

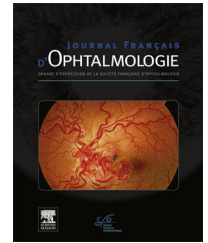


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ORIGINAL ARTICLE

Surgical management of dysthyroid diplopia with preservation of the anterior ciliary vascularization: Review of ten cases



Traitement chirurgical de la diplopie dysthyroïdienne avec respect de la vascularisation ciliaire antérieure : analyse d'une série de dix cas

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KEYWORDS

Ophthalmopathy;
Graves' disease;
Hashimoto;
Scleral ischemia;
Recession;
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Surgical technique

Summary

Purpose. — During the surgical correction of dysthyroid diplopia, the risk of ischemia by transection of the anterior ciliary arteries is well-known. In order to avoid this, we modified the classical surgical technique: (1) through the preservation of the vascular pedicles during muscle recession and (2) if necessary, through a plication (instead of a resection) of the ipsilateral antagonist muscle. The objective to be achieved is thus the resolution of the diplopia without ischemic complications.

Subjects and methods. — We report a prospective series of 10 patients with dysthyroid ophthalmopathy, causing strabismic diplopia, all operated on by the same surgeon (BR) after at least 12 months of euthyroidism. Data collection included: history of previous decompressive surgery, surgical procedure, and oculomotor status before and after surgery.

Results. — Ten patients (8 females), aged 51 to 74 years (mean age, 58.00 ± 7.62 years), were collected between 2008 and 2012. All patients had one or more vascular risk factors (diabetes, smoking, obesity, high blood pressure). With a follow-up from 16 to 67 months (mean \pm SD 27.7 months ± 14.87), surgical outcomes were excellent: diplopia was cured in all cases, with recovery of stereoscopic vision. We had no operative or postoperative complications.

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MOTS CLÉS

Ophtalmopathie ;
Basedow ;
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Ischémie sclérale ;
Recul ;
Plissement ;
Technique
chirurgicale

Conclusions. – The technique of preservation of the anterior ciliary vascularization, which is particularly justified for these fragile patients, is compatible with moderate muscle recessions. For larger deviations, in which a larger recession might increase the proptosis, it is possible to add a plication of the ipsilateral antagonist. This surgical technique made possible the suppression of the diplopia in all cases.

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Résumé

But. – Il existe un risque ischémique (par lésion des artères ciliaires antérieures) lors de la correction chirurgicale d'une diplopie dysthyroïdienne. Pour l'éviter, nous proposons : (1) de préserver les pédicules vasculaires pendant les reculs musculaires (2) si cela est nécessaire, d'ajouter un plissement (plutôt qu'une résection) de l'antagoniste ipsilatéral. L'objectif à atteindre est donc la disparition de la diplopie, sans complication ischémique.

Patients et méthode. – Nous rapportons une série de 10 patients successifs, porteurs d'une ophtalmopathie dysthyroïdienne avec strabisme et diplopie, tous opérés par le même chirurgien (BR), après au moins 12 mois d'euthyroïdie. Le recueil des données a porté sur : les antécédents de chirurgie décompressive, la technique chirurgicale et l'état oculomoteur avant et après le traitement chirurgical.

Résultats. – Il s'agit de dix patients (dont 8 femmes), traités entre 2008 et 2012, âgés de 51 à 74 ans (moyenne \pm DS = 58,0 \pm 7,62 ans). Tous les malades avaient un ou plusieurs facteurs de risque vasculaire (diabète, tabagisme, obésité, hypertension artérielle). Jugés avec un recul de 16 à 67 mois (moyenne \pm DS = 27,7 \pm 14,87 ans), les résultats ont été excellents : disparition de la diplopie dans tous les cas, avec récupération de la vision stéréoscopique et absence de complication per- ou postopératoire.

Conclusions. – La technique de préservation de la vascularisation ciliaire antérieure, qui est particulièrement justifiée chez ces malades fragiles, est compatible avec des reculs musculaires modérés. Pour les déviations plus importantes, où un recul plus marqué est susceptible d'aggraver l'exophtalmie, il est possible d'ajouter un plissement de l'antagoniste ipsilatéral. Ces protocoles chirurgicaux ont permis la suppression de la diplopie dans tous les cas.

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Purpose

Surgical correction of dysthyroid diplopia typically involves the transection of extraocular muscles. A pitfall of such procedures is scleral necrosis due to ischemia [1], which occurs in relation to the patient's age and/or general condition, especially the presence of pathological autoimmunity. Following the publication of a case of scleral necrosis complicating a muscle section [2], we modified our surgical technique to preserve the anterior ciliary vessels, according to a principle dated to 1989 [3,4]. In some cases, this preservation has led to less significant muscle recessions; in those cases plication of the ipsilateral antagonist was added, further to avoid the vascular sections. The criterion of success in this surgery is the disappearance of the diplopia.

Patients and methods

Ten patients (8 females and 2 males) operated on between 2008 and 2012 were included in this study (Table 1). All patients were referred to us (BR) for the surgical correction of diplopia caused by thyroid related orbitopathy (TRO). Age at the beginning of the thyroid disease ranged from 51 to 74 years (mean = 58.00, standard deviation = 7.62

years). Diplopia was the inaugural symptom in 4 cases. In 5 other cases, TRO appeared on average 7 months after hyperthyroidism. In one case, TRO began only 20 years after the thyroid disease. Before consulting the surgeon, all patients were evaluated by an endocrinologist (LDP). Eight patients had Grave's disease and two patients had Hashimoto disease. Three patients were diabetic. One of them suffered from obesity and high blood pressure (patient 4). Eight patients had smoked more than 20 pack-years, and 4 patients were still smokers.

Eight patients had proptosis, which had been treated with intravenous methylprednisolone, associated with radiotherapy in one case and with surgical decompression in another case. Two patients had had thyroidectomy.

Ophthalmological examination (MB) was used to assess eyelid retraction, measure proptosis and the intraocular pressure, and eliminate corneal and conjunctival abnormalities. The oculomotor examination included assessment of limitation of movement and measurement of the deviation in the nine gaze positions. Distant and near angles were measured in diopters by means of prisms using the alternate cover test. Ametropia was corrected. In all cases, the synoptophore was used to search for torsional deviations. Limitations of eye movements were objectified by the Hess-Lees test, and quantified by means of the bowl of Goldman.

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