Flying under the radar...

Is this really a CN VI Palsy?

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Case 1

- 58 yr male
- Left esotropia – 4yrs
- Referred as a Bilateral CN VI palsy
- Bilateral cataract surgery 5 yrs ago.
- Stroke 8yrs ago, and hyperlipidaemia.

ORTHOPTIC REPORT

D.O.B. | M / F | Age

Doctor | Orthoptist

HISTORY: PRE - OP

VISION

Distance — OD sc ____ cc 20/20 — P.H. ____ — Rx OD +1.00 +0.75 X 10

OS sc ____ cc 20/30 — P.H. ____ — OS +1.25 + 0.75 X 170 + 2.50 Dbifocals

Near: OD sc ____ cc

OS sc ____ cc

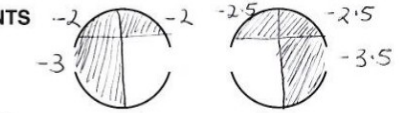
Head Posture:

COVER TEST: D cc Large LET

N cc Large LET → alternates RET

Pupils :

OCULAR MOVEMENTS



Lids :

PRISM COVER TEST:

Near: sc ____ cc LET 55Δ / LHypo 4Δ — with add ( ): ____

Far distance: ____

Distance: sc / cc

Tilt Right: LET 55Δ — Tilt Left: LET 60Δ LHypo 8Δ

LET 50Δ-55Δ LHT 5Δ	LET 50Δ-55Δ LHypo 4-5Δ	LET 55Δ LHypo 6Δ
Gaze Right LET 55Δ LHypo 5-6Δ	LET 50Δ - 55Δ LHypo 4Δ	Gaze Left LET 50Δ LHT 5Δ
	LET 55Δ LHypo 4Δ	

DIAGNOSIS:

BCCH 685a Rev. 2013_10

Case 1

- History of high myopia was elicite
  - -20.0D
- MRI
- Diagnosis of Heavy Eye Syndrom

Post op

ORTHOPTIC REPORT | Doctor | Orthoptist

HISTORY: 2/12 Post - Op

VISION

Distance OD sc ____ cc 20/20 P.H. ____ Rx OD +1·00 + 0·75 x 10

OS sc ____ cc 20/30 P.H. ____ OS +1·25 + 0·75 x 170

+2·50D bifocals

Near: OD sc ____ cc

OS sc ____ cc

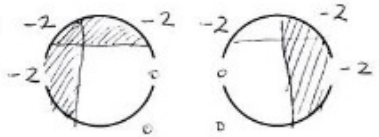
Head Posture:

COVER TEST: cc Nr Moderate LET

D Moderate LET

Pupils :

OCULAR MOVEMENTS



Lids :

PRISM COVER TEST:

Near: sc ____ cc ET 16 Δ with add ( ): ____

Far distance: ____

Distance: sc / cc

Tilt Right: ET 30 Δ RHyp 5 Δ Tilt Left: ET 25 Δ

	ET 30 Δ R Hypo 2 Δ (Limited Upgaze)	
Gaze Right ET 35 Δ RHT 2 Δ (limited gaze)	ET 25 Δ R Hypo 2 Δ	Gaze Left ET 30 Δ RHypo 6 Δ (limited gaze)
	ET 18 Δ	

Case 2

- 55 yo female presenting with progressive esotropia and double vision.
- Referred as Partial CN VI palsy.
- History of bilateral cataract surgery.
- Left amblyopia (Refractive)

CHILDREN'S HOSPITAL
BC WOMEN'S HOSPITAL+ HEALTH CENTRE

ORTHOPTIC REPORT

Name
MRN
D.O.B. M / F Age
Doctor Orthoptist

HISTORY: Pre-Op

VISION

Distance
OD sc 20/20 cc P.H. Rx OD
OS sc 20/70 cc P.H. OS

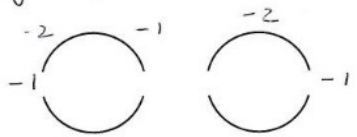
Near:
OD sc cc
OS sc cc

Head Posture:

