Diploic dermoids

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Dermoids are congenital lesions originating from rests of primitive ectoderm at the closure sites of the foetal cleft. Rarely dermoids such as the one described here may arise within the diploë of the skull bones; they expand and subsequently destroy the tables of the bones.

Case history

A 52-year-old man was admitted with slowly increasing proptosis of his right eye.

Examination of the eyes revealed 7 mm of proptosis on the right side (Fig. 1); in addition the right eye was markedly displaced downwards. There was mechanical limitation of the globe while looking up. A cystic mass parallel to the right supraorbital margin was palpable above the eye, but the posterior limit of the cyst could not be reached. The bony orbital margins were intact. Visual acuity was 6/9. Ocular fundus and visual fields were normal. Examination of the left eye was unremarkable and there was no systemic anomaly. A diagnosis of frontal mucocele was suggested.

Radiological examination revealed vertical enlargement of the right orbit due to a large triangular indentation in its roof (Fig. 2). There was an area of communication between the indentation and the right frontal sinus. The margins of the frontal sinus were well demarcated and round. There was no dehiscence of the sutures at any place.

Dionosil, a radio-opaque dye, was injected into the cyst after aspirating 2 ml of its fluid. The fluid was highly viscous, and contained fat and cholesterol crystals on microscopic examination. Radiological pictures, subsequent to the

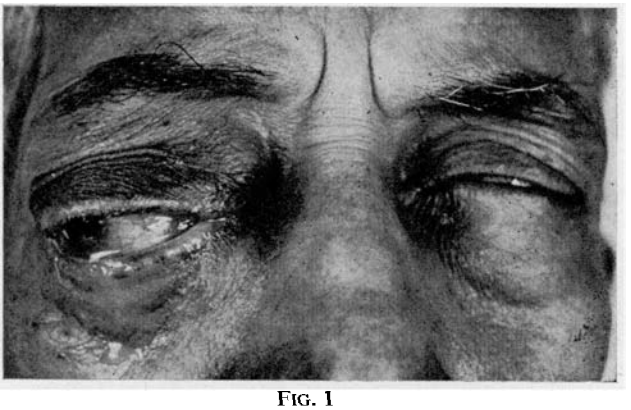


Fig. 1

Clinical photograph to show proptosis and downward displacement of the right globe in right gaze.

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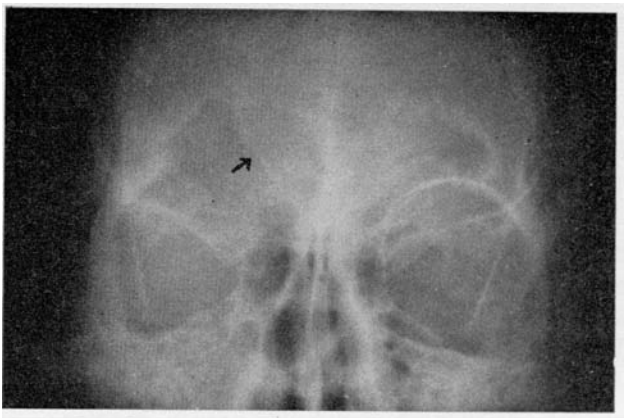


FIG. 2

Radiological picture showing indentation of the right frontal bone and its communication to the frontal sinus (arrow).

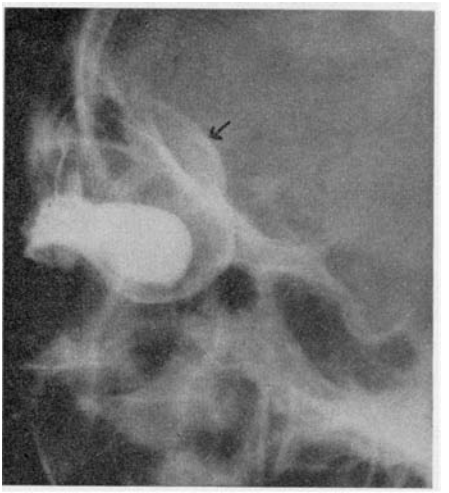


FIG. 3

Radiological picture to show the extent of the cyst and its extension into the anterior cranial fossa after injecting a radio-opaque dye into the cyst (arrow).

injection of Dionosil, revealed its communication with the frontal sinus and its extension into the anterior cranial fossa (Fig. 3).

