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Thyroid Ophthalmopathy And Acropachy In Graves' Disease: A Case Report From Hilly North India

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Abstract

Hyperthyroidism is a disorder that involves excess synthesis and secretion of thyroid hormones by the thyroid gland. The triad of exophthalmos, pretibial myxedema, and acropachy occurs in less than 1% of patients. The natural history of the disease progresses from active to inactive fibrotic stage over a period of years [1]. Treatment is based on the clinical severity of the disease. This case report is a detailed description of a 70 years old female with ophthalmopathy and acropachy.

Keywords: Hyperthyroidism, ophthalmopathy, acropachy

Introduction

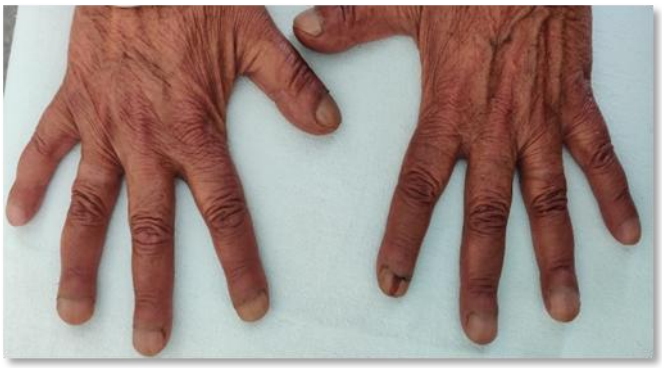
Graves' ophthalmopathy or thyroid associated ophthalmopathy is a rare disease with an incidence of approximately 2.96–4.45 per 10,000 people per year. [2] This is characterized by enlargement of the extraocular muscles, fatty and connective tissue volume. Thyroid acropachy refers to clubbing in the patients with Graves' disease. Clinically, it occurs in association with coincident skin and orbital involvement. Ophthalmopathy affects about 30% of patients with Graves' disease, dermopathy about 4%, and acropachy about 1% of patients. [3] This is a case report of a 70 years old female presenting with both these extra-thyroid manifestations of Graves' disease.

Case Report:

A 70 years old female, who is an ex-smoker, hailing from the sub-Himalayan region of north India, was diagnosed with Graves' disease when she was 40 years of age. Her diagnosis was based on her clinical history and laboratory examination. She gave a history of generalised weakness, easy fatigability, heat intolerance, with fine tremors and decrease in weight despite increase in appetite. This was supported with the laboratory findings of a TSH of 0.02 µIU and demonstration anti-TPO antibodies. The patient was started on Tab. Propylthiouracil followed by radio-iodine (RAI) administration. Following six months of RAI, the patient's reports were suggestive of hypothyroidism, with TSH of 14 µIU. She was started on Tab. Levothyroxine 1.6 µg/kg at a dose of 100 µg. Her current lab reports reveal a euthyroid state on treatment.

The patient came for follow-up and we noticed the patient had clubbing in bilateral upper and lower limbs with skin tightening, and eyes showed peri-orbital edema and proptosis in bilateral eyes. These findings were consistent with thyroid acropachy and ophthalmopathy respectively.

