Case Report : Thyroid Eye Disease
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Thyroid Eye Disease

• More common in female to male
• 90% associated with hyperthyroidism (Graves’ disease).
• 10% associated with hypothyroidism, euthyroidism, Hashimoto’s disease.
• About 50% of Graves’ disease patient will experience some form of thyroid eye disease
• 3 - 5 % with sight threatening disease

Thyroid Eye Disease

• Signs
  – Conjunctival injection, chemosis, eyelid edema
  – Retro-bulbar pain
  – Proptosis, exophthalmos
  – Eyelid retraction
  – Exposure keratopathy
  – Strabismus
  – Compressive optic neuropathy

Case Report - LC

• Routine review
• Vision ok with current Rx
• Intermittent diplopia, more frequent lately, almost every night.
  – Both horizontal and vertical diplopia
  – Worse at night & distance
• GH : good, no medications

Initial presentation

• Subjective refraction
  R -10.00/-1.00 X 10 6/6
  L -10.00/-1.50 X 172 6/6
• Pupil reaction : PERRLA, -ve MG
• Ocular health examination - good

Initial presentation

• Ocular motility
  – Limitation of upgaze in both adduction & abduction, Right & Left eye
    (From 2003 records, ocular motility was normal, and full with no restriction)
• Cover test
  – Distance: L hypertropia, exophoria
  – Near : L hypertropia, exophoria
    (From 2003 records, large exophoria was noted in both distance & near)
Initial Presentation

- Phoria (Howell phoria card)
  - Distance: 10 pd exo
  - Near: 6 pd exo
- Maddox rod
  - Distance: 6 pd BUR
  - Near: 6 pd BUR
- To achieve single vision at both distance & near, 3pd BUR required

Differential Diagnosis

- Decompensation of an existing phoria
- Myasthenia Gravis
- Cranial nerve palsies
- Internuclear Ophthalmoplegia
- Heavy eye syndrome
- Brain lesion/tumor
Management

- 3 pd BUR (split) were prescribed in SVD, along with SVD without prism
- Referral to ophthalm for further investigation, including MRI, to rule out any sinister cause

Further investigation

- Report from ophthalm
  - Unusual vertical strabismus, non-diagnostic pattern
  - MRI required to determine the cause of the strabismus

Further investigation

- MRI scan
  - Globes are normal size and shape
  - Extra-ocular muscles attachments are conventional
  - BUT diffuse increase in size of all extra-ocular muscles, bilaterally & symmetrically is suggestive of: THYROID EYE DISEASE

Further investigation

- T3, T4 & TSH levels - Normal
- TSH receptor antibodies levels - increased
- Increase in TSH receptor antibodies indicates previous treatment for hyperthyroidism, and higher chance of recurrence

Further investigation

- LC confirmed previous treatment for thyroid issues about 5 years ago.
- Thyroid function test should be performed every 12 months

Last visit - Sept 2011

- Routine review
- Prism Rx worn about 90% of the time now.
- No diplopia in distance or near
Last visit - Sept 2011

• Maddox rod
  – Distance: 10 pd BUR
  – Near : 8 pd BUR
• With 3 pd BUR - single vision in 95% of the time
• With 4 pd BUR - single vision in 100% of the time

Last visit - Sept 2011

• Optic nerve - no change, healthy.
• IOP - R & L 18mmHg at primary gaze, 19 mmHg at upgaze
• Continue with current Rx
• Review every 12 months

Possible complications

• Worsening of strabismus - surgery ?
• Differential IOP in primary gaze vs upgaze
• Compressive optic neuropathy

Something else to think about

• Cessation of smoking
  – Higher incidence of smoking and severity of thyroid eye disease
• Management of systemic thyroid disease

Thank you!

Reference