Cystic intracranial teratoma in an infant

Case report

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Patients with intracranial tumors symptomatic within the first 2 months of life are seldom seen and rarely diagnosed before death.\textsuperscript{1,3} In only one case of such a tumor was a localizing contrast study performed.\textsuperscript{5} Two other cases were recognized by the presence of calcification on roentgenograms.\textsuperscript{2,3} All three of these patients were operated on. Only one survived beyond the first week following surgery. In that case, the operative procedure was limited to the evacuation of multiloculated cysts and biopsy of the cyst wall of a presumed teratoma.\textsuperscript{5}

This report describes a hydrocephalic infant with a large calcified intracranial teratoma overlying the planum sphenoidale. Ventriculography, angiography, and surgical removal were performed. It is believed this is the first case in which a patient less than 3 months of age has been reported to survive the resection of the bulk of a verified intracranial tumor.

Case Report

An infant girl was born on December 4, 1968, at estimated full term. Prior to conception and during the first trimester of pregnancy, the mother had been taking birth control pills. In mid-April the mother was treated with sulfisoxazole. Because she developed abdominal pain and vomiting, gall bladder and upper gastrointestinal series were performed on June 18 and 19. Pregnancy was diagnosed in mid-July, at about 4 months of gestation, and oral contraceptives were discontinued.

At birth the patient weighed 6 lbs 3 oz. Head circumference was 33 cm. At 9 weeks of age, the child became irritable, vomited, no longer held her head up well, and stopped following objects with her eyes. Head circumference was 40 cm. A week later she became lethargic with irregular respirations and medial deviation of the right eye. The head circumference was now 45.5 cm.

Both parents and six brothers were in good health.

Examination. Upon admission on February 17, 1969, at age 10½ weeks, the patient's head circumference was 46.3 cm. There was slight prominence of the right frontal region. Sutures and fontanels were spread and tense. Transillumination revealed increased lucency of the left midparietal, right parietooccipital, and especially the right frontal regions. The child was lethargic and had poor head control. Pupils were equal and poorly reactive. The discs were atrophic. The eyes tended to deviate medially and would not focus. There was marked limitation of lateral gaze of the right eye and an occasional rapid jerk of the eye inferomedially. The right corneal reflex was diminished.

Hospital Course. A right subdural tap at
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the anterior rim of the fontanel released clear, colorless fluid with a protein content of 71 mg\%. No fluid was obtained on the left side. Skull films revealed widened sutures, craniofacial disproportion, and a densely calcified mass chiefly on the right above the planum sphenoidale (Fig. 1 left). A liberal amount of radiolucent tissue outlined the mass, which measured $4.5 \times 4.5 \times 4.5$ cm (Fig. 1 right). There were four other separate areas of calcification. One was located 3 cm to the left of the main mass, two others were on the right at the vertex, and another was suprasellar. The tuberculum sellae was flattened. A left ventricular tap returned crystal clear, colorless fluid with a protein of 4 mg\%. Air injected into the left ventricle showed poor communication with the right ventricle. The right ventricle was elevated by a suprasellar tumor of considerably larger size than the calcification. This indented the right side and the floor of the third ventricle. Air entered the spinal canal but not the intracranial cisterns. Air introduced into the right subdural space revealed a cyst. A right ventriculoperitoneal shunt was performed.

On February 25, a right carotid angiogram demonstrated that the right middle cerebral artery was displaced posteriorly and superiorly by the mass. The horizontal portion of the right anterior cerebral artery did not fill, and the pericallosal artery filled in retrograde fashion from the middle cerebral group. There was a diffuse homogeneous vascular blush in the mass of the tumor behind the calcification evident during the arterial and early venous phases (Fig. 2).

**Operation.** On the following day a right frontotemporal craniotomy was performed. The right frontal lobe extended only a few centimeters in front of the coronal suture. The remainder of the right anterior fossa was occupied by cysts containing clear colorless fluids of differing protein concentrations. Anteriorly in the middle fossa was a cyst containing viscous yellow fluid. Beneath the temporal lobe a separate cyst extended over the petrous ridge and behind the clivus. This contained extremely thick, mucoid, colorless fluid. On the floor of the anterior fossa lay a hard pale-white mass, firmly fixed to the planum sphenoidale, and embraced by very thin olfactory nerves. Attached to it were two small cysts of yellow fluid containing hair. Soft tumor extended posteriorly from this into the medial inferior aspect of the right frontal lobe. A plane of dissection was

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**Fig. 1.** Left: Anteroposterior skull film. Note punctate calcification to left of main mass as well as above it. Right: Lateral skull film. The radiolucent region surrounding the calcification is most evident in this view.

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