A prospective study of 100 consecutive cases of thyroid surgery and its complication at Chandka Medical College Hospital Larkana

Muhammad Ayoub Jalbani, Azizullah Jalbani, Atta Hussain Soomro

Abstract:
Objectives: To evaluate various complication of thyroidectomy and how to minimize the possible complications.
Design: A prospective descriptive study.
Setting: Surgical Unit-I, Chandka Medical College Teaching Hospital Larkana.
Place and Duration: This study was carried out on 100 patients of thyroid goitre treated at Department of Surgery Chandka Medical College Teaching Hospital during three years period from June 2007 to June 2010.
Methodology: All cases of thyroid goitre admitted from June 2007 to June 2010 are included in this study. The details were added on a proforma.
Results: 100 patients were operated during the above period. 90 of them were female and 10 were male; so a female to male ratio of 9:1 was observed in this study. 60 of these patients had non-toxic multinodular goitre; 22 had simple diffuse goitre; 10 had diffuse toxic goitre; 3 patients had toxic multinodular goitre and 1 had toxic adenoma.
Conclusion: Thyroid goitre is a common surgical condition. We concluded that all patients should be thoroughly examined and carefully investigated. Thyroid surgery should be performed by an experienced surgeon to avoid complications.

Keywords: Multinodular goitre, toxic nodule, thyroidectomy

Introduction:
The goiter is an enlarged thyroid gland. It is a global health problem. It is also a major problem in Pakistan, specially in the Northern Mountainous areas, where it is endemic. Simple goiter may attain a large size without giving any symptom. In the endemic areas, it is usually considered to be a normal feature and patients do not present to the doctors unless they have some complications like respiratory obstruction, stridor, toxicity or malignancy. Anatomic location of the thyroid gland, with its relationship to the multiple vital structures like trachea, parathyroid glands and recurrent laryngeal nerves, increase the risk complications in its surgery. Therefore, the possibility of complications after standard thyroidectomy is very high, but recurrences is very low, in this area of modern surgery.1 Prospective complications are related to the wound, haemorrhage, damage to the recurrent laryngeal nerve or the external branch of the superior laryngeal nerve, injury to the blood supply, or removal of the parathyroids. Recurrent hyperthyroidism or myxedema may result from inadequate or overaggressive surgical therapy.

Today, death from thyroid surgery is very rare, prior to 1850, approximately 100 thyroidectomies were performed with reported mortality rate of 41% but severe haemorrhage was the major factor in the mortality rate.2 In the late 1800s, three important events changed the course of thyroid surgery:
1. Lister’s discovery of antiseptics.
2. The use of haemostatic clamps (1870), and
3. The technical advances of Theodor Kocher (1878), the acclaimed “Father of Thyroid Surgery.”3

Chandka Medical College, Larkana
MA Jalbani
A Jalbani
AH Soomro

Correspondence:
Dr. Muhammad Ayoub Jalbani
Assistant Professor,
Surgical Unit-I
Chandka Medical College
Larkana
Tel: 074-4042745
Cell: 0333-7528537
Through these advances, the mortality rate after thyroid surgery came down from over 50% to 0.2%. Successful surgical management of thyroid disease is based on a sound knowledge of normal and pathologic anatomy and an unhurried, gentle operative technique. With proper preoperative evaluation, well planned surgery, meticulous dissection, and vigilant attention to postoperative details, the complication rate can be minimized.1 Thyroidectomy is one of the common major surgical procedures done in most of the teaching hospitals of Pakistan. Although surgeons are familiar with most of the complications of thyroidectomy and rate of complications vary among surgeons. Each thyroid surgeon, therefore, must establish an individual complication rate.

**Patients and methods:**
This study was conducted at surgical unit-I Chandka Medical College Teaching Hospital Larkana for period of three years from June 2007 to June 2010. The clinical assessment plus portable findings as well as post operative complications were recorded in proforma, specially designed for this purpose. A thorough preoperative assessment was done in all cases. A detailed history and comprehensive physical examination was performed in every case. Thyroid was systemically palpated to determine its size, contour, consistency, nodularity, fixity, tracheal displacement and the presence of cervical lymph nodes. In addition to routine examination every patient was subjected to I-131 uptake, I-131 or TC-99 thyroid scanning, total serum T3, T4 and TSH levels, serum calcium estimation, ECG and cardiac function assessment. X-ray of cervical spines and thoracic inlet was done in patients with large goiters to see tracheal displacement. Indirect laryngoscopy was done preoperatively in all patients and postoperatively where ever indicated. FNAC was done in almost all cases of solitary nodules. According to clinical examination, hormonal assay, and thyroid scanning 8 patients were toxic 8%, 4 patients were hypothyroid 4% and 88 patients were euthyroid 88%. All the thyrotoxic patients were initially treated with antithyroid drugs.

**Results:**
A total of 100 patients of different varieties of goiter were operated at surgical unit-I Chandka Medical College Teaching Hospital Larkana. Non-toxic multinodular goiter was commonest swelling in 60 patients (60%) followed by solitary nodule in 22 patients (22%), simple diffuse goiter 10 patients (10%), diffuse toxic goiter 3 patients (3%), toxic multinodular goiter in 4 (4%) and toxic adenoma in 1 (1%).