COVER TEST: NR Dist } Large LET

Pupils :

OCULAR MOVEMENTS



Lids :

PRISM COVER TEST:

Near: sc ET 40Δ / L Hypo 12Δ cc with add ( ): Far distance:

Distance: sc / cc

Tilt Right:		Tilt Left:
ET 45Δ L Hypo 10Δ	ET 40Δ L Hypo 15Δ	ET 35Δ L Hypo 20-25Δ
Gaze Right ET 30Δ L Hypo 20Δ	ET 35Δ - 40Δ L Hypo 10Δ	Gaze Left ET 30Δ
	ET 35Δ L Hypo 8Δ	

DIAGNOSIS:

Case 2

- Elicited a history of high myopia
  - OD -15.O D
  - OS -18.0 D
- CT Scan
- Diagnosis of Heavy eye Syndrome.

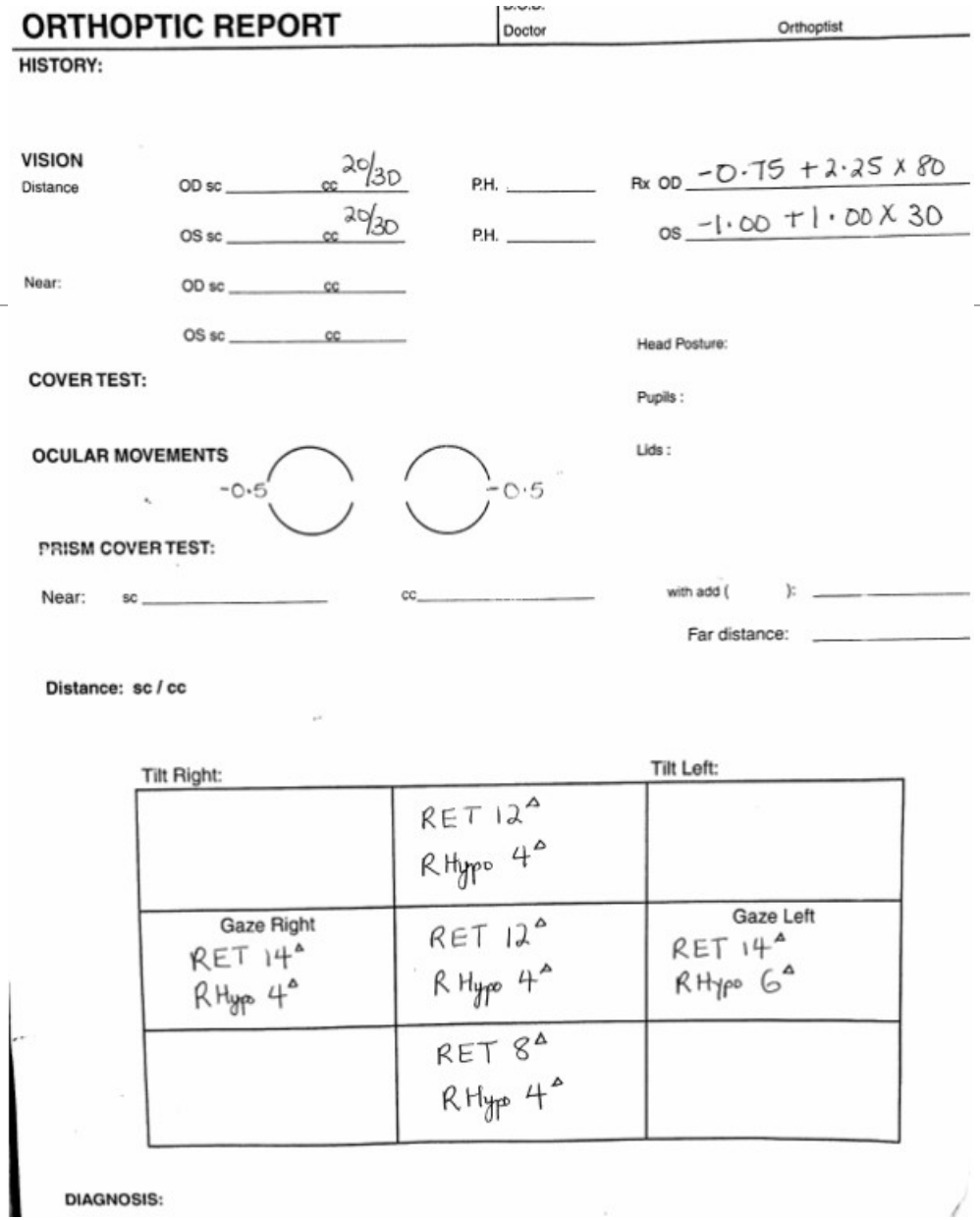
Pre op

post op

CASE 3

- 58 yr female and referred for management of her diplopia.
- Investigated for CN VI palsy
- BCVA : OD 20/30 OS 20/30
- Glasses:
  - OD – 0.75 +2.25 X 80
  - OS – 1.00 +1.00 x 30

Orthoptist Assessment



ORTHOPTIC REPORT Doctor Orthoptist

HISTORY:

