CASE REPORT AND TECHNICAL NOTES

BENIGN SUBTENTORIAL SUPRACOLICULAR CYST AS A CAUSE OF OBSTRUCTIVE HYDROCEPHALUS

REPORT OF A CASE

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Cystic collections of fluid occurring above the colliculi and below the tentorium have been reported in association with obstructive hydrocephalus by Penfield,7 Sweet,10 Dyke,4 Childe and McNaughton,2 Peterson,9 Pennybacker and Russell,8 and Torkildsen,12 the total of such cases reported being 13. The cause of hydrocephalus in most patients was some obstructive process either in the 3rd ventricle or aqueduct of Sylvius, more commonly the latter. In at least 5 cases the cause of obstruction to the flow of cerebrospinal fluid was a tumor in the region of the aqueduct, in 3 a stenosis of the aqueduct, in 2 a tumor in or under the 3rd ventricle, in 1 a parasagittal meningioma, and in 1 ependymitis. Of greatest interest, is the route by which fluid from the lateral or 3rd ventricles reaches the region behind the pineal gland, above the colliculi and under the tentorium. In 1 case (Case 2) of Torkildsen15 there was a rupture of the posterior wall of the 3rd ventricle just below the pineal gland caused by long-standing excessive intraventricular pressure with escape of fluid into the space above the midbrain. In all other cases in which the site of rupture of the ventricles could be determined this occurred in the posterior portion of one or both of the lateral ventricles. Pennybacker and Russell8 found that the rupture occurred in that part of the lateral ventricle that is thinnest normally, the posterior floor of the ventricle lying just behind the fornix and medial to the hippocampal gyrus. In all reported cases the site of rupture was clearly patent, and there was free communication between the lateral ventricles and the subtentorial cyst. In each patient in whom ventriculography was done the cyst was demonstrated as an abnormal bubble of air below the tentorium, and it was felt that the cyst in itself was not the cause of the neurological abnormalities. Pennybacker and Russell8 suggested that it might add to the already existing obstruction by further impeding the flow of cerebrospinal fluid from the posterior fossa to the large absorptive surface of the cerebral cortex. With the exception of Cases 2 and 3 of Dyke,4 all previously reported patients with subtentorial cysts have died either of the associated pathological condition or of some complication of surgery.

Spontaneous ruptures of other portions of the ventricular system may occur in cases of obstruction to the normal flow of cerebrospinal fluid. Sweet19 described a patient in whom a rupture of the anterior wall of the 3rd ventricle had taken place through the lamina terminalis. Torkildsen12 surmised in 1 case that there had been a rupture into the subarachnoid space probably through the cerebral cortex.

Hamby and Gardner5 have reported a case unlike any other found in the literature. Their patient, a 16-year-old girl, had obstructive hydrocephalus caused by an
ependymal-lined cyst over the quadrigeminal plate. They could find no communication between this and the ventricular system either by ventriculography, injection of indigo carmine into the ventricles, or direct inspection of the cyst at operation through the posterior fossa. Evacuation of the cyst resulted in relief of all symptoms of increased intracranial pressure. They were uncertain as to the origin of the cyst, feeling that it might have been brought on by a serious fall the patient had had 8 months before operation or that it might have been developmental in origin.

CASE REPORT

NCBH #116859. P.S., an 18-month-old male child, was first admitted on Aug. 26, 1950, with the chief complaint of enlargement of the head and regression of development of 4 months' duration.

Past History. This child was born last in a family of seven children, the product of a normal pregnancy and a low forceps, hospital delivery. Birth weight was 7 lbs., 14 oz. Early development was normal. He was breast fed, with addition of solid foods as indicated and vitamins in proper dosage. At 3 months the child held up his head; at 6 months he sat alone; at 8 months he stood, and at 9 or 10 months he walked. He began to talk at the age of 16 months.

Present Illness. In April 1950, 3 months before admission, he had a severe persistent cough which was diagnosed as whooping cough, followed shortly thereafter by chicken pox. In May, the mother noticed that his head was beginning to enlarge and that he stopped trying to sit or stand alone. In June, the child was taken to a pediatrician who found the head measured 19 in. in circumference. In the following 2 months the head increased to 21 3/4 in. and the anterior fontanel was large. During this time there was occasional vomiting and the patient was listless, having no desire to sit or stand and making no progress in speech.

Examination. He was a well developed and well nourished child with an obviously large head (Fig. 1). The head was 23 in. in circumference; chest 30 in. in circumference. The anterior fontanel was 1 1/2 X 1 in. and tense. There was obvious separation of the cranial sutures. There was no papilledema. Extraocular movements were normal. There was no evidence of impairment of hearing. The deep tendon reflexes were hyperactive.

Urine and blood were normal. Blood Wassermann, Kahn and tuberculin tests were negative. Roentgen films of the chest, wrist, and knee showed no abnormalities. Roentgenograms of the skull demonstrated separation of the cranial sutures with thinning of the cranial vault. The sella turcica was normal.

Course in Hospital. On Aug. 29, 1950, bilateral subdural punctures were done through the coronal sutures. No subdural fluid was obtained. The right lateral ventricle was entered at a depth of 2 cm. and clear, colorless fluid was withdrawn. A lumbar puncture was done at the same time. The cell count of both ventricular fluid and lumbar fluid was normal. Total protein of ventricular fluid was 4 mg. per cent; total protein of lumbar fluid, 22 mg. per cent.

Following this the fontanel was much softer and the child was somewhat brighter. This persisted for 4 days and it was thought that this might be a case of arrested hydrocephalus. Consequently the child was discharged to be followed at frequent intervals.

Fig. 1. Patient before head was shaved. The head is enlarged and the anterior fontanel is bulging.