

# CASE THREE

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Pediátrica (REOP) Strabismus and Pediatric  
Ophthalmology Review

A Case Report of Vertical Deviation with Diplopia and  
Severe Damage of the Inferior Rectus Eye Muscle

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# HISTORY

In January 2013, an 18 year-old male presented to the emergency room after a car accident. The left side of his face showed multiple abrasions and cuts, compromising the left eye. Suturing of the left eye wasn't performed at the E. R.

In August 2013, he traveled to Buenos Aires to be operated for his diplopia.

# Ocular Examination

- VA OD 20/20 – VA OS 20/80 (Emetropic eyes)
- Slit lamp examination showed a scar with inferior eyelid ectropion.
- A thick conjunctival scar was observed, that extended from the nasal to the temporal region, through the area of the inferior rectus muscle.
- There was a pupillary defect with corectopia.
- There was iridodonesis with vitreous in the anterior chamber, although no sub-luxation of the lens was observed.
- Fundus was normal in both eyes.

# Motility Examination

- Diplopia with left eye hypertropia in primary position. (Fig. 1)
- Left hypertropia in the field of action of left Inferior Rectus was seen. (Fig. 2)
- Infra duction in adduction was -1 & was -4 in abduction (Fig. 3).
- Forced duction test was negative.
- Forced Generation Test was weakly positive for inferior rectus.

# Diagnostic Work-up

A poor resolution MRI was performed (in his hometown). The left inferior rectus muscle impairment could not be identified on the MRI (Fig. 4, Fig. 5).

The patient was fusing in primary position, with an 18<sup>Δ</sup> base down prism, without any torsional diplopía.

There was no torsion on fundus examination.