VISION

Distance OD sc 20/30 cc P.H. Rx OD -0.75 +2.25 x 80

OS sc 20/30 cc P.H. OS -1.00 +1.00 X 30

Near: OD sc cc

OS sc cc

Head Posture:

COVER TEST:

Pupils :

OCULAR MOVEMENTS

Lids :

-0.5 -0.5

PRISM COVER TEST:

Near: sc cc with add ( ):

Far distance:

Distance: sc / cc

Tilt Right: Tilt Left:

	RET 12Δ R Hypo 4Δ	
Gaze Right RET 14Δ R Hypo 4Δ	RET 12Δ R Hypo 4Δ	Gaze Left RET 14Δ R Hypo 6Δ
	RET 8Δ R Hypo 4Δ	

DIAGNOSIS:

Extraocular Muscle Motility

Case 3

Elicited a history of previous high myopia.

Previous myope OD -14.0D

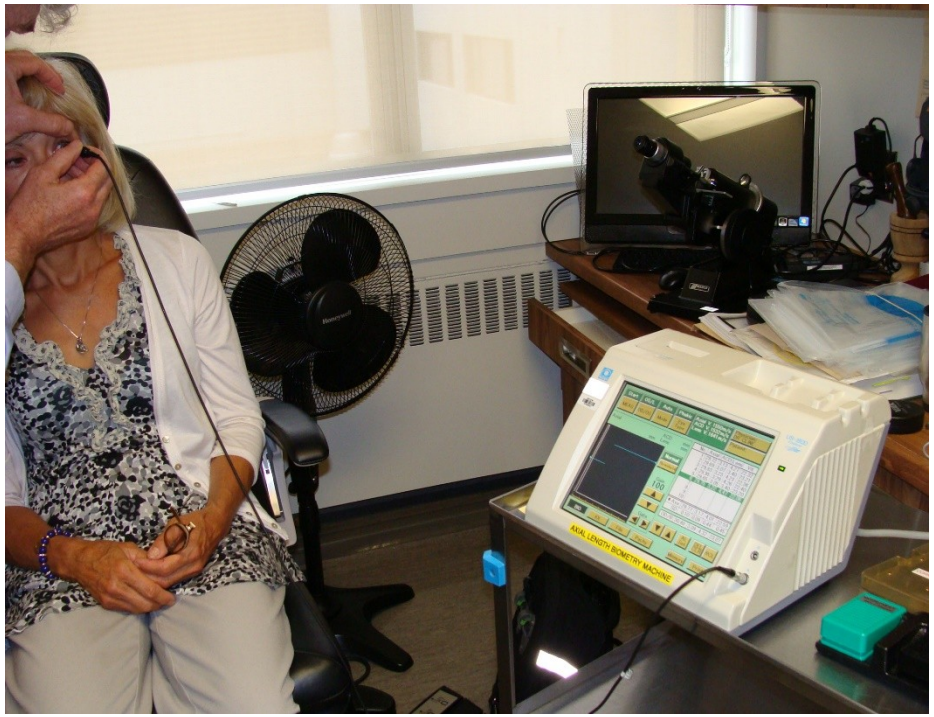
OS -15.0D

Had OD Lasik and OS PRK

- Axial length OD 30.6mm

  OS 29.7mm

MRI



Heavy Eye Syndrome

- Rare type of strabismus occurring in high myopes ,characterized by progressive esotropia and hypotropia.