A partial excision of the cyst was performed through the anterior orbital route by making an incision in the upper conjunctival fornice. The excised mass was subjected to histopathology. Microscopic examination revealed a cystic mass lined with stratified squamous epithelium; cholesterol clefts surrounded by multinucleated foreign body giant cells were seen in the fibrous wall of the cyst. A few hair follicles were also visible (Fig. 4).

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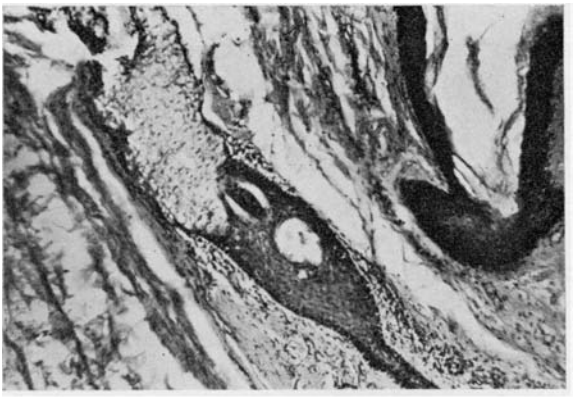


FIG. 4
Microscopic picture of dermoid. (H. & E. ×100.)

Discussion

The commonest site for the occurrence of dermoids in the body is the genital and sacral areas which are involved in 87 per cent of cases (New and Erich, 1937). Of head and neck dermoids, Brownstein and Helwig (1973) observed 56 per cent of ocular and orbital dermoids. The orbit is an uncommon site for them, while their occurrence in the paraorbital areas is frequent. Orbital dermoids have been observed in 1 to 5 per cent of cases with proptosis; Pfeiffer (1943) recorded 7 out of 200, Drescher and Benedict (1950) 3 out of 177, Cary (1958) 7 out of 293 and Moss (1962) 7 out of 230 cases of proptosis. Reese (1963) in his largest series of 877 histologically proved orbital lesions, observed dermoids in 5 per cent of cases.

Orbital dermoids are well-circumscribed swellings, usually in the upper-outer quadrant, when they produce proptosis with downward and medial displacement of the globe (Duke-Elder, 1967). Superior orbital dermoids arising from the diploë of the frontal bone are extremely rare. King (1939) described one case. Pfeiffer and Nicholl (1948) described 9 cases with orbital dermoids, of which 6 were diploic dermoids arising from the frontal bone. The frontal diploic dermoids, because of their location, produce a marked degree of downward displacement of the globe in addition to proptosis. They expand both inner and outer tables of the skull and destroy them. Their communications with the anterior cranial fossa (Pfeiffer and Nicholl, 1948) and frontal sinus (King, 1939) are missed by the usual radiological investigations. Special radiological techniques, such as tomograms, are required to detect the necessary defects. The extent of the cysts and their communications are easily judged by injecting a radio-opaque material which outlines their walls.

Dermoids in this location have to be differentiated from mucoceles. Frontal mucoceles produce bulging at the upper and inner part of the orbit, and they communicate with the frontal sinus. They produce down-

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ward and lateral displacement of the globe in addition to proptosis. Dermoids, on other hand, either produce indentations of the bones or expand and consequently destroy the tables of the skull bones. Microscopic examination of the aspirates from the cyst shows fat globules and cholesterol crystals. Histopathology of the excised specimen confirms the diagnosis.

Summary

A diploic dermoid involving the orbital plate of the frontal bone is described in a 52-year-old man. It presented with proptosis, downward displacement of the globe and limitation of its movement while looking up. Its extension into the anterior cranial fossa was detected by injecting a radio-opaque material into the cyst.

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