A 64-year-old male presents with recent-onset double vision in left gaze when looking at distance. Globe retraction and narrowing of the lid fissure are seen during versions. Blood work and MRI have been requested.

I. Case history:
II. Pertinent findings:

- BCVA: OD +1.00 -0.75 x 025 20/20
  OS +0.25 -0.50 x 165 20/20
  ADD +2.00 OU
- 6m: 4Δ Esophoria in primary gaze, 5Δ Esotropia and diplopia in left gaze
- 40cm: 3Δ Exophoria
- Vergence ranges at distance:
  BI X/1/0
  BO X/18/15
- Vergence ranges at near:
  BI X/18/12
  BO X/18/9
- Ocular motility: No restrictions seen, however
  - Eye lids: OS - Narrowing of the palpebral fissure on adduction
  - Globe: OS - Globe retraction on adduction
- Anterior segment evaluation is unremarkable
- Optic nerves are pink, healthy and distinct
- Fundus evaluation is unremarkable
- Neuro-screening: Intact mental status, cranial nerves (1, 5, 7, 9, 10, 11, 12), motor exam, coordination and gait
- Still photography is done
- Videography is done
- Pending results of blood work
- Pending results of MRI. Requested thin slices focusing on path of CN VI
- Patient denies recent trauma, illness or changes in health

III. Differential diagnosis:
- Long standing but undiagnosed Duane’s retraction syndrome
- Blowout fracture
- Orbital metastasis
- Vascular cause: Diabetes, Hypertension, Thyroid, Myasthania Gravis

IV. Diagnosis and discussion
- Patient is tentatively diagnosed with Duane’s retraction syndrome.
- Duane’s retraction syndrome is typically described as a congenital condition in which the nucleus of CN VI is absent or hypoplastic. Thus, the lateral rectus receives aberrant innervations from branches of CNIII. This type of strabismus
may present with any of the following combinations: Deficiency in abduction and/or adduction, vertical upshoot or downshoot, retraction of the globe, narrowing of the palpebral fissure on adduction.4

- The patient did not present with common signs of Duane’s; he did not have any restrictive deficits. However, globe retraction and narrowing of the lid fissure in the presence of esophoria at distance with diplopia in left gaze only suggests possible Duane’s retraction syndrome. Nonetheless, to rule out the co-existence of any systemic or cranial pathologies blood work and a MRI have been requested.

- There are at least two other reported cases where Duane’s retraction syndrome was initially discovered in adulthood.3 Both of these patients presented with sudden onset of diplopia. It is suspected that adult onset of double vision may be due to fibrosis of lateral rectus and decreases in fusional vergence ranges.3

V. Treatment, management

- Treatment of Duane’s retraction syndrome may include: monitoring, yoked prism, relieveing prism, vision therapy and surgery.

- The patient elected to try vision therapy to increase negative fusional vergence ranges at distance. Patient has been enrolled in vision therapy program for three weeks and has demonstrated improvements in his divergence ability.

VI. Conclusion

- Duane’s retraction syndrome must be considered when adults present with new onset of double vision.

- In the absence of motility restrictions, attention must be paid to subtle signs (globe retraction, narrowing of the lid fissure) associated with Duane’s retraction syndrome.

- It is crucial to rule out systemic, traumatic, inflammatory and cranial causes of double vision as more than one condition may co-exist.

- divergence ability.

VII. References:


