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## A prospective study on surgical management of thyrotoxicosis

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### Abstract

**Background:** Hyperthyroidism refers to over activity of the thyroid gland leading to high synthesis and excessive production of thyroid hormone the extent and severity of the clinical manifestations of thyrotoxicosis are not strongly correlated with its biochemical severity. Surgery should be proposed as an immediate and completely effective solution for thyrotoxicosis, especially when compared with prolonged medical therapy, because it can provide a demonstrable improvement in the quality of life (QOL) of the patients.

**Methods:** prospective study was done to clarify the surgical indications and the effectiveness of total thyroidectomy in the treatment of thyrotoxicosis and quality of life after surgery.

**Results:** A Totally thirty patients with varied clinical presentations are confirmed to be suffering from the thyrotoxicosis and tests were appropriately evaluated and Thyrotoxicosis controlled and consented patients were operated In this study quality of life is assessed by regular follow up of patient by initial weekly follow up for 1month, there after once in 3 months over a period of 2yrs.

**Conclusion:** Surgery should be proposed as an immediate and completely effective solution for thyrotoxicosis, especially when compared with prolonged medical therapy, because it can provide a demonstrable improvement in the quality of life (QOL) of the patients.

**Keywords:** Hyperthyroidism, prospective, surgical management, QOL

### Introduction

Thyrotoxicosis" refers to a clinical state that results from inappropriately high thyroid hormone action in tissues generally due to inappropriately high tissue thyroid hormone levels. Hyperthyroidism refers to over activity of the thyroid gland leading to high synthesis and excessive production of thyroid hormones [1].

The underlying problem in patients with thyrotoxicosis is acceleration of many physiologic processes, and the clinical manifestations reflect that acceleration. None are specific; it is usually the combination of several that suggests the possibility of the disorder.

The extent and severity of the clinical manifestations of thyrotoxicosis are not strongly correlated with its biochemical severity

### Aims and Objectives

1. To study the Clinical pattern of presentation of patients with thyrotoxicosis.
2. Indication for surgery in thyrotoxicosis patients.
3. To assess the functional results and quality of life following the surgical treatment

### Materials and Methods

This is a prospective study in the surgical department of the Narayana medical college and Hospital, Nellore, Andhra Pradesh from January 2016 to may 2019

Totally THIRTY patients with varied clinical presentations are confirmed to be suffering from the thyrotoxicosis and tests were appropriately evaluated and Thyrotoxicosis controlled and consented patients were operated

All 30 patients were confirmed to be in a condition of hyperthyroidism when the surgical option was proposed, and underwent total thyroidectomy in a state of clinical or biological euthyroidism after medical therapy like antithyroid medications (methimazole) and also received propranolol for control of cardiac associated thyrotoxic symptoms.

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In this study quality of life is assessed by regular follow up of patient by initial weekly follow up for 1month, there after once in 3 months over a period of 2yrs.

#### Inclusion criteria

1. Patients with thyrotoxic features irrespective of primary or secondary thyrotoxicosis who will be clinically and biochemically proved with increased thyroid hormone levels.
2. All patients aged above 16yrs who are diagnosed with Thyrotoxicosis and admitted under general surgery department of Narayana medical college and hospital, will be included

#### Exclusion criteria

1. Patients who are less than 16yrs of age will be excluded from this study.
2. Patients with goiter who are clinically non-toxic will be excluded.
3. Those cases found to be unfit for surgeries due to chronic diseases or not-willing for surgery.

#### Observations and Results

**Table 1:** Age Distribution (N=30)

| Age   | No of Cases | Percentage |
|-------|-------------|------------|
| 16-25 | 3           | 10%        |
| 26-35 | 5           | 16.67%     |
| 36-45 | 7           | 23.33%     |
| 46-55 | 9           | 30%        |
| 56-65 | 5           | 16.67%     |
| >65   | 5           | 3.33%      |

**Table 2:** Sex distribution [N=30]

| Sex     | No of Cases | Percentage |
|---------|-------------|------------|
| Females | 28          | 93.33%     |
| Males   | 2           | 06.67%     |
| Total   | 30          | 100%       |

**Table 3:** Indications for surgery (N=30)

| Indications              | No of cases (N=30) | Percentage |
|--------------------------|--------------------|------------|
| Large goiter             | 8                  | 26.67%     |
| Failure of treatment     | 15                 | 50%        |
| Recurrence after therapy | 2                  | 6.6%       |
| Preference for surgery   | 5                  | 16.67%     |

