

Surgical Management of Thyrotoxicosis and Its Complications

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Abstract:

Background and objectives: Thyrotoxicosis is a common endocrine disorder which may be of primary or secondary thyrotoxicosis type affecting almost all the organ systems of the body. The aim of this study is to study the age, sex distribution, modes of clinical presentation, investigation and management of the disease.

Method: Thirty patients with thyrotoxicosis were studied prospectively from October 2012 to March 2014. Patients were diagnosed by clinical examination and by investigation like thyroid profile (T4, T3, TSH) levels in K.R.Hospital using inclusion and exclusion criteria's. All diagnosed patients were rendered euthyroid with medical line of treatment before subjecting them for surgery.

Results: The patients mean age in this study is 35+- 9.9 years with a range of 16-60 years. It has female predominance (66.6 % 20/30 patients) and diffuse toxic goitre was the most common type of goitre (66.6 % 20/30 patients). Subtotal thyroidectomy was the standard surgical procedure done with minimal morbidity and zero mortality. One patient was treated with medical line of treatment only.

Interpretation and conclusion: Thyrotoxicosis can occur at any age (most common in third and fourth decades of life). It has a female sex predominance. Diffuse toxic goitre is the most common type. With proper preoperative preparation, surgery remains to be the standard method of treatment with minimal morbidity, zero mortality and without recurrence of hyperthyroidism (in our study).

Keywords: Thyrotoxicosis; primary thyrotoxicosis; secondary thyrotoxicosis; thyroid profile; subtotal thyroidectomy.

I. Introduction

The term hyperthyroidism and thyrotoxicosis are used interchangeably. The thyrotoxicosis refers to biochemical and physiological manifestations of excessive quantities of thyroid hormones irrespective of source of hormones. While hyperthyroidism, the term is applied if over production of hormones is by thyroid gland. The manifestations depend on the severity of the disease, age of the patient, presence or absence of extrathyroidal manifestations, and the specific disorder producing the thyrotoxicosis.

Treatment is designed to impose restraint on hormone secretion by chemical agents or by reducing quantity of thyroid tissue. None of them are curative as they do not affect or cure the pathogenesis. There are different modalities of treatment and surgical treatment is being practised most frequently because of its more predictable outcome with zero mortality and minimal morbidity.

II. Methodology

Source of Data

The materials for the present study on "Clinical Study of Thyrotoxicosis" was undertaken at Department of Surgery, MYSORE Medical College, Mysore between October 2012 to March 2014. A total of 30 consecutive patients of thyrotoxicosis admitted at Krishna rajendra general hospital, Mysore of Mysore Medical College and research institute were studied.

Method of Collection of Data

Data in the present study were collected by

- Obtaining detailed history
- Through clinical examination
- Investigations
- Treatment and followup.

Inclusion criteria

All newly diagnosed patients presenting with thyrotoxic features irrespective of primary or secondary thyrotoxicosis, confirmed by serum T₃, T₄ and TSH levels were taken for the study.

Exclusion criteria

The patients with goitre who were clinically and biochemically nontoxic were excluded from the study.

- The patients who were not willing for the available modality of treatment in our institution / hospital were excluded.

III. Results

Complication rate in patients subjected to surgery

Table 1: Post operative complication rate

Sl. No.	Type of complication	Number of cases	Percentage
1	Haematoma	1	3.33
2	Vocal cord paralysis	2	6.66
3	Wound infection	2	6.66
4	Airway problem	-	-
5	Transient hypocalcemia	1	3.33
6.	Hypothyroidism	1	3.33
	Total	7	23.33

IV. Discussion

Wound infection (6.66%) and transient vocal cord palsy (6.66%) were the commonest postoperative complication. Haematoma, transient hypocalcemia and hypothyroidism (3.33% each) were seen in one patient each. So, postoperative morbidity was minimal in the present study.

