

## Exceptional Case of a Isolated Traumatic Posterior Avulsion of the Right Lateral Rectus Muscle

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**Received:** September 18, 2017; **Published:** October 23, 2017

### Abstract

We present an unusual case of contusive trauma of the right eyeball with removal of the orbital insertion of the external right muscle without associated ocular lesion. The aim of the first operative period was to achieve a lesional assessment while the second operative stage was to reinsert the muscle on its posterior attachment by lateral orbitotomy. The muscle spontaneously found its bone attachment at the first operative time leaving only a residual esotropia of 20 diopters, and the patient is satisfied with the results.

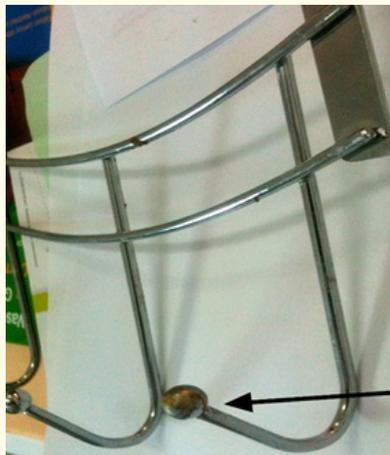
**Keywords:** Trauma Contusion; Avulsion of the Posterior Lateral Rectus Muscle; Diplopia

### Introduction

Disinsertion extraocular muscles is a rare case of myopathy when trauma of the eyeball. We report a case of avulsion of the orbital root muscle lateral rectus right, following a domestic accident. We have developed the clinical of the presentation, and the therapeutic management.

### Observation

Patient aged 40 suffered a contusion injury cut away by an iron hook (Figure 1); the patient entering a dark room hit the wall or coat hook fortunately foam tip is inserted in the right lateral rectus muscle and tore the while the patient fell to the ground.



**Figure 1:** Blunt iron hook for clothing (traumatic agent).

A horizontal diplopia with impaired vision pushed the patient was seen in emergency (10 hours after trauma) in our service. Ophthalmological examination objectified an eyelid edema, red eye with bruising and very significant deviation in the right eye. The examination at the slit lamp and fundus could not be achieved due to the significant deviation of the eyeball and there was no ocular hypotonia to palpate bidigitale.

After préanasthésique examination the patient is operated under general anesthesia, the lesions revealed are conjunctival wound with avulsion of the orbital muscle root right lateral rectus (supero- strips external and external infero Zinn tendon) (Figure 2), while the scleral insertion is intact (Figure 3), and there was no scleral wound or other associated injuries.



Figure 2: Avulsion of the orbital root rectus external law.

a: Upper outer strip of the tendon of Zinn.

b: Inferolateral strip of tendon of Zinn.



Figure 3: Scleral insertion of the muscle intact right lateral rectus.

During this intervention we stuck to the lateral rectus muscle slipped right behind the eyeball in order to subsequently reinsert the root of orbital muscle tendon of Zinn lateral orbital First (side orbitotomy).



**Figure 4:** Ocular motility post-operatively.

*a: Primary position.*

*b: Look to the right: limitation of the right lateral rectus muscle and overaction left medial muscle.*

*c: Look left: normal motility right medial rectus muscles and left side.*

## Results

One day postoperative control objectified decreased deviation of the eyeball and the lamp examination slit and fundus doesn't found any particular signs. The patient was checked a week after with orthoptic assessment that revealed disappearance of diplopia in primary position, recuperation of about 50% of right lateral rectus muscle function and persistent esotropia of 20 diopters. The patient was satisfied with the results, with the correction by prismatic of 20 diopters.

Reintegration to the orbital apex by side orbitotomy is discussed with the patient who refused being operated a second time.

The patient is monitored for a month, but lost after.

## Discussion

Trauma of the extraocular muscles during orbital trauma consist mostly of muscle incarceration in fracture lines of the orbital walls [1].

However, post-traumatic lesions of direct extraocular muscles reported in the literature are muscle tears or rupture [2,3]. While cases of post-traumatic or iatrogenic muscle avulsion (strabismus surgery) [3,4], even rarer, interested the scleral insertion of the extraocular muscles [5,6]. exceptionally our patient has a disinsertion of the posterior side of the right rectus muscle; indeed he was entering a dark room stumbled on a hook with a garment fixed on the wall, its end who is blunt insinuate under the lateral rectus muscle.

The extraocular muscles most commonly affected during the orbital injuries are in order of frequency the medial and inferior rectus [4,6], explained by the exposure of these muscles in the Charles Bell's phenomenon (movement reflex top and outside at the blink reflex or voluntary) [6]. The lateral rectus muscle is rarely touched.

Typically an earlier avulsion of a intact extraocular muscles clenched treated with Vicryl 6/0 sutures at the scleral insertion [7]; but the problem encountered is the identification of muscle that retracts behind from where a previous orbitotomy what transconjunctival widely preferred that the first and the reflex that allows oculocardiac to identified the retracted muscle [8].

In our patient, the surgery was intended to make a lesion assessment and repair possible damage, which is why we used the transconjunctival way and after removing scleral wound we stuck to drag the muscle right side right posterior to later reintegrate it to the orbital apex by side orbitotomy.

The anatomical and functional outcomes postoperatively were very encouraging and satisfactory for the patient who does not accept being operate a second time, hence a range of glasses prismation was prescribed.

Indeed the involvement of compensation mechanism of binocular vision allows making a new balance that was the start of the secondary deviation leading to diplopia axation reducing and improving the good postoperative functional outcomes.

### Conclusion

The posterior muscle avulsion after an orbital trauma is exceptional, the mechanism of injury and the clinical manifestation and the therapeutic management are individuals. The residual oculomotor disturbances have a prominent place in the suites, generally requiring surgical correction.

### Conflicts of Interest

None.

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**Volume 8 Issue 2 October 2017**

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