Case history of a frequently misdiagnosed condition

Dermoid cyst of the lateral third of the eyebrow

The most common location of a dermoid cyst of the head and neck region is at the lateral third of the eyebrow (New and Erich, 1937). Misdiagnosis and inadequate treatment are frequent in the management of a dermoid cyst in this location (Crawford and Webster, 1952; Littlewood 1961). We present a case of a dermoid cyst of the lateral third of the eyebrow and discuss its differential diagnosis.

The patient, a Mexican-American male, presented with a small 'pimple' in the left temporal region at 18 months of age. A sinus developed, which resolved spontaneously. A second sinus presented in the epicanthal region. At 30 months of age, the sinus and an associated mass in the lateral epicanthal region were excised. Postoperatively, the sinus recurred. Six months later the sinus was re-excised and again recurred. The tissue obtained at the last excision showed changes of acute and chronic inflammation only.

The patient was then referred by his private physician to the ophthalmology service at our institution. Orbital x-rays at that time were normal. Two further explorations of the lateral epicanthal region were performed at 40 and 44 months of age. On both occasions the sinus recurred. Four months after the last exploration, he was referred to the plastic surgery service. On physical examination he was seen to have a 2cm swelling lateral and superior to the outer third of the eyebrow, as well as a sinus opening in the lateral epicanthal region (figure 1). A provisional diagnosis of a dermoid cyst was made. This was excised along with its sinus and the ectropion was corrected (figures 2 and 3). The histopathology was characteristic of a der-

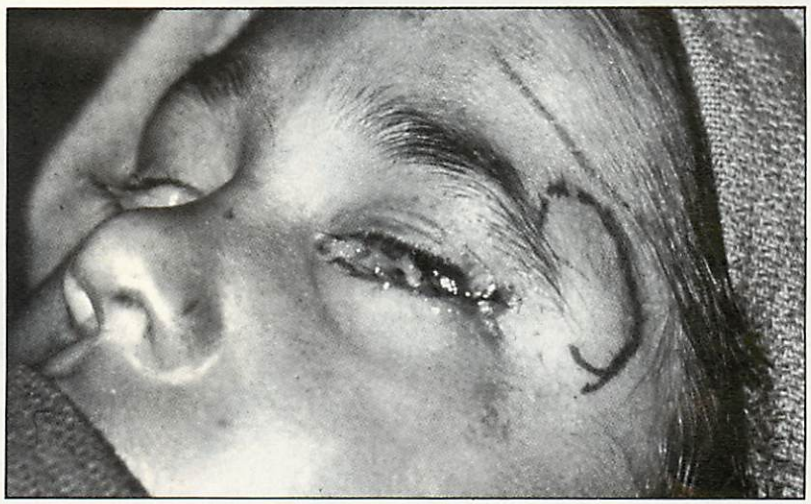


FIGURE 1 — Intra-operative. The cyst is outlined and the sinus opening is visible at the lateral epicanthus

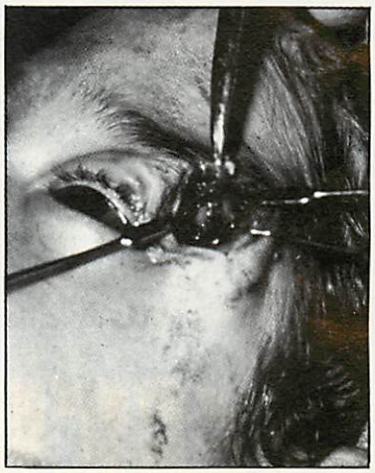
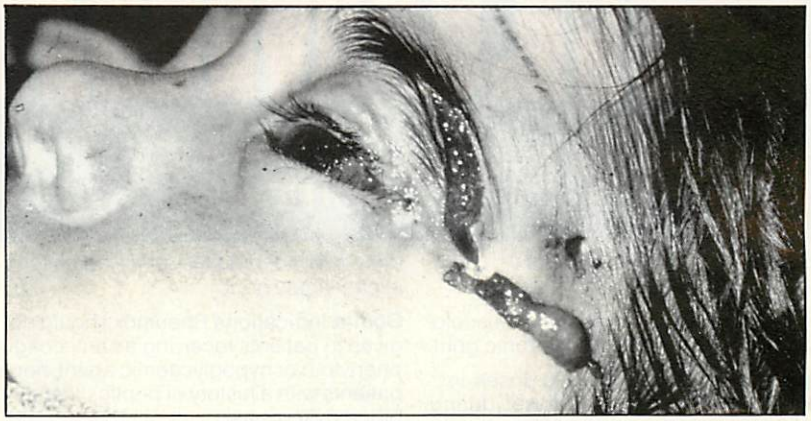


