

ANOMALOUS LACRIMAL DUCTULE*

CASE REPORT AND REVIEW

BY

REGINALD CARPENTER AND HARRY ANNAMUNTHODO

Department of Surgery, University College Hospital of the West Indies

THE discharge of tears from an abnormally placed orifice was first reported by Sir William Mackenzie (1830). In his case the cutaneous orifice lay close to the lacrimal gland and appears to have been a fistula of the lacrimal gland itself. Over fifty years later Moritz (1898) reported a cutaneous orifice discharging tears and placed at some distance from the lacrimal gland complex. This latter condition has been reported infrequently, usually as a congenital fistula. Duke-Elder (1964), however, calls this an anomalous lacrimal ductule and this seems to be a better name as it differentiates this condition from a fistula of the lacrimal gland. The rarity of this condition warrants the report of a further case.

Case Report

A 4-year-old negro girl attended the University College Hospital of the West Indies on January 25, 1961. Her mother stated that the child had had a continuous flow of tears from just lateral to the outer canthus of the right eye since birth, and that this flow increased when the child cried. At no time was there any swelling or tenderness.

On examination both eyes and the adnexae were normal, except for a small punctum about 8 mm. lateral to the outer canthus of the right eye and on a horizontal line with it. The orifice was about 1 mm. in diameter. There was no swelling around it and the surrounding skin was of the same texture as on the contralateral side. From this orifice there was a continuous flow of tears which was increased by conjunctival stimulation. The tears were clear and there was no evidence of infection (Fig. 1). A small cannula was passed into the orifice and an attempt made to demonstrate the tract by contrast radiography after an injection of Neohydriol. The tract was outlined, passing medially and slightly upwards for about 1 cm., but could not be outlined beyond this.

At operation the orifice of the ductule was freed from the skin and the tract dissected out. A puncture wound was made in the conjunctival sac near the external canthus and the ductule threaded under the skin and anastomosed to the conjunctival sac at this site. The small skin wound was closed with interrupted sutures. Convalescence was uneventful. Three months after the operation the skin wound was well healed and completely dry, and the opening of the fistula into the conjunctival sac was just visible to the naked eye.

This patient was followed regularly in the out-patient department. Nearly seven months after operation it became evident that there was a small swelling deep to the skin incision. This swelling gradually increased in size, so that fifteen months after operation a cystic swelling 10 × 5 mm. was

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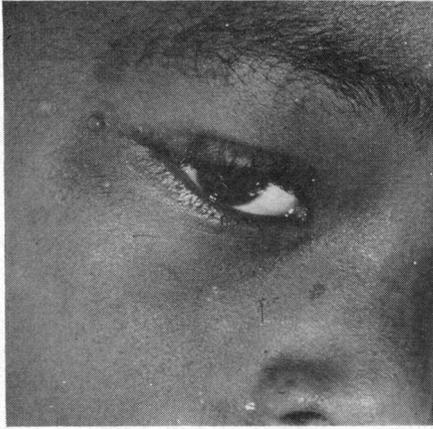


FIG. 1.—Orifice of the anomalous lacrimal ductule.

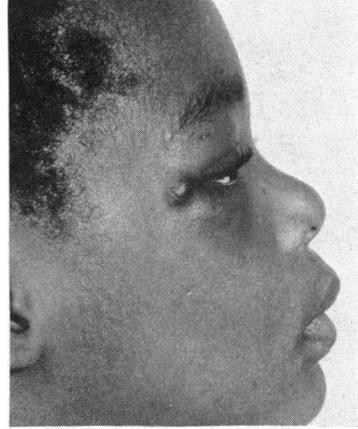


FIG. 2.—Cystic dilatation of the lacrimal ductule.

present deep to the scar (Fig. 2). This was thought to be a dilatation of the ductule due to stenosis at its orifice into the conjunctival sac. At a second operation in April, 1962, the ductule was re-transplanted. Because of its increased size the anastomosis between the ductule and the conjunctival sac was this time much larger.