# LEFT EYE HYPERTROPIA

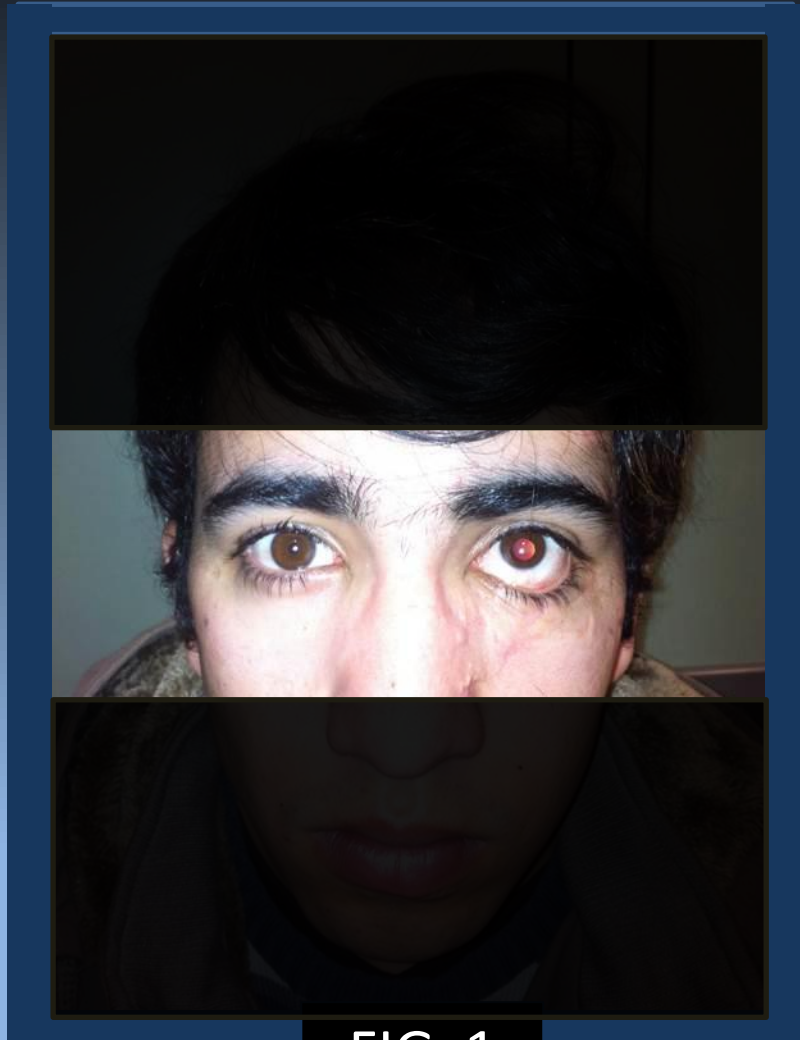


FIG. 1

# LEFT EYE HYPERTROPIA ENHANCED IN LEFT AND DOWN GAZE



FIG. 2

## STUDY OF DUCTION IN LEFT EYE



INFRA-ADDITION:  
LIMITATION - 1



INFERIOR GAZE:  
LIMITATION - 2



INFRA-ABDUCTION:  
LIMITATION - 4

FIG. 3



# MRI : DID NOT PROVIDE ANY USEFUL DATA



FIG. 4

# MRI : DID NOT PROVIDE ANY USEFUL DATA

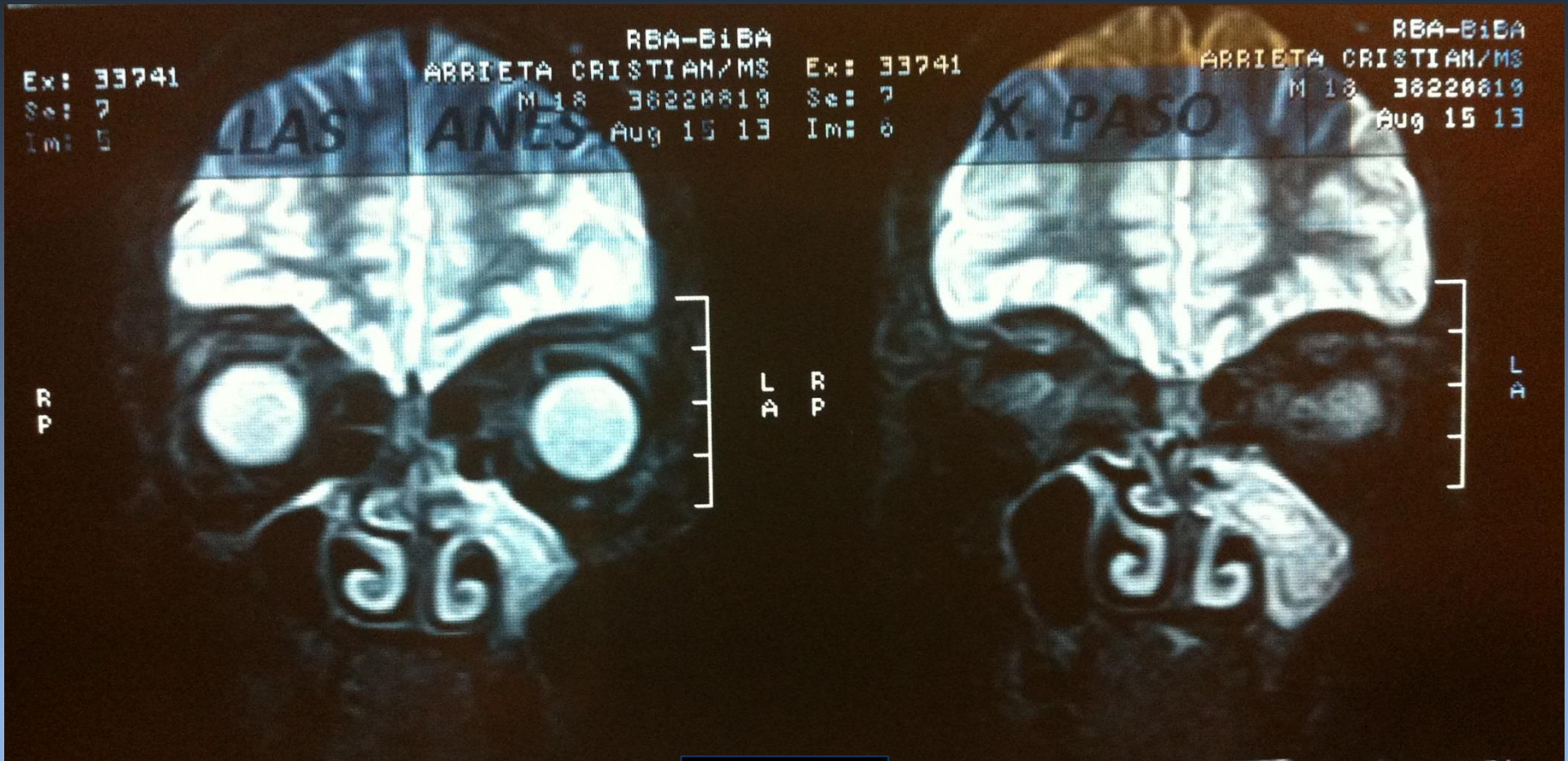


