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ORIGINAL ARTICLE

Fat adherence syndrome following inferior oblique surgery: Treatment and outcomes☆

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KEYWORDS
Fat adherence syndrome;
Inferior oblique surgery;
Inferior rectus recession;
Outcome;
Surgery

Abstract
Purpose: Describe surgical treatment and results in a group of patients diagnosed and operated on of fat adherence syndrome following inferior oblique surgery.
Patients, material and methods: Retrospective study of 6 cases diagnosed and treated of fat adherence syndrome following inferior oblique surgery. Mean age was 24.67 years (range, 5–41), 3 males, 5 unilateral and 1 bilateral. Mean vertical deviation was 16.16 pd (range, 4–25). Esotropia was associated in 4 cases, diplopia in other 2, and anomalous head posture in 3. A good outcome was considered when the final deviation was less than 10 pd, with mild limitation of elevation, without anomalous head posture, and a negative duction forced test.
Results: The final vertical deviation was 6.83 pd (range, 0–14). A 2–4 mm inferior rectus recession was performed on 4 patients associated to an inferior oblique surgery/exploration. All patients were operated on once, except 1 case. A good outcome was achieved in 3 patients. Anomalous head posture was resolved in 2 of 3 cases. Diplopia resolved after surgery. Only one case achieved orthophoria. Mean evolution time was 34.83 months (range, 6–78).
Conclusion: In the treatment of the fat adherence syndrome, an inferior rectus recession is recommended, associated to inferior oblique exploration or surgery. A good favorable outcome was only achieved in half of the cases with surgical treatment. Limitation of elevation could not be completely resolved in any of the patients.

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PALABRAS CLAVE
Síndrome de adherencia grasa;
Cirugía del oblicuo inferior;
Recesión del músculo recto inferior;
Resultado;
Cirugía

Síndrome de adherencia grasa tras cirugía del músculo oblicuo inferior: Tratamiento y resultados

Resumen
Objetivo: Describir el tratamiento quirúrgico y los resultados en un grupo de pacientes con diagnóstico de síndrome de adherencia grasa tras una cirugía de oblicuo inferior.
Pacientes, material y métodos: Estudio retrospectivo de 6 casos diagnosticados y tratados de síndrome de adherencia grasa tras una cirugía de oblicuo inferior. La edad media fue de 24,67 años (rango, 5–41), 3 varones, 5 cirugías unilaterales y 1 bilateral. La desviación vertical media fue de 16,16 dioptrías prismáticas (rango, 4–25). Se asoció esotropía en cuatro casos, diplopía en dos, y Tortícolis en tres. Se consideró un buen resultado cuando la desviación final fue inferior a 10 pd, con leve limitación de la elevación, Tortícolis, y resultado negativo en el test de ducción forzada.
Resultados: La desviación vertical final fue de 6,83 pd (rango, 0–14). Se realizó una recesión del músculo recto inferior de 2 a 4 mm en cuatro pacientes, asociada a una cirugía/exploración del oblicuo inferior. A todos los pacientes se les intervino una sola vez, exceptuando un único caso. Se logró un buen resultado en tres pacientes. La postura de cabeza anómala se resolvió en dos de tres casos. La diplopía se resolvió tras la intervención. En un único caso se logró ortoforia. El tiempo medio de evolución fue de 34,83 meses (rango, 6–78).
Conclusión: En el tratamiento del síndrome de adherencia grasa se recomienda la recesión del músculo recto inferior, asociada a una exploración o cirugía del oblicuo inferior. Se logró un resultado favorable y bueno únicamente en la mitad de los casos con tratamiento quirúrgico. La limitación de la elevación no pudo resolverse completamente en ninguno de los pacientes.

Introduction

The fat adherence syndrome, described by Parks, is a rare but serious complication that causes a restrictive ocular motility disorder.[1] There are no actual figures of its incidence, but according to Parks it is 13% after performing inferior oblique myectomy and 2% after its detachment.[2]

The syndrome is caused by disruption of the orbital fat during inferior oblique muscle or scleral buckling surgery, and in rare cases secondary to infection, trauma or blepharoplasty.[3–6] Clinical features are progressive hypotropia of the affected eye, limitation of the elevation (specially in abduction), a very positive forced duction test and an upper lid retraction.[1]

There are other situations following inferior oblique surgery causing limitation of elevation, such as the inferior oblique inclusion syndrome and the anti elevation syndrome.[3,7–9]

As preventive measures, damaging the posterior Tenon capsule must be avoided during inferior oblique surgery. However, since the current cause is still unknown, it is not always possible to correlate this disorder with a bad surgery.[3,10] Published papers on the use of antimetabolites are controversial as they can worsen the inflammation and increase the restriction.[1,11,12]

The treatment is surgical, but difficult, and the recurrence rate is high.[1]

Subjects, material and methods

The purpose of this article is to describe the treatment and results of the fat adherence syndrome in a series of patient who underwent strabismus surgery.

We conducted a retrospective study of 6 patients diagnosed and treated of fat adherence syndrome after prior inferior oblique muscle surgery between 1998 and 2012. Patients with clinical suspicion of fat adherence syndrome were included (hypotropia, positive forced duction test and limitation of elevation). Cases of doubtful differential diagnosis with antielevation syndrome and cases that were not operated on were excluded.

The data collected from the patients' medical records included age, sex, affected eye and initial diagnosis. The preoperative examination included alternate prism and cover testing in the primary position of gaze. The limitation of the elevation in adduction and abduction was classified from −1 (mild) to −3 (severe). The forced duction test was performed in the operating room prior to surgery and confirmed the diagnosis. The type and number of surgeries that were performed previously, the presence of diplopia, cosmetic involvement and the abnormal head posture were recorded and summarized in Table 1.

Mean age of the sample was 24.67 years (SD: 12.97 years; range, 5–41 years), 3 men and 3 females. Of the 6 cases, 5 were unilateral and 1 was bilateral.

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