- Also known as myopic strabismus fixus (MSF)

- Progresses over several years, from a small degree of esotropia with free ocular movements to a large angle fixed esotropia.

Heavy Eye Syndrome

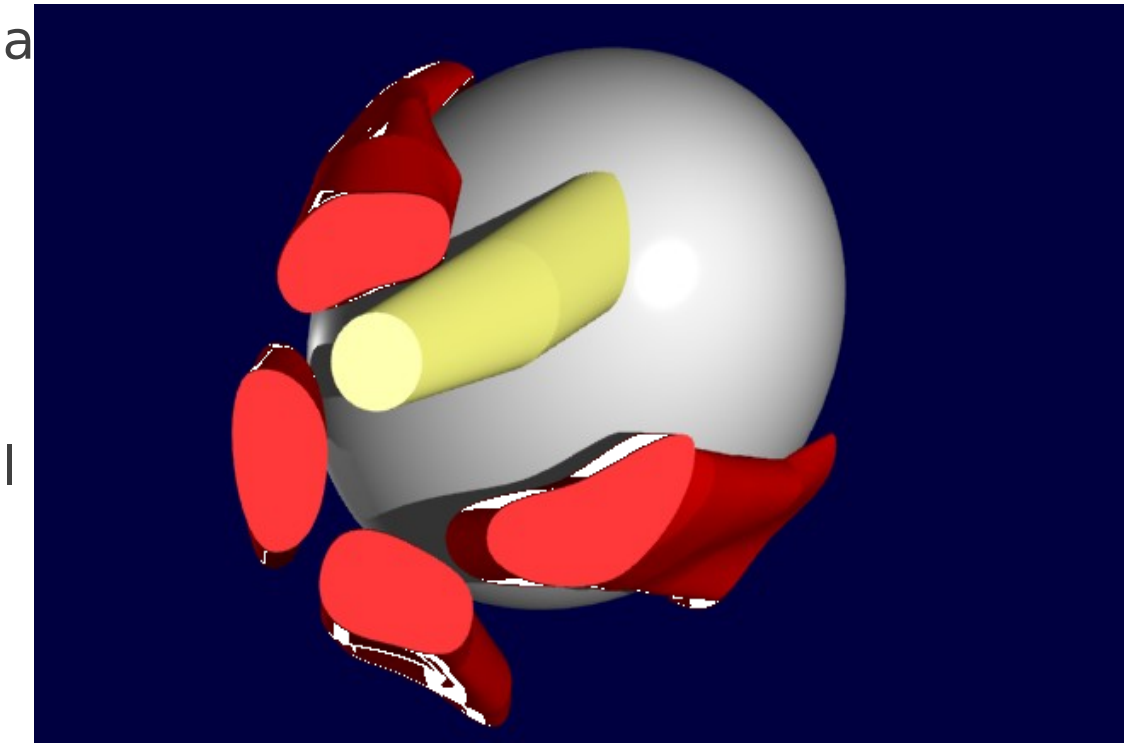
- Condition occurs secondary to the enlarged globe herniating superotemporally through the muscle cone resulting in slippage muscle pulley system.

- Conversion of LR function from abduction to infraduction leading to impaired abduction and supraduction.

Diagnosis?

- Clinical picture of acquired gradual esotropia and possible hypotropia a high myope.

- Radiological evidence of muscle displacement (SR,LR) is essential establish the diagnosis



Historical Perspective

- First described by Villaseca(1) and Martinez(2) who ascribed this to contracture of medial rectus following lateral rectus paralysis.