In the present study mortality was nil and the morbidity was minimal. This was made possible by appropriate control of thyrotoxicosis and pre-operative preparation before taking up for surgery. In a well prepared case after rendering euthyroid there are no greater risks compared to non toxic thyroid surgery.

In the present study the incidence of haematoma was 3.33% (1 case), which was detected within 3 hours after surgery with breathing problem was brought to operation theater, explored under anaesthesia bleeding vessel identified and ligated. The reason for developing haematoma was due to slippage of ligature in the inferior pedicle. Transient unilateral vocal cord palsy was seen in two cases who had impaired vocal cord mobility on extubation. The follow up was done, movements returned to normal subsequently. In the present study wound infection was the one of the commonest postoperative complication. Out of 2 cases 1 was in the postoperative haematoma patient and one in the transient vocal cord palsy patient.

Transient hypocalcemic tetany was seen in one patient after subtotal thyroidectomy which responded to 15ml, 10% In the present study hypothyroidism was seen in one patient after subtotal thyroidectomy responded to eltroxin 0.1mg tablet. None of the patients in our study had recurrent hyperthyroidism.

Treatment

All the patients were treated with Neomercazole tablet in a dose of 30-40 mg per day. Majority of them responded well with returning to euthyroid status within three months period. Some of them who continued to have tachycardia inspite of neomercazole therapy received propranolol tablet (dose : 40 mg three times a day) in addition, to achieved euthyroid state. Total duration of medical treatment in 29 patients subjected for surgery ranged from 1 months to 8 months. This was also because of lack of patients compliance One patient was treated primarily with medical line of treatment only and rendered euthyroid within a span of 4months this patient had Hashimoto's thyrotoxicosis and was treated with propranolol alone.

Follow-up

All patients were followed up in our study. The duration of follow up varied from one month to one year as per the requirement.

V. Conclusion

In the present study most of the cases underwent surgery in the form of subtotal thyroidectomy with zero mortality and minimal morbidity, thus surgical treatment continues to be main modality of treatment with centres lacking radio-isotope facility.

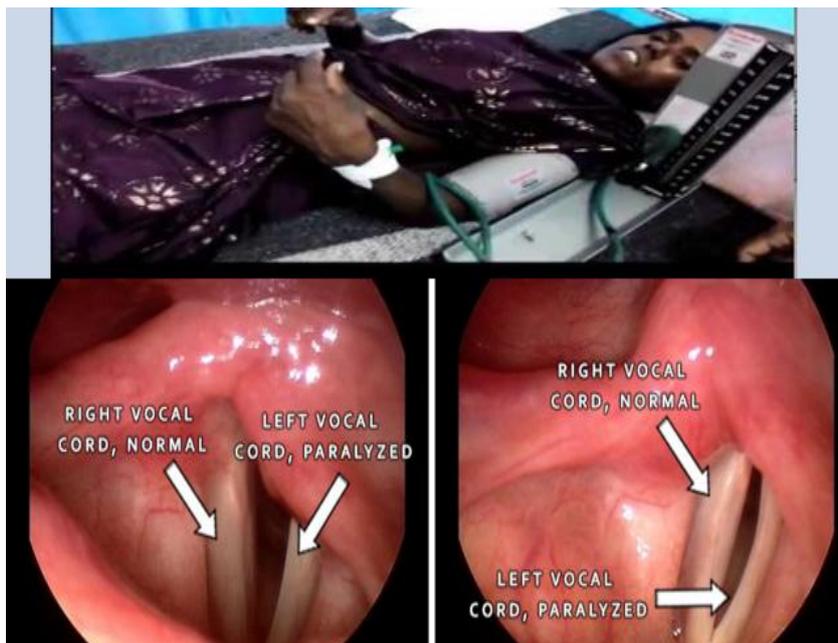


Fig A showing carpopedal spasm in transient hypocalcemic tetany
Fig B showing transient vocal cord palsy in post operative period

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