FIGURE 2 — Intra-operative. The cyst is exposed through a linear incision in the lateral third of the eyebrow. The central hemostat grasps the cyst

FIGURE 3 — Intra-operative. The cyst, complete with sinus track, has been excised and lies in its original orientation for comparison. The pigmented area 10mm lateral and superior to the outer end of the eyebrow represents the site of the cyst. This was adherent to skin at the site, presumably, of the initial sinus



moid cyst. There was no recurrence when the patient was last seen, 10 months after surgery.

Discussion

Histologically, a dermoid cyst is composed of two germ cell layers (Arnold, 1870): an epithelial-lined cavity with underlying skin appendages (hair follicles, sebaceous and sweat glands). According to Brownstein and Helwig (1973) the characteristic clinical picture is that of a small, round, slowly growing, asymptomatic, solitary, subcutaneous mass that has been present since birth and is located in the lateral aspect of the upper eyelid. New and Erich (1937) described 64 dermoid cysts arising in the facial region. Of these, 51 were located in the periorbital region and 31 (60%) in the lateral third of the eyebrow. Thirty out of 31 were evident by five years of age, and 52% were present at birth.

The aetiology of these cysts is unknown. In the latter half of the nineteenth century, His postulated the existence of individual facial processes which subsequently fused. Dermoid cysts were thought to arise from inclusion of ectodermal elements at the site of fusion of embryonic processes. Streeter (1948) showed that facial processes are mesodermal masses moving forwards and smoothing out ectodermal grooves. Littlewood (1961) suggested that dermoid cysts of the superficial kind may arise from aberrations in ectodermal derivatives such as hair follicles and associated glands which then extend with possible erosion of the underlying bone.

In the discussion of the differential diagnosis of dermoid cysts it is not unusual to find a long list of alternate diagnoses (Holt *et al*, 1980; Hogan *et al*, 1980). For example, a nasal dermoid must be distinguised from a glioma or an encephalocele, and a dermoid of the head and neck region must be distinguised from lesions such as a branchial cyst or a cystic hygroma. It is not uncommon for a dermoid cyst to be misdiagnosed and mistreated (New and Erich, 1937; Crawford and Webster, 1952). However, a subcutaneous swelling in the lateral third of the eyebrow, evident in the first five years of life, is nearly always a dermoid cyst. Greater recognition of this fact may decrease the incidence of misdiagnosis and inadequate treatment.

The treatment of a dermoid cyst consists of excision of the cyst in its entirety (Crawford and Webster, 1952). Excision of the sinus alone, as performed initially in the case described above, results in recurrence and further cicatrisation.

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Breast cancer conference

An international conference on the treatment of breast cancer is to be held at the Metropole Hotel, National Exhibition Centre, Birmingham, on October 22. Topics will include: informed consent, rehabilitation, current trends in treatment and new concepts in medical management. There will be contributions from Germany and the USA. Details: The Mastectomy Association of Great Britain, 26 Harrison Street, off Gray's Inn Road, King's Cross, London WC1H 8JG. Telephone: (01) 837 0908.