

Treatment of incomitant strabismus via combined rectus muscle resection-recession surgery

Abordagem de estrabismo incomitante por cirurgia de recuo-resssecção combinadas de músculo reto

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KEYWORDS:

Incomitant strabismus; Recession-resection; Diplopia; Case report.

ABSTRACT

The present study reports the case of a 36-year-old male patient with incomitant strabismus and anomalous head posture with depressed chin to relieve symptoms of diplopia. He was submitted to a combined surgical approach (recession-resection) of the left inferior rectus muscle. The purpose of this surgical technique is to correct the deviation in its most incomitant position, with no damage to ocular alignment in the primary gaze position. It has shown to a safe alternative for cases of incomitant horizontal and vertical strabismus, offering good surgical outcomes.

PALAVRAS-CHAVE:

Estrabismo incomitante; Recuo-resssecção; Diplopia; Eelato de caso.

RESUMO

O presente estudo relata o caso de um paciente, masculino, 36 anos, com estrabismo incomitante e posição viciosa de cabeça com mento deprimido para aliviar sintoma de diplopia. Paciente foi submetido à cirurgia combinada (recuo-resssecção) do músculo reto inferior esquerdo. O objetivo desta técnica cirúrgica é a correção do desvio em sua posição de maior incomitância, sem prejudicar o alinhamento ocular na posição primária do olhar. Atualmente vem se concretizando como uma alternativa segura para casos de estrabismo incomitante horizontal e vertical, oferecendo um bom desfecho cirúrgico.

INTRODUCTION

Patients with incomitant strabismus may have diplopia only in specific gaze positions. A subset of these patients may present a unique clinical situation, wherein the patient is asymptomatic or free of diplopia in the primary position, but has diplopia in functionally important secondary gaze positions, such as infraversion (for reading) or lateroversion (for driving)¹.

The main causes of uncommon horizontal deviations include muscle paresis, ocular restrictions, dissociated horizontal divergence, high accommodative convergence/accommodation (AC/A) ratio, or previous surgery². Although a few surgical techniques have been proposed to correct this, the results have been unsatisfactory, showing the ipsilateral hypocorrection of the affected muscle and hypercorrection in the contralateral field³.

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Received on: Jan 10, 2023. **Accepted on:** Sept 24, 2023.

Funding: No specific financial support was available for this study. **Conflict of interest:** None of the authors have any potential conflict of interest to disclose.

How to cite: Pereira CZ, Saccon BP, Soares JQ, Issaho DC. Treatment of incomitant strabismus via combined rectus muscle resection-recession surgery. *eOftalmo*. 2023;9(4):162-4.

DOI: 10.17545/eOftalmo/2023.0047



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Generally, these patients undergo Faden surgery (posterior fixation suture surgery), which was proposed by Cuppers in 1976 and involves fixating the extraocular muscle onto the sclera posterior to the equator without detaching the muscle from the sclera^{4,5}.

Faden surgery reduces the maximum rotation of the eye, creating a new insertion for the rotational action of the muscle, with minimal to no influence on positions not controlled by this muscle⁵.

In 1994, Scott described a new technique in which the effect of posterior fixation is created without sutures. In this technique, a portion of the muscle is resected and the same muscle is retracted. This recession must be greater than or equal to the resection to produce a selective reduction in muscle function in its field of action⁶. This study reported the case of a man with incomitant strabismus who underwent the combined surgical approach (resection-recession) of the same extraocular muscle as proposed by Scott.

CASE REPORT

A 36-year-old man complained that 4 months prior he started experiencing diplopia when looking down. On ophthalmic examination, the corrected visual acuity (VA) was 20/20 in both the eyes (OU) (right eye [OD]: +1.00 -5.00 165° and left eye [OS]: +0.25 -1.75 35°). His head was abnormal positioned with a depressed chin to relieve the diplopia symptom. Biomicroscopy and fundus examination revealed no alterations. The extrinsic ocular motility examination showed slight hypofunction (1-/-4-) of the right inferior rectus and right superior oblique muscles in infraversion. The alternate prism cover examination with correction is described in Table 1.

The neurological investigation showed no changes. Magnetic resonance imaging of the skull and orbits revealed no anatomical changes in the extraocular muscles. A 6-mm recession and a 3-mm resection of the left inferior rectus muscle was decided.

Table 1. Table of preoperative deviation measurements in the nine gaze positions

ORTHO	X(T) 10	ORTHO
ORTHO	HTD 6	ORTHO
ORTHO	HTD 20	ORTHO

On the first postoperative day, the patient exhibited hypertropia of 6 prism diopters in OD in the infraversion position and was orthophoric in the other positions. After 30 days of the surgery, the patient maintained a corrected VA of 20/20 OU and was orthophoric in all the nine gaze positions in the alternate prism cover examination with correction. The patient remained stable on follow-up at 4 months and was satisfied with the surgical result.

DISCUSSION

Surgery using the technique of resection and recession of the same muscle was first proposed by Scott and has become a safe alternative for cases of horizontal and vertical incomitant strabismus. It aims to weaken the muscle in its field of action without significantly altering the primary gaze position⁶.

Scott initially proposed a large resection, but Bock et al. proposed reducing the resected portion of the muscle due to the impossibility of predicting long-term effects⁷.

Bock et al. concluded that this is a safe procedure for incomitant strabismus involving the lateral rectus, making it possible to use adjustable sutures to eliminate the problem of posterior fixation. For other muscles, however, the authors concluded that they lacked experience to evaluate the effectiveness of the procedure⁷.

The patient who underwent this procedure had difficulty reading, as diplopia occurred only in infraversion, with no complaints in other positions. The deviation was significantly reduced and the result after 4 months was satisfactory for both the surgeon and the patient.

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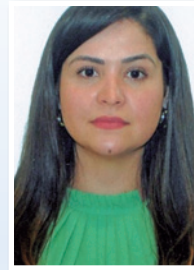
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