

# Intrathyroid Injection of Steroid in Benign Thyroid Swellings

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## ABSTRACT

**Background:** Thyroid swelling disorders are most common in females, and sometimes are considered as a blemish to their features. The present study was conducted to assess efficacy of intrathyroid injection of steroid in benign thyroid swellings. **Methods:** 48 patients with thyroid swellings of both genders were administered intrathyroid injection of triamcinolone in the concentration of 40mg/ml (kenacort 40 mg). **Results:** Out of 48 patients, males were 18 and females were 30. Type of thyroid swelling was Hashimoto's thyroiditis in 31, colloid goitre in 15 and adenomatous hyperplasia in 2 cases. The difference was significant ( $P < 0.05$ ). Complications such as haematoma formation was seen in 2, anaphylactic reaction in 5 and infection at the injection site in 1 case. The difference was significant ( $P < 0.05$ ). **Conclusion:** Benign thyroid swellings can be managed effectively to reduce its size with minimally invasive technique using intrathyroid injections of triamcinolone.

**Keywords:** Thyroid swellings, Triamcinolone, Hashimoto's thyroiditis.

## INTRODUCTION

Benign thyroid swelling disorders are common conditions, frequently encountered in clinical practice, either during physical examination or incidentally, during various imaging procedures. They are clinically important primarily due to their malignant potential. Thyroid swelling disorders are most common in females, and sometimes are considered as a blemish to their features.<sup>[1]</sup>

Goiter is the most commonly used term related to swelling in front of neck refers to enlargement of thyroid gland. These swellings are mostly nodular or show a smooth enlargement of thyroid gland.<sup>[2]</sup> All swellings move on swallowing unless it is fixed to underlying structures due to malignancy. In some cases, person notices a nodule in his own neck, while in other cases a health care provider will feel a nodule during a routine examination of the neck.<sup>[3]</sup> Thyroid nodules are clinically noted in 4% to 7% of adult population and are incidentally found in 25% of adult population on ultrasound examination.<sup>[4]</sup> In a study of 300 sequential autopsies those were malignant neoplasms in 2.33% but occult carcinoma comprised 1% of the cases. This represents a higher incidence as in this study females comprised one third of total autopsies.

Triamcinolone is a long-acting synthetic steroid that can be given, intralesional and topical. Spain concludes in his study that corticosteroids inhibit the

inflammatory response irrespective of inciting agent, whether it is mechanical, chemical or immunological.<sup>[5]</sup> The present study was conducted to assess efficacy of intrathyroid injection of steroid in benign thyroid swellings.

## MATERIALS AND METHODS

The present study was conducted among 48 patients with thyroid swellings of both genders. The involvement of patients in the study was after obtaining their written consent.

Data pertaining to patients such as name, age, gender etc. was recorded. All the patients were evaluated with history and clinical examination followed by routine blood investigations, Thyroid function tests (T3, T4, and TSH), Fine Needle Aspiration Cytology (FNAC) and Ultrasonography (USG) of the neck. In all patients, intrathyroid injection of triamcinolone in the concentration of 40mg/ml (kenacort 40 mg) was administered. A dose of 20 mg of the steroid was injected once a week for 4 weeks. Regular follow up visits were done at 3<sup>rd</sup> week, 3<sup>rd</sup> month and 6<sup>th</sup> month. Patients were assessed for size of the swelling during each follow up. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

## RESULTS

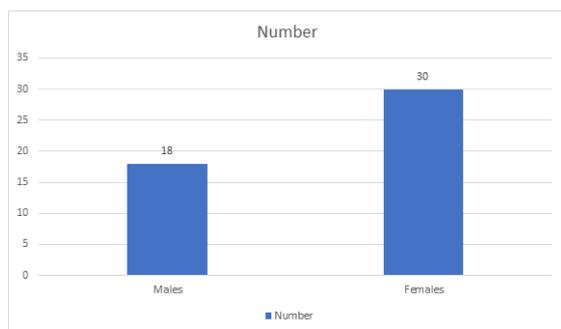
**Table 1: Distribution of patients**

Total- 48		
Gender	Males	Females
Number	18	30

[Table 1] shows that out of 48 patients, males were 18 and females were 30.

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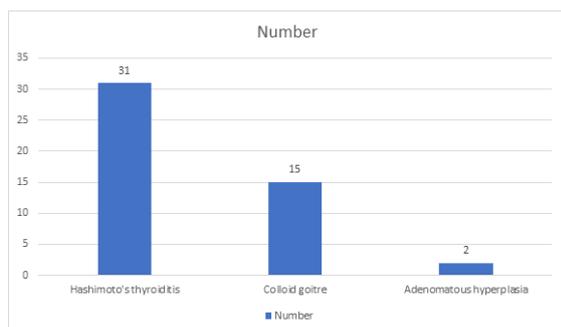


**Figure 1: Distribution of patients**

**Table 2: Type of thyroid swelling**

Type	Number	P value
Hashimoto's thyroiditis	31	0.01
Colloid goitre	15	
Adenomatous hyperplasia	2	

Table II, graph II shows that type of thyroid swelling was Hashimoto's thyroiditis in 31, colloid goitre in 15 and adenomatous hyperplasia in 2 cases. The difference was significant ( $P < 0.05$ ).



