

Thyroid acropachy: Frequently overlooked finding

Sir,

Thyroid acropachy is an uncommon manifestation of autoimmune thyroid disorder, which has been reported recently in the journal of *Indian Journal of Endocrinology and Metabolism*^[1] and in other Indian journals. It usually presents with clubbing and swelling of digits along with periosteal reaction of extremity bones. It is almost associated with ophthalmopathy and thyroid dermopathy. Thyroid acropachy is the least common manifestation of autoimmune thyroid disease. An epidemiological-based study showed that about 4% of patients with ophthalmopathy have dermopathy, and that one of five patients with dermopathy has acropachy. Acropachy is mostly associated with dermopathy and ophthalmopathy, although an isolated case of acropachy without dermopathy has been reported.^[2] It can occur in all form of autoimmune thyroid disorder whether euthyroid, hypothyroid or hyperthyroid patients.^[2] Patients first develop thyroid dysfunction, followed by ophthalmopathy, then dermopathy, and finally, acropachy.^[2]

However, the reports suggest that thyroid acropachy may be more common. The ubiquitous prevalence of clubbing secondary to pulmonary causes may lead primary care physicians to miss the diagnosis of thyroid acropachy in India. This letter highlights some differences between clubbing and periostitis seen in thyroid acropachy and clubbing and pulmonary osteoarthritis seen in lung and other systemic and paraneoplastic conditions.[Table 1] Thyroid acropachy is distinguished by the uniform presence of thyroid dermopathy and ophthalmopathy. Radiological features are also somewhat different; in patients with thyroid acropachy, there is less involvement of the long bones. In pulmonary osteoarthritis, periosteal reaction usually is symmetric; in acropachy, it can be asymmetric. In acropachy, radiographs show a characteristic sub-periosteal spiculated, frothy, or lacy

Table 1: Difference between thyroid acropachy and other disorder associated with clubbing and pulmonary osteoarthritis

	Thyroid acropachy	Other systemic disorders
Associated signs	Ophthalmopathy, and dermopathy	Depends upon system involved
Pain	Rarely	Frequently
Radiological sign	Involvement of long bones rare	Common
Periosteal reaction	Symmetrical	Asymmetrical
	Characteristic subperiosteal spiculated, frothy, or lacy appearance	Laminal periosteal proliferation
Pathogenesis	Tsh receptor antibodies in high titer	absent
Pathology	Autoimmune, trapping of platelets, increase glycosaminoglycan and fibroblast proliferation	Trapping of platelets
Spontaneous remission	Upto 50%	Infrequent
Treatment	No specific treatment	Specific treatment available depends upon pathology

TSH: Thyroid-stimulating hormone

appearance,^[3] quite different from the laminal periosteal proliferation of classic pulmonary osteoarthritis. However, in thyroid acropachy, other mechanisms (such as autoimmune phenomena and increased glycosaminoglycan and fibroblast proliferation similar to changes in thyroid ophthalmopathy and dermopathy) may be at work.^[1,4] It is usually believed that the periosteal reaction in thyroid acropachy, unlike that in pulmonary osteoarthritis does not occur in the long bones of the forearms or the legs. Dermopathy is indicative of a severe autoimmune thyroid disease; acropachy is likely to indicate an even more severe form. In patients with thyroid acropachy, skin biopsy demonstrates typical findings of pretibial myxedema, including fibroblast activation and glycosaminoglycan deposition. Similar findings have been noted in skin overlying periosteal changes of acropachy.^[4]

No specific treatment for acropachy of thyroid disease is available, other than systemic immunosuppressive therapy and local corticosteroid therapy. These treatments usually are directed at associated ophthalmopathy and dermopathy. For persistent pulmonary osteoarthritis, local octreotide

injection and local radiotherapy have been tried. Whether these measures would help the patients with thyroid acropachy are unclear.^[1,5]

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