

## A Suspected Case of Lateral Rectus Muscle Laceration

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### Abstract

### Case Report

A 45-year-old man presented at our clinic with esotropia after a traffic accident. Orbital computed tomography showed a right lateral orbital wall fracture and the discontinuity at the right lateral rectus muscle was strongly suspected. Upon surgical exploration, we carefully looked for the overlying Tenon's capsule of the lateral rectus muscle suspected to be ruptured. However, the belly of the lateral rectus muscle was completely severed from the insertion. Standard resection – recession surgery achieved acceptable eye position.

**Keywords:** Rupture of the lateral rectus muscle, Recession–resection surgery.

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## INTRODUCTION

Direct traumatic injury to the extraocular muscles has been reported rarely. The most frequently affected muscle is the medial rectus [1-5]. We present a suspected case of right lateral rectus muscle laceration following a traffic accident.

## CASE REPORT

A 45-year-old man pulled his head through the window of the passenger seat of a running car and hit his right head against a pole. He was transported to the emergency department. He was treated for zygomatic fracture reduction due to multiple facial injuries. Examination upon presentation revealed visual acuities of 0.06 in the right eye and 1.2 in the left eye. There was right esotropia of 35 prism diopters with right hypertropia (Figure-1).



Fig-1: Photograph of the patient

He had a loss of right abduction, and diplopia was present in all positions. Orbital computed tomography (CT) showed a right lateral orbital wall fracture

and the discontinuity of the right lateral rectus muscle was strongly suspected (Figure-2 arrows).

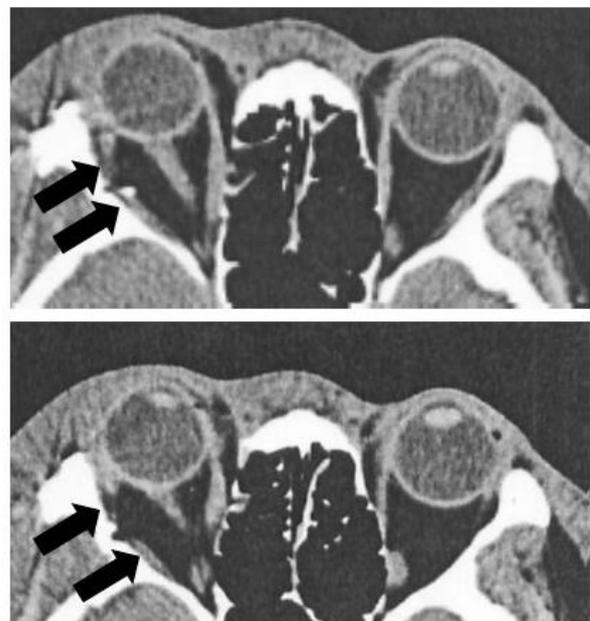


Fig-2: Preoperative computed tomography images of the patient

The discontinuity was suggestive of laceration or rupture of the lateral rectus muscle (arrows).

On the 10th day after trauma, the patient underwent open reduction of the orbital wall fracture. After 2 weeks, strabismus surgery was carried out under

general anesthesia. Preoperative ocular motility photographs in the nine gaze positions were showed in Figure-3.



**Fig-3: Preoperative ocular motility photographs of the patient in the nine gaze positions**

The right eye revealed esotropia and completely restricted abduction.

A forced duction test was not restricted. During surgical exploration, we carefully looked for the overlying Tenon's capsule of the lateral rectus muscle suspected to be ruptured. However, the belly of the lateral rectus muscle was completely severed from the insertion. Therefore, standard right lateral rectus resection (6 mm) and right medial rectus recession (5 mm) was performed. The following day, his esotropia and diplopia were reduced. One week later, there was slight right exotropia in the primary position. At a 3-month follow-up, he was satisfied with the surgical outcome. No postoperative anterior segment ischemia was detected. Postoperative CT showed the continuity at the right lateral rectus muscle (Figure-4).



**Fig-4: Postoperative computed tomography images**

The discontinuity of the lateral rectus muscle was not detected.

## DISCUSSION

Preoperatively, we planned muscle transposition surgery for a ruptured lateral rectus muscle. Fortunately, the lateral rectus muscle was still attached to its anatomic insertion. Therefore, we could perform simple recession–resection surgery.

On CT findings, the location of lateral rectus muscle discontinuity was close to lateral orbital wall fracture. In this patient, he had a loss of right abduction, however, a forced duction test was not restricted. Zhang *et al.*, [6] described that the branches of the abducens nerve ended on the posterior one-third of the lateral rectus muscle in 86% of specimens and on the middle one-third in 14%. If the belly of the lateral rectus muscle was divided into three superior–inferior parts, the nerve commonly entered into the middle one-third in 74 specimens. Therefore, we speculated that abducens nerve was also damaged at the location where abducens nerve was distributed to the lateral rectus muscle.

## CONCLUSIONS

We report a suspected case of lateral rectus muscle laceration. When muscle laceration is suspected, an early CT is mandatory to confirm this possibility and to perform a precocious surgical intervention.

**Disclosure:** The author declares no conflict of interest.

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