

Lateral Flare Sign of Thyroid-Associated Eye Disease

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A 44-year-old male smoker presented with a six-month history of bulging and redness in his right eye. He also reported intermittent binocular double vision, which was more noticeable on upward gaze. There was no history of trauma, headache, vision loss, or tachycardia. Systemic examination was unremarkable. On examination, the patient had conjunctival redness, hyperemia, proptosis, and swelling with temporal flaring of the right upper eyelid (Figure 1A). Ocular motility and visual acuity were within normal limits. Thyroid function tests revealed TSH: 0.81 (reference range: 0.35–5.50), Free T4: 1.7 (0.80–2.19), and T3: 1.58 (0.87–1.78). Orbital MRI showed right eye proptosis and significant thickening with edema of the right inferior rectus muscle, without involvement of other extraocular muscles (Figure 1B). The TSH receptor antibody (TRAb) level was elevated at 2.38 IU/L (reference: <1.22).

A diagnosis of thyroid-associated eye disease (TED) was made, and the patient was closely monitored. At a subsequent visit, TSH was found to be suppressed and TRAB levels had increased further. The patient was started on low dose carbimazole, advised to strictly avoid smoking, and treated with intravenous methylprednisolone therapy.

TED is associated with hyperthyroidism in about 90% of cases.^{1,2} Orbital involvement in TED is typically bilateral.³ Euthyroid and unilateral presentations are uncommon and should prompt consideration of other causes, such as orbital pseudotumor, mucocele, malignant lymphoma, leukemia, hemangioma, or lacrimal gland tumors.⁴

In this context, the presence of upper eyelid retraction with a 'lateral flare sign' may suggest TED.⁵ While increased sympathetic stimulation of Müller's muscle is usually

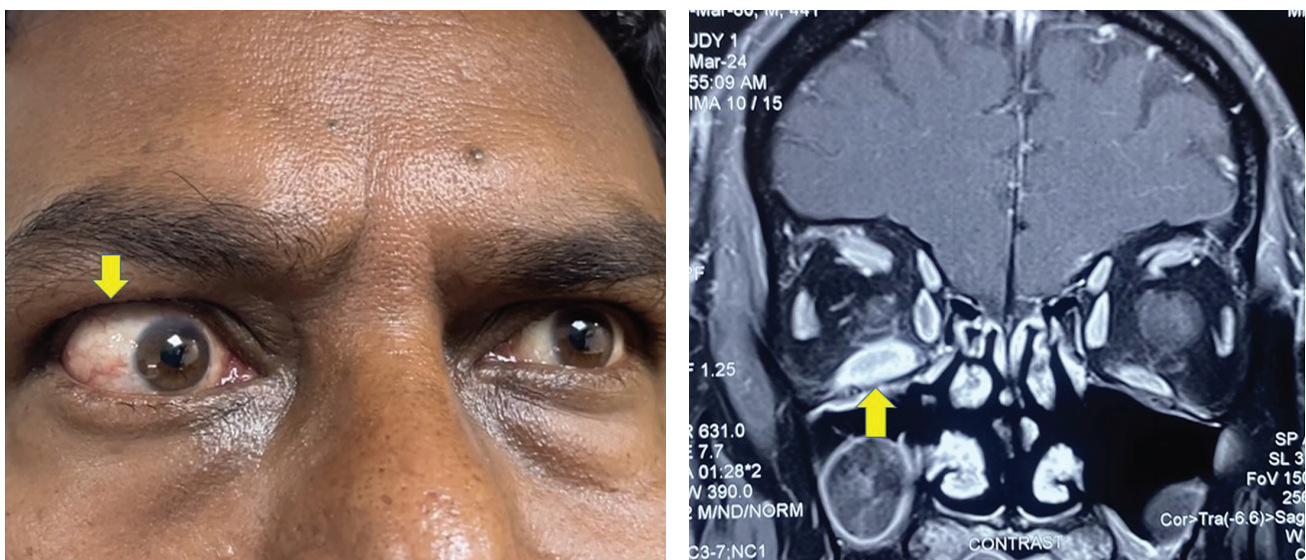


Figure 1. (A) Thyroid associated eye disease with lid retraction and 'lateral flare sign' in right eye. (B) Magnetic resonance imaging (MRI) with T2 contrast image showing thickening and oedematous changes in right inferior rectus muscle.

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responsible for lid retraction in these cases, the 'lateral flare' observed in TED can be attributed to enlargement or fibrosis of the levator muscle, resulting from its increased activity to compensate for the ipsilateral tight inferior rectus muscle. Additionally, scarring between the levator aponeurosis and the inflamed lacrimal gland fascia or adjacent soft tissues may contribute to this clinical sign.^{2,5}

Ethical Consideration

Patient consent was obtained before submission of the manuscript.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

CRedit Author Statement

SS: Conceptualization, Validation, Formal analysis, Investigation, Data curation, Writing – original draft preparation; **TA:** Conceptualization, Validation, Formal analysis, Investigation, Data curation, Writing – original draft preparation; **MB:** Investigation, Writing – review and editing, Supervision.

Data Availability Statement

Datasets generated and analyzed are included in the published article.

Author Disclosure

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References

1. Bartalena L, Tanda ML. Current concepts regarding Graves' orbitopathy. *J Intern Med.* 2022;292(5):692-716. PMID: 35604323 PMID: PMC9796560 DOI: 10.1111/joim.13524
2. Shah SS, Patel BC. Thyroid eye disease. In: *StatPearls.* Treasure Island (FL): StatPearls Publishing; 2024.
3. Kashkouli M, Kaghazkanani R, Heidari I, et al. Bilateral versus unilateral thyroid eye disease. *Indian J Ophthalmol.* 2011;59(5):363-6. PMID: 21836341 PMID: PMC3159317 DOI: 10.4103/0301-4738.83612
4. Burch HB, Perros P, Bednarczuk T, et al. Management of thyroid eye disease: A consensus statement by the American Thyroid Association and the European Thyroid Association. *Thyroid.* 2022;32(12):1439-70. PMID: 36480280 PMID: PMC9807259 DOI: 10.1089/thy.2022.0251
5. Equiterio BS, Garcia DM, Cruz AA, et al. Lid flare measurement with lateral midpupil distances. *Curr Eye Res.* 2021;46(9):1309-13. PMID: 33517799 DOI: 10.1080/02713683.2021.1878541

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