**Figure 2: Type of thyroid swelling**

**Table 3: Assessment of complications**

Complications	Number	P value
Haematoma formation	2	0.02
Anaphylactic reaction	5	
Infection at the injection site	1	

[Table 3] shows that complications such as haematoma formation was seen in 2, anaphylactic reaction in 5 and infection at the injection site in 1 case. The difference was significant ( $P < 0.05$ ).

## DISCUSSION

Benign thyroid disease is common with thyroid dysfunction affecting around 2% of women and 0.2% of men in the UK.<sup>[6]</sup> Thyroid nodules are common disorders, frequently discovered in clinical practice, either during physical examination, or incidentally, during various imaging procedures.<sup>[7]</sup> The gender disparity is perhaps explained by the hormonal influences of both oestrogen and progesterone. Thyroid nodules are common, their prevalence being

largely dependent on the identification method.<sup>[8]</sup> The estimated prevalence by palpation alone ranges from 4% to 7%, whereas USG detects nodules in 20% to 76% of the adult population, particularly with the current use of high-resolution USG techniques. The reported frequencies detected by USG correlate with the prevalence reported at surgery and autopsy with ranges between 50% and 65%.<sup>[9]</sup>

Pre-operative diagnosis was obtained by FNAC, ultrasound depending on the nature of thyroid nodules. Among them FNAC was easily available, economical and of high diagnostic value. Thyroidectomy is the most common endocrine surgery done worldwide. Current indications for surgery are compression induced symptoms, malignancy, suspected malignancy, hyperthyroidism and cosmesis.<sup>[10]</sup> Thyroid surgery has been traditionally a general surgical practice, but recently more otolaryngologist are offering thyroid services. Surgery, being the definitive line of treatment for the thyroid swellings, is associated with complications and may affect the quality of life. Equally, they are not happy with a postoperative scar in the neck following a thyroidectomy surgery although modern surgery with its improved technique is in a broad sense, free from ugly scars.<sup>[11]</sup> The present study was conducted to assess efficacy of intrathyroid injection of steroid in benign thyroid swellings.

In present study, out of 48 patients, males were 18 and females were 30. Santosh et al,<sup>[12]</sup> in their study assessed the efficacy of intra thyroid injection of triamcinolone in benign thyroid swelling disorders. A total of 20 patients were selected for this study. All the patients with thyroid swellings, were evaluated with history and clinical examination followed by routine blood investigations, thyroid function tests (T3,T4,TSH), Fine Needle Aspiration Cytology (FNAC) and Ultrasonography (USG) of the neck. The treatment adopted in this study was intrathyroid injection of triamcinolone acetate. In this study there were 20 patients, all were females in the age group of 17- 55 years. Four patients did not come for regular follow up, and hence were excluded. Sixteen patients were followed up regularly. Thirteen (81.25 %) patients showed excellent results with no visible swelling, confirmed sonologically. Two patients (12.5%) showed fair results with residual swellings, and one patient did not show any reduction in size of the swelling.

In present study, type of thyroid swelling was Hashimoto's thyroiditis in 31, colloid goitre in 15 and adenomatous hyperplasia in 2 cases. We found that complications of steroid injections was haematoma formation seen in 2, anaphylactic reaction in 5 and infection at the injection site in 1 case. Sanasam et al,<sup>[13]</sup> in their study intrathyroid injection of triamcinolone acetate, a nonsurgical procedure was tried in 76 cases of thyroid swelling disorders. Randomised cases of thyroid swelling disorders with the size less than 4cm were selected for this

procedure. A course of three to ten sittings of intrathyroid injections was administered in each selected patient. Patients with abnormal thyroid functions were treated to the euthyroid state before the therapy. About 90% had excellent results, 5% fair results and 4% poor results. Intrathyroid injection of triamcinolone acetonide is found to be a satisfactory modality of treatment for thyroid swelling disorders and found to be acceptable to the patients as well. Rajkhowa et al.<sup>[14]</sup> included 107 patients of neck swelling. Patients underwent lobectomy, hemithyroidectomy, near total thyroidectomy, total thyroidectomy and the specimens sent for definitive histopathological diagnosis. Out of 107 cases 63 cases (58.8%) were diagnosed as colloid goiter. Others were multinodular goiter (12.1%), thyroid cyst (10.2%), Follicular adenoma (9.3%), papillary carcinoma (2.8%), undifferentiated carcinoma (0.9%). From above observations it was obvious that among the thyroid swellings 87% cases were benign and 13% cases were malignant. Lobectomies were performed in 4 (3%), Hemithyroidectomies 75 (70%), Near Total thyroidectomies were performed in 22 (20.5%).

## CONCLUSION

Authors found that benign thyroid swellings can be managed effectively to reduce its size with minimally invasive technique using intrathyroid injections of triamcinolone.

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