Figure 1. Bilateral hands and feet showing clubbing, i.e. acropachy



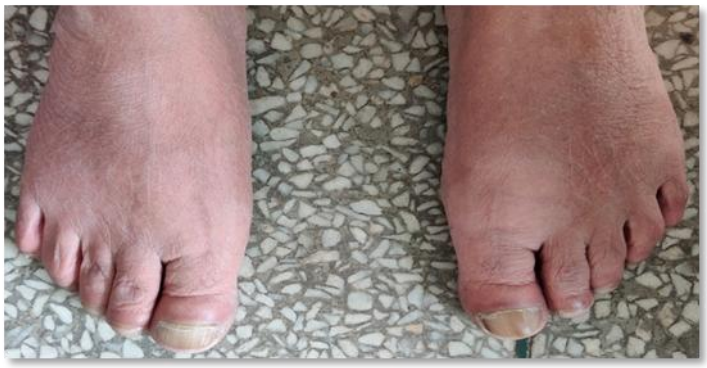


Figure 2: X-ray bilateral hands showing periosteal reaction

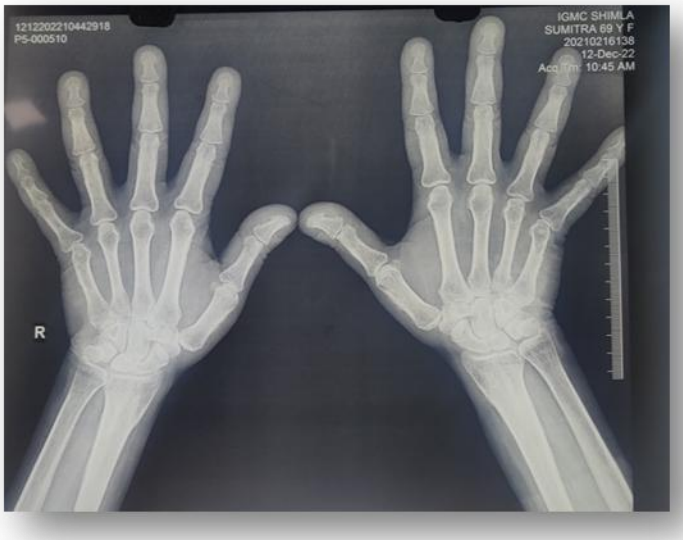


Fig.4: Soft tissue swelling of bilateral upper eyelids

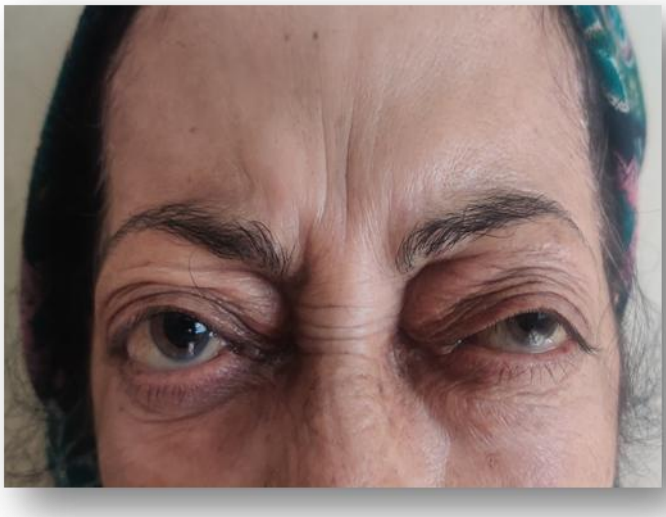
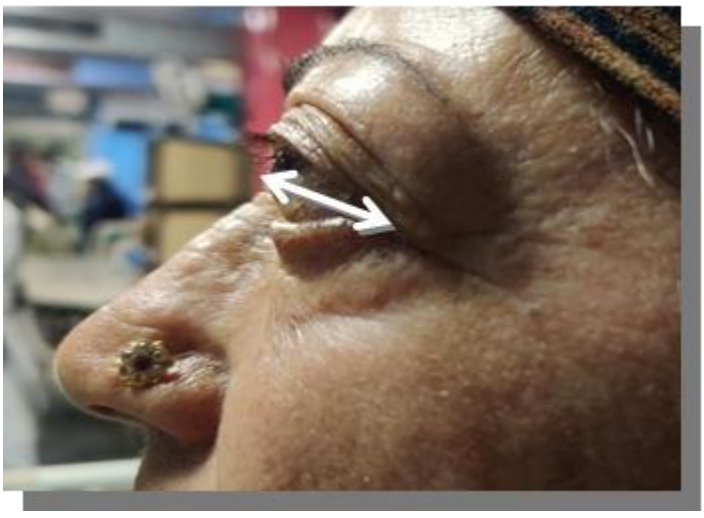


Fig. 3:Lateral view of eye showing proptosis.



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Discussion:

Thyroid ophthalmopathy and acropachy occur in hyperthyroid patients, but most commonly it affects the euthyroid or hypothyroid patients after the treatment of original thyrotoxicosis. The sequence of involvement of extrathyroid manifestations is thyroid dysfunction developing first, followed by ophthalmopathy, then dermopathy and finally, acropachy. [4] The probable etiology is stimulation of autoantibodies to TSH and IGF-1 receptors. The earliest manifestations of ophthalmopathy are usually a sensation of grittiness, eye discomfort, and excess tearing. About one-third of patients have proptosis. Periorbital edema, scleral injection, and chemosis are also frequent. The most serious manifestation is compression of the optic nerve at the apex of the orbit, leading to papilledema; peripheral field defects; and, if left untreated, permanent loss of vision. Thyroid acropachy is so strongly associated with thyroid dermopathy that an alternative cause of clubbing should be sought in a Graves' patient without coincident skin and orbital involvement. [5] Ophthalmopathy, dermopathy, and acropachy have declined in incidence, probably due to better recognition and early treatment of the disease.

Ophthalmopathy requires no active treatment when it is mild or moderate, because there is usually spontaneous improvement. General measures include meticulous control of thyroid hormone levels, cessation of smoking, and an explanation of the natural history of ophthalmopathy.

Although therapy consisting of glucocorticoids, radiotherapy, immunosuppressive drugs, and surgery may be beneficial in the treatment of ophthalmopathy and dermopathy, no effective treatment exists for acropachy. In most cases, acropachy is asymptomatic, but the main clinical manifestations are digital clubbing, skin tightness with or without digital clubbing and usually with small-joint pain (in severe cases), soft tissue edema, and reactional periosteum, and skin alterations in fingers and nails may also be present. Fortunately, as acropachy is an asymptomatic condition, the accuracy lies in identifying the complication as that of the Graves' disease itself, thus not requiring unnecessary search for the cause of clubbing.

Conclusion:

Thyroid ophthalmopathy and acropachy are two of the extrathyroid manifestations of Graves' disease. While the former is common, the latter is a very rare entity. Our patient, as discussed, is having both of these manifestations, that too after many years of giving radioactive iodine. There have been data which show that smoking increases the eye complications of Graves' disease, but no such information has been found in thyroid acropachy. Treatment of both can be seen with corticosteroids, and control of thyroid hormone, but achieving the latter has not been proven beneficialin reverting the changes of both, ophthalmopathy and acropachy.

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