Asymmetric proptosis as a presenting symptom of Hashimoto's thyroiditis with hypothyroidism

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DESCRIPTION

Thyroid ophthalmopathy is usually associated with Graves' disease; however, in 6.2% of patients with thyroid eye disease it can be associated with hypothyroidism.¹ A 54-year-old woman from Tamil Nadu presented to our outpatient department with sudden onset of binocular diplopia for the past 5 months. She subsequently noticed that her right eye became more prominent than her left eye. She had no other focal deficits or features of raised intracranial pressure. Along with these ocular symptoms, the patient had fatigue and increased drowsiness over the past 5 months and had gained around 3 kg of weight over the same duration. She however did not complain of constipation, voice changes, pedal swelling, cold intolerance or facial puffiness. She had no features suggestive of hyperthyroidism in the form of tremors, increased sweating, palpitations, hyperdefecation or restlessness. She had no history of hyperthyroidism. She had no history of receiving treatment for hypothyroidism or hyperthyroidism. There were no associated symptoms of neck swelling noticed by the patient; neither did she complain of any compressive symptoms. She also had no history to suggest associated autoimmune disorders.

The patient was evaluated elsewhere initially for these complaints and found to have thyroid-stimulating hormone (TSH) of 0.31 μ IU/mL and a free T4 of 1.5 ng%. She also underwent an MRI of the

brain at that stage which did not show any significant abnormality. She was suspected to have myasthenia gravis and was started on neostigmine for the same with which she had some improvement in her diplopia; however, she stopped her medications 1 month prior to presentation and did not have any worsening of symptoms. She presented to us at this stage with persistent protrusion of the right eye. She had no pain, watering or diminished vision in the right eye. She had no features suggestive of hyperthyroidism, but had noticed that her menstrual cycles were irregular. On examination her pulse rate was 80/min and blood pressure was 120/70 mm Hg. She had a diffusely enlarged firm thyroid gland (figure 1A). She was found to have asymmetric proptosis of the right eye with lid retraction and lid lag (figure 1B,C) without evidence of proptosis in the left eye (figure 1D).

Her ophthalmometry (Hertel's) reading at 95 mm was 21 mm in the right eye and 20 mm in the left eye. Ocular movements were restricted in abduction. Pressure in straight gaze was 80 mm Hg in the right eye and 14 mm Hg in the left eye. Pressure

Figure 1 (A) Diffusely enlarged thyroid gland. (B) Exophthalmos of the right eye more than the left eye. (C, D) Proptosis of the right eye compared with the left eye with no proptosis.

Figure 2 (A) Fat-saturated T2-weighted axial image at level of the orbits showing mild right proptosis. Note the increased bulk of the right medial rectus compared with the left with sparing of the tendinous insertion. (B) Fat-saturated T2-weighted coronal image of the orbit shows increased bulk of the right inferior rectus (open arrowhead), right medial rectus (curved arrow) and the left inferior rectus (solid arrowhead) with T2 hyperintense signal within the muscles suggestive of oedema. In addition, there is 'dirty' appearance of the retro-orbital fat in both orbits due to inflammation (white arrows). (C) Postcontrast fat-suppressed T1-weighted coronal image of the orbits shows increased enhancement of the involved muscles.

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in upgaze was 22 mm Hg in the right eye and 16 mm Hg in the left eye. However, her visual fields and fundus were normal. Other system's examination was normal. In view of asymmetric proptosis of the eyes and lack of features of thyrotoxicosis, the possibilities of asymmetric thyroid eye disease, retro-orbital/orbital mass, or granulomatous diseases were considered. In view of the partial improvement of symptoms with neostigmine, the possibility of myasthenia though unlikely was also considered and she was evaluated for these.

Her investigations revealed a TSH of 42.797 μ IU/mL, total T4 of 7.3 mcg%, free T4 of 0.8 ng% with anti-thyroperoxidase antibodies (1683 IU/mL) and anti-thyroglobulin antibodies (697 IU/mL) with normal TSH receptor antibodies (0.36 IU/L). The workup for myasthenia including anti-acetylcholine receptor antibodies and repetitive nerve stimulation testing were negative.

The MRI of the orbit showed the findings as in [figure 2A–C](#). Thus, a diagnosis of autoimmune thyroiditis (Hashimoto's) with hypothyroidism and asymmetric thyroid ophthalmopathy was made. Our patient was started on levothyroxine (100 mcg/day) with which she improved and her proptosis also abated gradually over the next 3–4 months. Due to the significant clinical improvement in her proptosis at first follow-up at 4 months and owing to her poor financial condition, a repeat MRI of the orbits was deferred until 6 months post-therapy. She was lost to follow-up after the initial visit. Unilateral proptosis can be an

ominous sign. However, rarely it can be due to thyroid-associated eye disease which itself may be associated with hypothyroidism rather than hyperthyroidism.²

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REFERENCES

- 1 Kashkouli MB, Kaghazkanani R, Heidari I, *et al*. Bilateral versus unilateral thyroid eye disease. *Indian J Ophthalmol* 2011;59:363–6.
- 2 Eckstein AK, Lösch C, Glowacka D, *et al*. Euthyroid and primarily hypothyroid patients develop milder and significantly more asymmetrical Graves ophthalmopathy. *Br J Ophthalmol* 2009;93:1052–6.

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