- Thomas Krzizok(3) described a change in the muscle path of the lateral rectus into the inferotemporal quadrant on MRI.

- Proposed fixed the Lateral rectus with a posterior fixation suture in the physiological meridian at 3 and 9 oclock position with non absorbable sutures to the sclera.

- Yokoyama(4) described Loop myopexy technique in 2001

Treatment

- AIM
  - Restoration of the intermuscular connection to prevent further herniation.
  - Realigning the muscle path by approximating the muscle bellies of the superior and lateral recti.
- Different surgical Approaches
  - Loop myopexy (Yokoyama)
  - Hemi transposition of rectus muscle
  - Partial Jensen’s operation

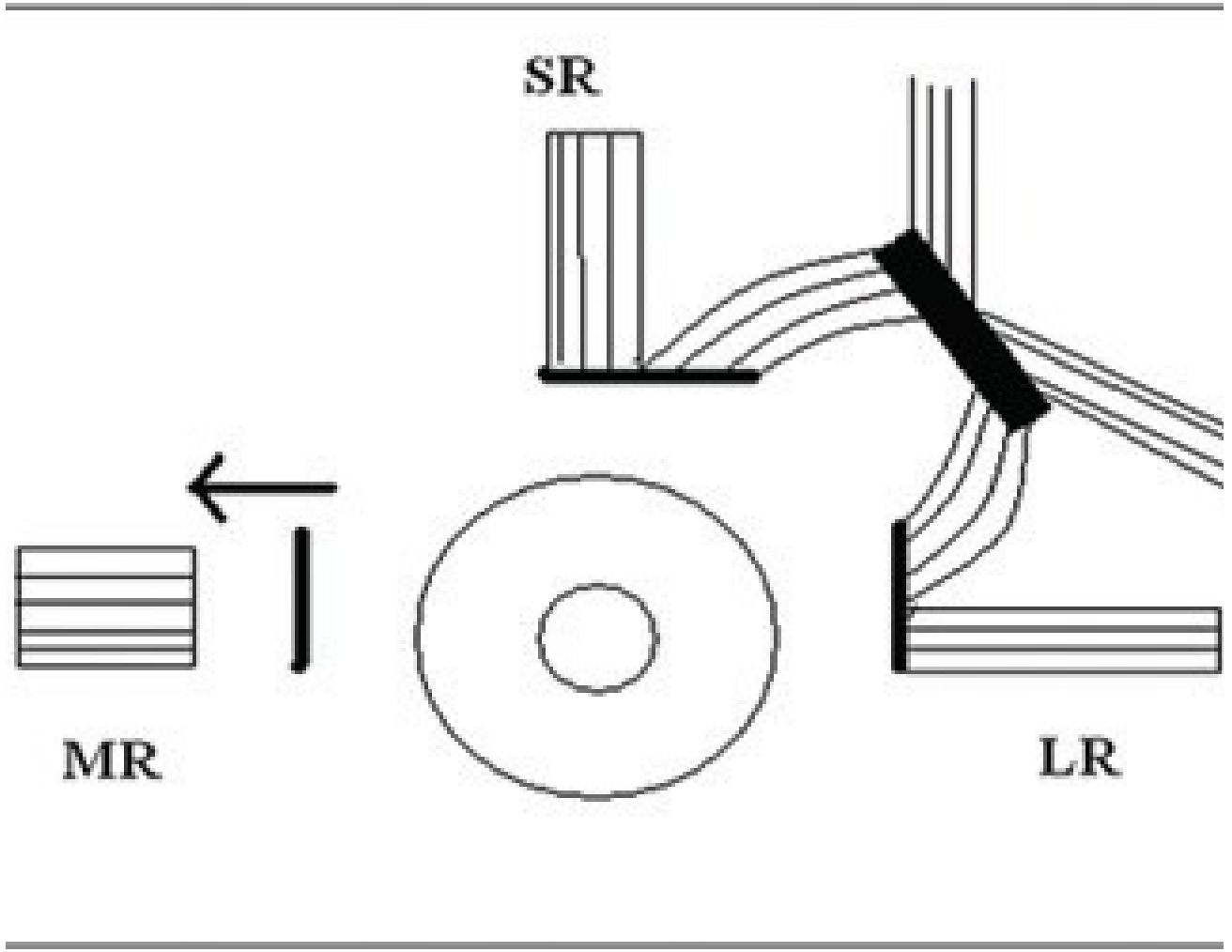
Yamada Procedure

Hemitransposition of the Lateral rectus and

superior rectus with scleral fixation

combined with large

recession of the Medial rectus

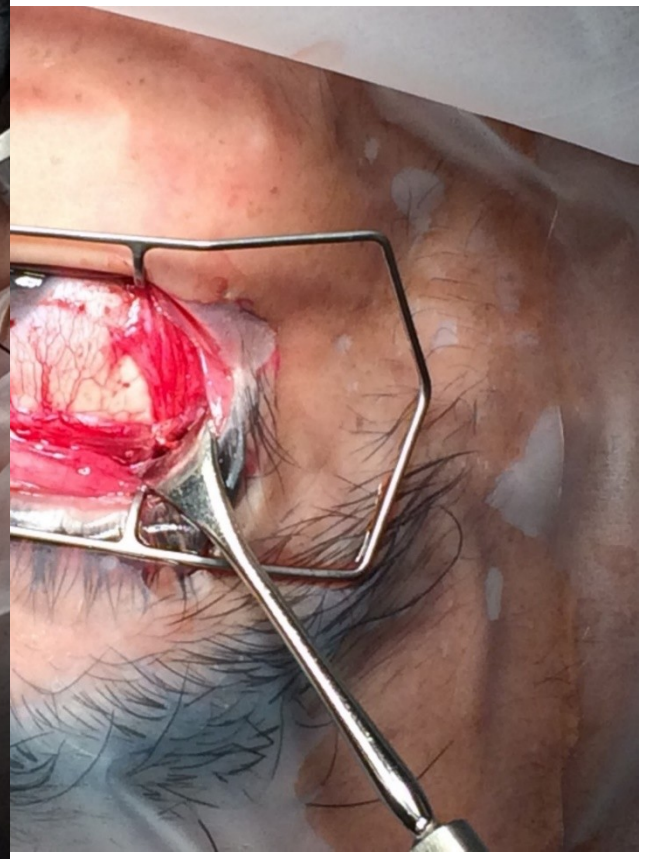


Partial Jensen Procedure

- Hemi transposition of lateral and superior rectus after the muscles are split in half from their insertions up to the equator and tied together with a non absorbable suture

Loop Myopexy (Yokoyama)

1. The superior rectus and lateral rectus muscles are identified through a limbal incision.
