

Goitre-A Clinical Image

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Goiters are clinically discernible thyroid gland enlargements defined by uncontrollable growth and structural and/or functional alteration of one or more regions inside the normal thyroid tissue. They form an entity known as simple nodular goitre when dysregulation, thyroiditis, autoimmune thyroid disease, and thyroid cancer are absent [1]. This is regularly observed in nations without a public health initiative to prevent iodine deficiency [2]. The case is relevant as it signifies a rare clinical condition which in future causes systemic complications. Furthermore, even when the gland is normal to palpate, up to 50% of the general population has thyroid nodules on sonography [3-5]. This could be one of the reasons for the rising use of diagnostic imaging in the evaluation of such patients, in addition to functional characterisation with blood Thyroid Stimulating Hormone (TSH), at least among thyroidologists [6-9]. It is noticed as a palpable or obvious swelling of the gland near the base of the neck. It could be associated with hypothyroidism, hyperthyroidism, or euthyroidism [10]. The symptoms are linked to adrenergic stimulation. Clinical signs and symptoms frequently involve hypermetabolism (increased metabolism), excessive thyroid hormone, a rise in oxygen consumption, alterations in protein metabolism, immunologic stimulation of widespread goiter, and ocular abnormalities. However, the non-specific nature of these symptoms makes diagnosis challenging.

A 72-year-old male patient came to the out-patient department with the complaints of a diffused swelling over the throat region. The patient noticed the swelling three months back, which was increasing gradually. The swelling was associated with minor pain while speaking and swallowing.

On clinical examination, lymphadenopathy was noticed at cervical lymph nodes of size 4 cm in length and 5 cm in width at front side of neck region. The overlying skin was not movable and was non-tender during palpation. On laboratory examination, only the thyroid profile was done by the patient, which was within normal limits. It was thus diagnosed to be a non-toxic goiter. Since, the swelling was diffused and large, a surgical excision was advised. After the surgical excision of the nodular goiter, the swelling was relieved and patient was free from any symptoms with a significant reduction in the size of the nodule.

These images could be useful for differential diagnosis with anaplastic thyroid carcinoma, carotid artery aneurysm, and subacute thyroiditis [Figure 1,2].

Similar outcomes were seen in later investigations, which demonstrated a goitre size decrease of 40% to 60% within 1-2 years of medication [11-13].

The ¹³¹I technique is easy, affordable, and secure. After a single dosage of ¹³¹I, it is expected that thyroid volume decrease to 40% (total as well as nodule volume) and a cure rate of 75% (normalisation of scintigraphy and serum TSH) will occur [Table/Fig-3] [14-22,23]. Similar findings have been made for toxic solitary thyroid nodules [24,25]. The minor side effects include hypothyroidism, which is unrelated to any kind of dose planning. Patients who additionally have thyroid autoimmune disease or prolonged absorption by extranodular thyroid tissue are more likely to have hypothyroidism [26].

**[Table/Fig-1]:** Goiterous nodule of the neck from front and lateral side.**[Table/Fig-2]:** Post-operative image of Goiterous nodule of the neck from front and lateral side.

Author	N	Age (Years)	Goiter size (mL)	¹³¹ I dose (per gram thyroid) (MBq)	Follow-up (Years)	Evaluation	Size reduction (%)
Hegedu's et al [14]	25	56	73+/-6 SEM	3.7	1	Sonography	41

Verelst et al.[15]	15	67	175+/-13 SEM	2.8-3.7	2.5	Scintigraphy	39
Nygaard et al.[16]	69	57	74 (21-296)	3.7	2	Sonography	55
Huysmans et al.[17]	19	66	269+/-153 SD	3.7	1	MRI	40
Wesche et al.[18]	10	48	88+/-15 SEM	4.4	1	Sonography	48
de Klerk et al.[19]	27	60	194+/-138 SD	1.1-4.8	1	CT	34
Le Moli et al.[20]	50	53	82 (17-325)	4.4	2	Sonography	49
Bonnema et al.[21]	23	67	311+/-133 SD	3.7-5.5	1	MRI	34
Wesche et al.[22]	29	50	56 (17-198)	4.4	2	Sonography	44

[Table/Fig-3]: Studies of 131Iodine therapy in nontoxic multinodular goiter.
MRI: Magnetic resonance imaging; CT: Computed tomography

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