Out of 100 patients included in this study, 90 were women (90%) and 10 were man (10%). Female to male ratio was 9:1. The ages of the patients were ranging from 16 years to 55 years. The mean age was 36.4 years. The maximum number of patients belonged to age group 21-30 years (37%) followed by 27 patients belonged to age group 31-40 years (27%). The commonest surgical procedure done was subtotal thyroidectomy in 72 patients (72%) followed by lobectomy plus isthmusectomy in 22 patients (22%), near total thyroidectomy in 5 patients (5%) and total thyroidectomy with modified radical neck dissection in one patient (1%). The commonest histopathological lesions reported were nodular goiter (65%), followed by colloid goiter (12%). Among 5 patients of thyrotoxicosis, 2 were found as toxic multinodular goiter (2.22%), 2 patients had Grave’s disease (2.22%) and one patient as toxic adenoma (1.11%). Two patients were found to have Hashimoto’s thyroiditis (2.22%) and 3 patients were of malignant goiter (3.33%).

Patients were admitted one day before surgery and were discharged 3 to 4 days after operation. The average hospital stay of uncomplicated cases was 6.5 days. Only patients at high risk requiring preoperative treatment had a longer hospital stay. Patients to be operated on had to be euthyroid the day of operation.

**Discussion:**
Although surgery is an accepted modality of treatment in many diseases of the thyroid gland. Yet, post operative complications, such as, recurrent laryngeal nerve damage, hypoparathyroidism, hypothyroidism and recurrent thyrotoxicosis make the patient reluctant for surgery. Most of the current reviews suggest that thy-
roidectomy can be done with little morbidity and mortality. It is 0% in majority of the current series. When these reviews were compared to our study, the morbidity was quite low and mortality was still 0%. This was due to proper preoperative evaluation, well planned preoperative preparation for thyrotoxicosis and meticulous dissection during surgical procedures. Comparing total versus subtotal thyroidectomy Friedman M and Pacella BL Jr (1990)\(^4\) remark that during surgery, if there is any suggestion that the laryngeal nerves or parathyroid glands would be at increased risk if a total resection were performed, if may be necessary to revert to a subtotal procedure. Herranz Gj et al (1991)\(^5\) in their retrospective study of 335 thyroidectomies remark that major complications could be blamed on technical pitfalls, even in the hands of experienced surgeons. Sharma AK and Mishra SK (1993)\(^6\) in their study reported that short stay thyroidectomy was feasible in a developing country. According to them out of 162 patients, 156 were discharged within 48 hours after surgery. In our study, the average hospital stay of patients was 3-4 days. We used subcuticular non absorbable prolene suture and usually preferred to remove after 3rd post operative day. Sharma AK and Mishra SK (1993).\(^6\) According to them out of 162 patients 156 were discharged within 48 hours after surgery. Vickers P et al (1990).\(^7\) In their study of 130 thyroidectomies performed for hyperthyroidism report that 16 patients developed hyperthyroid manifestations in the immediate postoperative period. According to Rao et al (1990)\(^8\) reported incidence of postoperative hypoparathyroidism varies from 3% to 32%. Khalid et al 1994\(^9\) in their study of 126 patients treated at Shaikh Zayed Hospital, Lahore reported postoperative complications after thyroidectomy as haematoma (2.38%), transient hypocalcaemia (2.38%), wound infection (1.58%) and RLNP (1.58%)

### Conclusion:
Diseases of the thyroid gland are common in our country. Meticulous clinical examination, use of modern investigation and above all a high index of suspicion are mandatory tools for early diagnosis and hence proper treatment of thyroid
A prospective study of 100 consecutive cases of thyroid surgery and its complication at Chandka Medical College Hospital Larkana

Table 6: Postoperative Complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>No. of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhage and haematoma formation</td>
<td>---</td>
<td>0.00</td>
</tr>
<tr>
<td>Hoarseness of voice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transient RLNP</td>
<td>01</td>
<td>1.11</td>
</tr>
<tr>
<td>Permanent RLNP</td>
<td>---</td>
<td>0.00</td>
</tr>
<tr>
<td>Larygeal Oedema</td>
<td>03</td>
<td>3.33</td>
</tr>
<tr>
<td>Wound Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wound infection</td>
<td>01</td>
<td>1.11</td>
</tr>
<tr>
<td>Oedema of skin flaps</td>
<td>02</td>
<td>2.22</td>
</tr>
<tr>
<td>Adherent skin with underlying structures</td>
<td>01</td>
<td>1.11</td>
</tr>
<tr>
<td>Transient Hypoparathyroidism</td>
<td>02</td>
<td>2.22</td>
</tr>
<tr>
<td>(Hypocalcaemia)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyrotoxic crisis</td>
<td>---</td>
<td>0.00</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>01</td>
<td>1.11</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>12.21%</td>
</tr>
</tbody>
</table>

A comprehensive anatomical and technical knowledge and experience are essential ingredients needed to perform careful thyroid surgery.

The favourable surgical results with low complication rates possibly reflect the patient population as much as technical skill of the surgeon. It is concluded that in this study wound problems as well as general complications after thyroid surgery were low as compared to the current literature.

Acknowledgment:
I am thankful to Mr. Iftikhar Ahmed and Mr. Mukhtiar Ali Abbasi; without their support it would not have been possible for me to publish this article.

References: