

A Typical Grave's

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Graves disease is an autoimmune disorder of the thyroid gland. It is a very rare condition that a Graves patient presents with spontaneous hypothyroidism as a natural course of the disease. Hypothyroidism during the course of Graves disease occurs commonly due to radio-iodine (RAI) therapy, thyroidectomy or anti-thyroid drug (ATD) treatment.

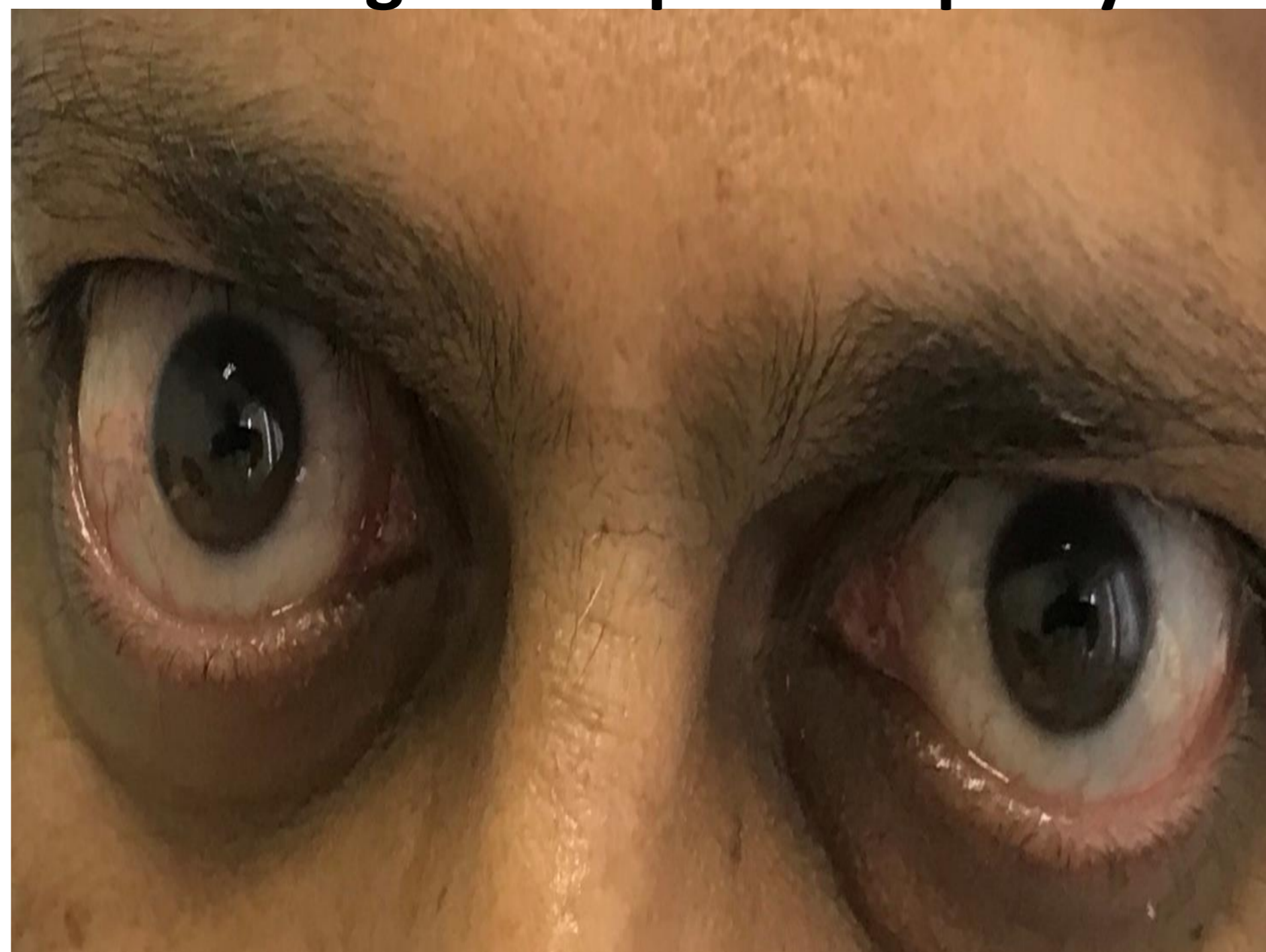
Presentation

- A 44 years old male heavy smoker diagnosed with graves disease with typical clinical manifestations of graves disease at age of 34 years.
- His clinical course was characterized with remissions and relapses after discontinuation of ATD.
- He had mild to moderate graves ophthalmopathy at the time of diagnosis along with dermatopathy, which remitted after topical corticosteroids.
- Exacerbation of ophthalmopathy requiring rescue pulse methylprednisolone.
- During the course of treatment the patient started gaining weight, feels fatigued and cold intolerance, labs revealed high TSH above 200 milli IU/L and T4 of 2 milli IU/L, ATD was discontinued and started on thyroxine with gradual escalation to present dose of 200 mcg.

Examination

- Bilateral proptosis.
- No palpable goiter.
- Moderate graves ophthalmopathy.
- Graves dermatopathy.

Picture 1: graves ophthalmopathy



Discussion

- Few reports have identified blocking thyrotropin receptor antibodies (TSHR Abs) as a pathogenic mechanism explaining spontaneous hypothyroidism after anti-thyroid drug (ATD) treatment of Graves' disease.
- The difference in the course of blocking TSHR Ab was associated with the difference in epitope reactivities of TRAb during hypothyroid phase that developed after ATD.

Biochemistry

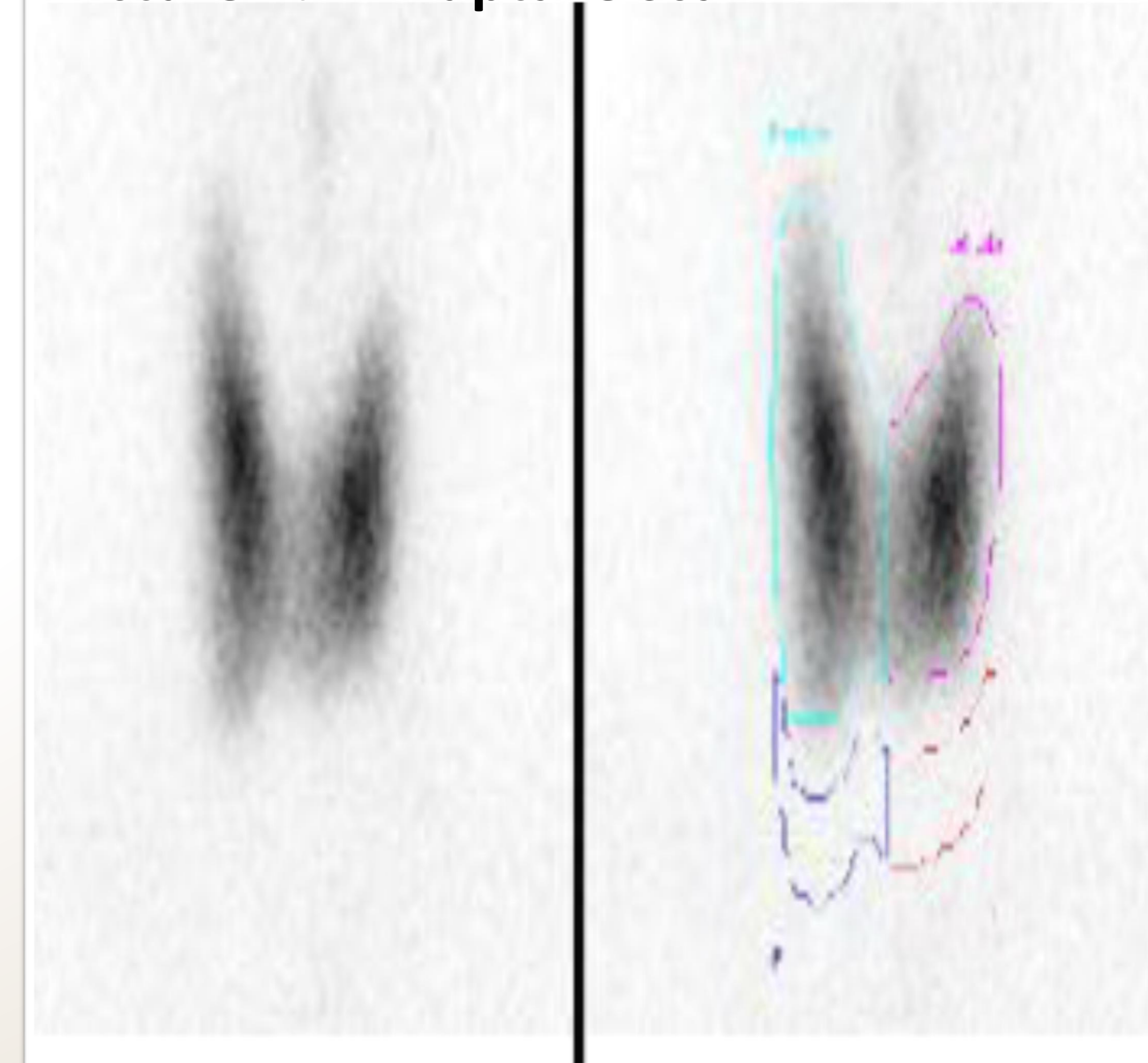
Table 1: initial TSH and Abs off ATD

| TSH | TRAB Abs | Thyroglobulin Abs | TPO Abs |
|------------------------------|-----------------------|-------------------|--------------------------|
| 0.01 milli IU/L (0.4-4.2) | 0.82 IU/L (≤ 1.75) | 4000 (≤ 115) | 600 IU/mL (0.00-9.00) |

Table 2: latest TSH and Abs on thyroxine 200mcg

| TSH | TRAB Abs | Thyroglobulin Abs | TPO Abs |
|------------------------------|-----------------------|-------------------|--------------------------|
| 0.01 milli IU/L (0.4-4.2) | 0.82 IU/L (≤ 1.75) | 4000 (≤ 115) | 600 IU/mL (0.00-9.00) |

Picture 2: RAI uptake scan



Conclusion

- This case highlights the importance of spontaneous development of hypothyroidism in hyperthyroid graves. Hyper- and hypothyroidism occur depending on the predominant antibody during that period. Switching between stimulating and blocking antibodies. Thioamides have been associated with decreased levels of stimulating-TRAb, allowing blocking-TRAb to dominate. Nonetheless, the switch from one end of the spectrum to the other remains difficult to predict.

References:

The Journal of Clinical Endocrinology & Metabolism, Volume 64, Issue 4, 1 April 1987, Pages 718-722,

Acknowledgements

Authors are grateful to tawam hospital its staff and patient for their help with this case