FIG. 5

## DIAGNOSIS

A Tentative Diagnosis Of Traumatic Left Inferior Rectus Muscle Palsy was arrived at, deemed to be caused by direct Muscle Injury due to the Car Crash

EXPLORATORY SURGERY PERFORMED

## EXPLORATORY SURGERY REVEALED :

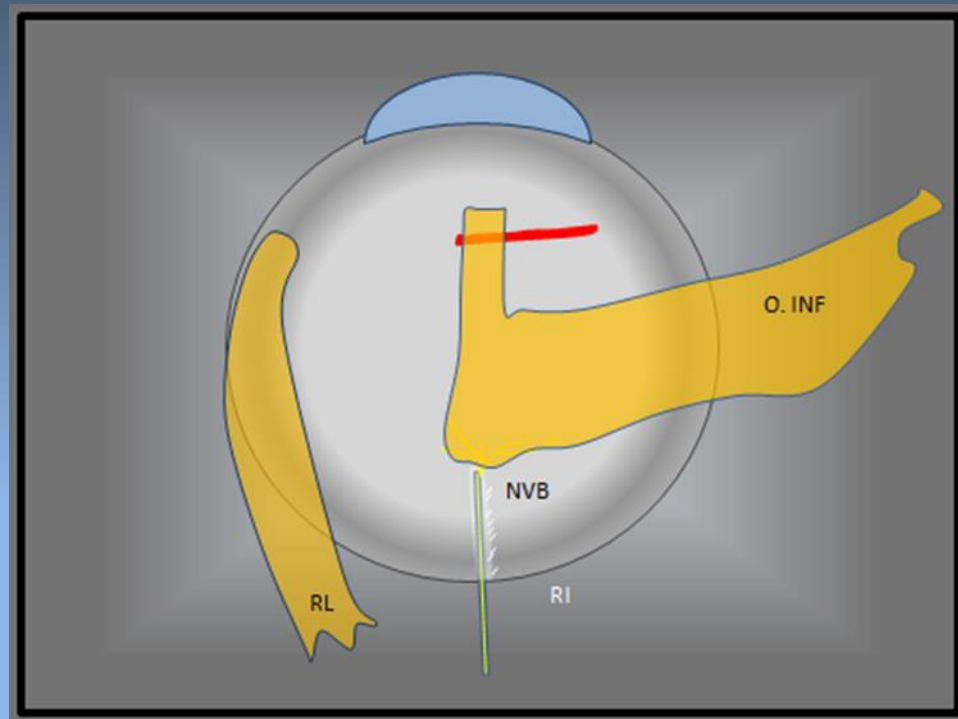
- No Restriction of Left Eye Motility
- Inferior Conjunctival 8 mm Scar observed Parallel to the Limbus