2. The superior half of the LR muscle and temporal half of the superior rectus muscle were divided and separated.
3. The hemi muscle bellies were looped and tied together by 5-0 Ethibond non absorbable suture



Conclusion

- Not all limitation of abduction is of a neurological cause.

- Take a refractive history since many high myopes will be presenting with little or no refractive error.

- Accurate diagnosis is important ,treatment is different, resection of the lateral rectus will facilitate dislocation of the eyeball out of the muscle cone.

REFERENCES

1. Villaseca A. Strabismus fixus. Am J Ophthalmol. 1957;48:751–62.

2. Martinez L. A case of fixed strabismus fixus. Am J Ophthalmol. 1948;31:80.

3. Krzizok T, Schroeder B. Measurement of recti eye muscle paths by magnetic resonance imaging in highly myopic and normal subjects. Invest Ophthalmol Vis Sci. 1999;40:2554–60.

4. Yokoyama T, Tabuchi H, Ataka S, Shiraki K, Miki T, Mochizuki K. The mechanism of development in progressive esotropia with high myopia. In: Jan-Tjeerd de Faber., editor. Transactions: 26th Meeting, European Strabismological Association, Barcelona, Spain, September 2000. Lisse [Netherlands]: Swets and Zeitlinger; 2001. pp. 218–21.

Thank you