Accessory extraocular muscle

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The presence of an accessory extraocular muscle discovered at operation is reported for its intrinsic interest and to add to the literature on such anomalous muscular slips.

Case report

A 6-month-old baby boy was referred to the clinic because his parents had noticed a left convergent squint since birth. Pregnancy and birth had been normal. He was an only child and there was no family history of strabismus.

Examination

Although on cover test the child maintained fixation easily with either eye, he preferred to view with the right eye. A marked left convergent strabismus was present, the deviation being greater on accommodation; the cover test also showed alternating hypertropia. When fixing with the right eye the horizontal deviation was approximately 35^{Δ} with left hypertropia and when fixing with the left eye it was 40^{Δ} with right hypertropia. Both eyes showed a gross symmetrical elevation in adduction although there was no V phenomenon. Atropine refraction revealed a low degree of hypermetropia. The fundi were normal.

Alternation was achieved and maintained after a 3-month period of conventional part-time right eye occlusion. Surgery was planned when the child was 17 months old to reduce the horizontal deviation and the unsightly elevation in adduction.

Operative findings

Forced duction tests revealed no undue resistance in any direction.

The left medial rectus was recessed 4 mm. and the left inferior oblique was anteroposed to 3 mm. from the lateral rectus insertion and recessed to 6 mm. below the lateral rectus border.

The right medial rectus was recessed 4 mm. When the right inferior oblique was exposed, it was found to be a much thinner muscle than the left inferior oblique, but otherwise it appeared healthy. Its insertion was left undisturbed.

In the course of dissection of the right inferior oblique muscle, an abnormal muscular slip was discovered lying between the lateral and inferior rectus muscles. The insertion of this accessory muscle was 5 mm. broad and it was attached to the globe 7.2 mm. from the limbus and 4 mm. lateral to the inferior rectus insertion. The slip was resected at its insertion and explored as far as the crossing of the inferior oblique and inferior rectus muscles, from which point it appeared to arise. The lateral and inferior rectus muscles appeared normal, healthy muscles.

Result

Postoperatively there was an esotropia of 15^{Δ} and some symmetrical elevation on adduction remained.

Comment

Scobee (1948), in discussing abnormal check ligaments, abnormal muscle slips, and abnormal muscle insertions, felt that 90 per cent. of cases of heterotropia appearing in the first 6 years of life had some underlying anatomical cause for the deviation. This comment is surprising in view of the extremely sparse literature concerning accessory muscles or abnormal muscular slips, which was well summarized by Fink (1958).

The accessory muscle in the present case was considered to be an additional insertion of the right inferior oblique, since the latter muscle was much thinner than on the left. From its position this muscle might have been expected to act as a depressor and extortor of the globe; its presence was totally unexpected from preoperative examination of the ocular movements.

An accessory inferior oblique muscle arising from the inferior oblique passing to the common tendinous origin and into the optic nerve sheath was described by Posey (1923). A similar abnormal muscular bundle (Rex, *quoted by* Whitnall, 1921) passing from the orbital apex to join the inferior oblique and inferior rectus supplied by the third nerve was present in both orbits. There is no report of an abnormal muscle slip similar to the one described in the present case.

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References

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