The patient was again followed up in the out-patient department and when last seen seven months after the second operation, the scar was completely flat with no evidence of cyst formation. The orifice into the conjunctival sac appeared to be widely patent and to be functioning normally. The patient emigrated and was lost to subsequent follow-up.

Discussion

Since the original report by Moritz (1898), 4 cases have been reported in the literature (Ling, 1926; Damato, 1956; Malhotra, 1956; Stoicanu and Robovici, 1960). In Ling's (1926) case the outer canthus of the eye on the affected side was abnormal in that the lids had failed to unite at this point. The other three cases have been reported from India (Malhotra, 1956), Malta (Damato, 1956), and Roumania (Stoicanu and Robovici, 1960); in all these the anatomy, apart from the anomalous ductule, has been normal. In all instances there has been a steady flow of tears from the orifice and this flow has been increased by any stimulus to lacrimation. It does not appear that this continuous lacrimation causes any serious disturbance, and maceration of the skin does not seem to be a feature of this condition, as it is in a fistula of the lacrimal gland (Duke-Elder, 1964), nor have any tufts of hair been reported around the cutaneous orifice.

The origin of the ductule from the lacrimal gland may be demonstrated by very careful probing or, probably better, by the use of contrast radiography by injection of radio-opaque material through a cannula inserted in the skin orifice. By one of these methods it is possible to prove that the ductule originates from the lacrimal gland and occasionally even to show from which part of the lacrimal gland (Moritz, 1898; Malhotra, 1956; Stoicanu and Robovici, 1960). It is interesting that of the last three cases of this condition reported (Malhotra, 1956; Damato, 1956; and Stoicanu and Robovici, 1960), two of the patients, as in the case reported here, were girls.

The continuous secretion of tears through this anomalous orifice demands treatment. Cauterization of the orifice has not been successful (Stoicanu and Robovici, 1960). The treatment of choice appears to be transplantation of the orifice into the conjunctival sac. In recent case reports only one patient (Damato, 1956) was under the age of 7 years. The age at which treatment is undertaken depends on the age at which the patient presents. It would seem desirable to carry out this procedure between the ages of 3 and 4 years. It is unnecessary to operate in infants, as the small size of the ductule may render a wide anastomosis impossible. Infection is unlikely to be a problem, since in one case (Malhotra, 1956) the ductule remained uninfected in spite of an associated dacryorhinocystitis on the same side.

In our case the stenosis which occurred at the orifice after the first transplantation could have been avoided if the anastomosis had been made larger by slitting the fistula for a short distance, and anastomosing this to a larger conjunctival orifice. Again, experience with our case has shown the desirability of a long follow-up, as stenosis did not occur until seven months after the initial transplantation. This complication is an indication for a second transplantation, and the second one is likely to be more successful than the first because of the larger diameter of the ductule. If transplantation fails it may be necessary to remove that part of the lacrimal gland drained by this anomalous ductule, but this should only be done as a last resort.

Malhotra (1956) describes an inferolateral duct running from the outer edge of the lacrimal gland deep to the conjunctival epithelium and opening a few millimetres lateral to, and some distance below, the external commissure. We believe that the anomalous lacrimal ductule is usually an abnormally placed inferolateral duct. Apart from Moritz's (1898) case, the other four cases reported, as well as our own, have had the opening of the ductule in about the same position. In view of the abnormality of the outer canthus in the case reported by Ling (1926), we believe that the orifice of this duct is merely transposed laterally during development.

More detailed investigation by contrast radiography is needed in future cases in order to establish the origin of the ductule. Moreover, it would be useful to know the exact extent of the lacrimal gland drained by this ductule, should transplantation fail and excision of the ductule and that part of the gland become necessary.

Summary

A case of anomalous lacrimal ductule is reported. Review of the literature shows that only 5 cases have been reported previously.

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