In more recent reports, however, improvement has occurred in morbidity and mortality rates. Of the 35 patients reported on who had acute hemorrhage, at least 21 died of the hemorrhage. Death was instantaneous in some patients, whereas it took place from a few hours to a month after the onset of the symptoms in others. In the remainder, some recovery of vision or of ocular movements or both was noted in at least 9 instances. Recovery of