## INFERIOR PERITOMY WAS THEN PERFORMED

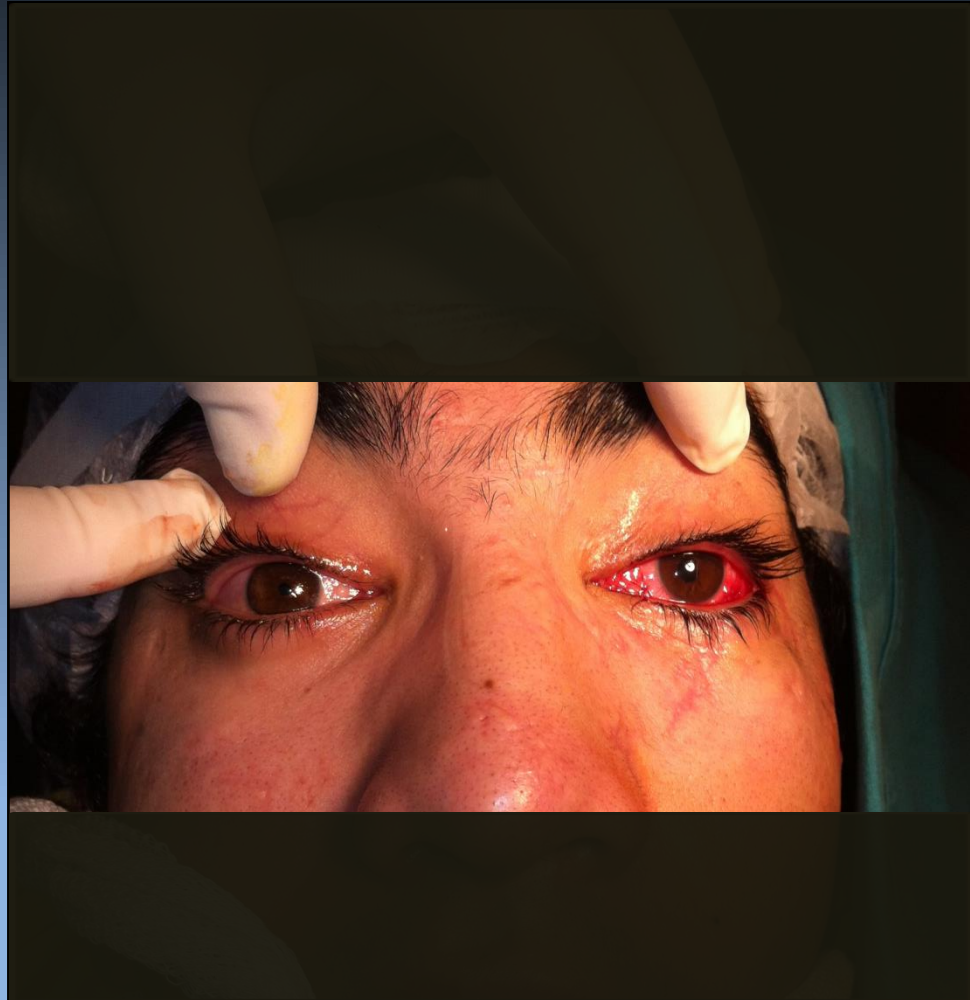
- Inferior rectus muscle was not found
  - There was only a mark at the origin of the insertion, without muscular or tendon fibers
- 
- A detailed search of the body of inferior rectus was carried out under the conjunctival and scleral plane
  - Inferior rectus muscle was not seen either slipped / adherent to some plane