**Table 4:** Post-operative Complications (N=30)

| S No | Complications   | No of Cases n=30 | Percentage |
|------|-----------------|------------------|------------|
| 1    | Hemorrhage      | 2                | 6.67%      |
| 2    | Hypocalcemia    | 2                | 6.67%      |
| 3    | RLN injury      | 1                | 3.33%      |
| 4    | Wound infection | 1                | 3.33%      |

#### Quality of Life

**Table 5:** ability to attend the work and return of daily activities (N=30)

| POD  | No of Cases | Percentage |
|------|-------------|------------|
| 7th  | 4           | 13.3%      |
| 9th  | 5           | 16.67%     |
| 10th | 9           | 30%        |
| 14th | 12          | 46.6%      |

**Table 6:** Continued medications (N=30)

| Medications | No of Cases Pre-op | No of Cases Post-op |
|-------------|--------------------|---------------------|
| Multiple    | 30                 | 2                   |
| Single      | 0                  | 28                  |

#### Discussion

The aim of this study was to clarify the surgical indications and the effectiveness of total thyroidectomy in the treatment of thyrotoxicosis and quality of life after surgery. From January 2016 to May 2019, 30 patients underwent total thyroidectomy in our department.

In this patients the indications for total thyroidectomy were: 8 large goiters with compressive symptoms, 15 patients with failure or intolerance of previous treatment, 2 recurrent hyperthyroidism after medical treatment; 5 patients with preference for surgery

The mean postoperative hospital stay was 7 days (range: 5-9). Transient hypocalcaemia occurred in 2 patients (6.6%) and transient unilateral recurrent laryngeal nerve injury in another 2 patients (3.3%). None of the patients had permanent hypocalcaemia or permanent recurrent laryngeal nerve injury.

All 30 treated patients relieved their symptoms and became biochemically hypothyroid after the operation. All patients after Total thyroidectomy medication were kept on single medication on thyroxine only except 2 patients additionally were on calcium supplements for hypocalcemia.

Thus after total thyroidectomy results are rapid, reliable resolution of hyperthyroidism and removal of multinodular goitre, requires no re-treatment, removes any coexisting malignancy, and post-surgical hypothyroidism is simple to treat.

Surgical management of hyperthyroidism enables good endocrinological control if surgery is complete. Patients need to be fully informed of all possible postoperative complications that could occur, especially vocal ones. Long-term follow-up is necessary to detect recurrence, which can occur more than 20 years after partial thyroidectomy surgery, here possibility of which is ruled out by total thyroidectomy.

Total thyroidectomy is reserved for patients with severe disease or large goiters in whom recurrences would be highly problematic, but carries an increased risk of hyperparathyroidism and laryngeal nerve damage.

By AM Fam physicians of American family physicians of hyperthyroidism stated that Risk of hypothyroidism (25 percent) or hyperthyroid relapse (8 percent); temporary or permanent hypoparathyroidism or laryngeal paralysis. (Less than 1 percent); higher morbidity and cost than radioactive iodine; requires patient to be euthyroid preoperatively with antithyroid drugs or iodides to avoid thyrotoxic crisis [2].

Ahmed Al-Adhami, *et al.*, Of 71 AF procedures: one developed acute airway obstruction; one permanent RLN palsy; four permanent hypocalcaemia; and none developed recurrent toxicity. There were no deaths within a year of surgery the shift to ablative surgery virtually eliminated the need for lifelong specialist follow-up, albeit with an insignificant rise in permanent hypocalcaemia [3].

Pisanu A *et al.*, surgical indications and the effectiveness of total thyroidectomy in the treatment of toxic multinodular goitre. From January 1998 to May 2004, 70 patients underwent total thyroidectomy in our department because of toxic multinodular goitre.

Transient hypocalcaemia occurred in 6 patients (8.6%) and transient unilateral recurrent laryngeal nerve injury in another 3 patients (4.2%). None of the patients had permanent hypocalcaemia or permanent recurrent laryngeal nerve injury. All 70 treated patients relieved their symptoms and became biochemically hypothyroid after the operation. Total thyroidectomy results in a rapid, reliable resolution of hyperthyroidism and removal of Multinodular goitre, requires no re-treatment, treat [4].

The improvement in QoL in the GD patients was significant after surgical treatment in all Thy PRO domains. In the TNG patients, the improvement was significant in all but one Thy PRO domain, sex life. The QoL of GD patients is worse than those of TNG patients. Surgery may improve QoL in patients with GD and TNG even if they have achieved satisfying thyroid status with medication treatment, preoperatively [5].

### Conclusion

Surgery should be proposed as an immediate and completely effective solution for thyrotoxicosis, especially when compared with prolonged medical therapy, because it can provide a demonstrable improvement in the quality of life (QOL) of the patients

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