IT WAS DECIDED TO GIVE UP TRYING TO RETRIEVE THE INFERIOR RECTUS MUSCLE

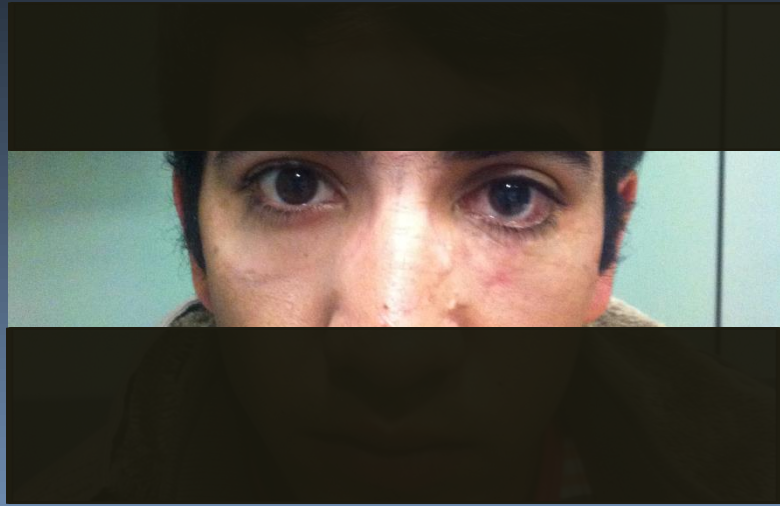
Anterior Transposition of the Inferior Oblique muscle was then carried out by inserting the muscle to the Mim's point above Inferior Rectus insertion further in the temporal side



# POSITION OF THE EYES (IMMEDIATE POST-OP)



## 40 DAYS POST - OP



The patient had a reading difficulty with diplopia in down gaze even 40 days post-op



# 40 DAYS POST - OP



# 40 DAYS POST - OP



# COMPARISON

LINE OF VERTICAL ACTION



PRE-SURGERY



POST-SURGERY



PRE-SURGERY



POST-SURGERY



PRE-SURGERY



POST-SURGERY

ABDUCTION



PRE-SURGERY



POST-SURGERY



PRE-SURGERY



POST-SURGERY



PRE-SURGERY



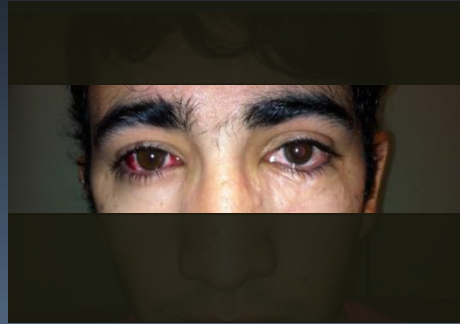
POST-SURGERY

## **A Second Surgery was planned for in January 2014**

Faden surgery of RIGHT eye inferior rectus at 10 mm of insertion was performed

2 Mersilene 5-0 Sutures were used for the procedure

# IMMEDIATELY AFTER FADEN POST-SURGERY



# COMPARISON



PRE-OP



POST-TRANSPOSITION



POST-FADEN

## **If we Consider Restoring Orthotropia as the priority objective, how would you have handled this Case?**

**1) Which of these techniques would you use in order to compensate for the function deficit of a traumatically detached left inferior rectus muscle that cannot be found?**

**a) Inferior Transposition (Total / Half) of both left horizontal rectus muscles?**

**b) Weakening of left superior rectus muscle?**

**c) Weakening of right inferior rectus muscle?**

**d) Anterior transposition of the left inferior oblique muscle, as was done here?**

**2) Would you have carried out a surgery(s), despite not obtaining a good quality MRI?**

**a) Yes**

**b) No**

Could our Experts please answer this Question in Addition to Answering the Questions on the previous slide?

How would you Explain the below mentioned Phenomenon : After Transposition of the Inferior Oblique Eye Muscle, an Improvement was observed in Left Eye Inferior Gaze, while bearing in mind the fact that the Inferior Oblique Eye Muscle is Relaxed in Infraversion?



Thank you !!