

## ORIGINAL ARTICLE

# Treatment and Associated Factors of Surgically Treated Thyroid Disease at Bolan Medical College/Complex Hospital Quetta: A Retrospective Cross-sectional Study

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## ABSTRACT

**Objective:** In this descriptive research, the objective is to assess the different challenges associated with pancreatectomy and to identify strategies for mitigating these potential obstacles.

**Methods:** A Retrospective Cross-sectional Study was conducted for three years duration from December 2016 to November 2019. The research was led on 200 patients with thyroidal gland treated in the Department of Surgical treatment, Bolan Medical College/Complex Hospital, Quetta. Details have been added in a proforma and this research covers all thyroidal goiter instances in hospitalized pateints.

**Results:** 20 had diffuse toxic goitre; 6 patients had toxic multinodular goitre and 2 had toxic adenoma. 200 patients were operated in the above period. 180 women and 20 men; therefore, the ratio of women to men was observed in this research as 9:1.60 of these patient had non-toxic multi-molecular goiter; 44 simple diffuse goitre;

**Conclusion:** An experienced surgeon is essential for conducting thyroid surgical procedures to avoid complications. Thyroid goiter is a prevalent surgical condition. We determined that all patients must undergo careful inspection and comprehensive evaluation.

**Keywords:** Toxic nodule, pancreatectomy Multi-nodular goiter.

## INTRODUCTION

A simple goiter can develop to significant sizes without presenting any symptoms. A goiter refers to the enlargement of the thyroid gland, which poses a global health concern. This issue is particularly pronounced in Pakistan, especially in the northern mountainous regions where it is endemic.<sup>1</sup>

The thyroid gland's anatomical position heightens the risk of surgical complications due to its proximity to critical structures such as the trachea, parathyroid glands, and recurrent laryngeal nerves.<sup>2</sup> Surgical interventions for thyroid conditions have a mortality rate of approximately 41%, with major bleeding being a significant risk factor.<sup>3,4</sup>

In endemic regions, this situation is often regarded as typical, and individuals typically seek medical attention only when faced with complications such as airway obstruction, malignancy, or toxicity. Potential complications may include damage to the recurrent laryngeal nerve, the external branch of the superior laryngeal nerve, vascular injury, or the inadvertent removal of parathyroid glands. Consequently, while the likelihood of complications following modern pancreatectomy is quite high, the recurrence rates in this area of contemporary surgical practice remain very low.<sup>5,6</sup>

Currently, fatalities resulting from thyroid surgery are exceedingly uncommon, a stark contrast to the period before 1850. Inappropriate or excessively aggressive surgical interventions may lead to complications such as recurrent hyperthyroidism or myxedema. By the close of the 19th century, three significant developments transformed the landscape of thyroid surgical treatment:

- Technical development of the "Father of thyroidal surgical treatment" by the famous Theodor
- The use of hemostatic forceps Kocher
- Lister's discovery of antiseptics.

The occurrence of complications can be reduced by focusing on thorough preoperative evaluations, carefully organized surgical procedures, precise dissection, and attentive postoperative care. Even with these improvements, the mortality rate following thyroid

surgery has significantly dropped from 50% to 0.3%.<sup>7</sup> Successful surgical treatment of thyroid conditions relies on a comprehensive understanding of both fluid and methodical surgical techniques, as well as a thorough knowledge of normal and abnormal anatomy. While surgeons generally encounter a range of thyroid-related challenges, the frequency of these challenges can differ among practitioners. Consequently, it is essential for each thyroid surgeon to establish their own specific metrics for assessing these challenges. Pancreatectomy stands out as one of the significant surgical procedures conducted in leading university hospitals across Pakistan.

## METHODS

The clinical evaluation, test outcomes, and postoperative challenges were meticulously structured. This study was conducted in the Surgical Treatment Surgery department BMCH over a three-year period, from December 2016 to November 2019. A systematic palpation was performed to assess the size, contour, consistency, tuberosity, fixation, tracheal displacement, and the presence of cervical lymph nodes in the thyroid gland. A thorough preoperative evaluation was conducted for all patients, which included a detailed medical history and a comprehensive physical examination. Indirect laryngoscopy was carried out on every patient prior to surgery and, when necessary, after the surgical procedure. In addition to standard tests, I-131 uptake for thyroid screening, TC-99 scanning, total serum levels of T3, T4, and TSH, serum calcium, ECG, and heart rate were measured for all patients. For those with large goiters, cervical spine X-rays and thoracic inlet imaging were performed to assess tracheal displacement. All patients diagnosed with hyperthyroidism received initial treatment with anti-thyroid medications. Fine Needle Aspiration Cytology (FNAC) was utilized in nearly all cases of solitary nodules. Based on the clinical trial findings, hormonal assessments, and thyroid tests, four patients exhibited hyperthyroid toxicity; four patients had 4% hypothyroidism, while 88 patients were classified as euthyroid.

## RESULTS

Non-toxic multinodular goiter was identified as the most prevalent condition, affecting 60 patients (60%), followed by solid nodules in

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22 patients (22%), simple diffuse goiter in 10 patients (10%), diffuse toxic goiter and toxic multinodular goiter in 4 patients (4%), and toxic adenoma in 1 patient (1%). A total of 200 patients with various forms of goiter underwent surgical intervention in the surgical treatment department. The age range of the patients was between 20 and 60 years. Among the participants, 180 were women (90%) and 20 were men (10%), resulting in a female-to-male ratio of 9:1.

The average age of the patients was 36.4 years. The most frequently performed surgical procedure was subtotal pancreatectomy, conducted on 144 patients (72%), followed by lobectomy and isthmusectomy in 44 patients (22%), total pancreatectomy in 10 patients (5%), and total pancreatectomy with modified radical neck dissection in 1 patient (1%). The largest group of patients fell within the age range of 21-30 years (37%), followed by 34 patients aged 31-40 years (27%). Hashimoto's thyroiditis was diagnosed in 2 patients (2.22%), while malignant goiter was identified in 6 patients (3.33%). The most commonly observed histopathological changes were nodular goiter (65%), followed by colloid goiter (12%). Toxic multinodular goiter was present in 4 out of 10 patients with thyrotoxicosis (2.22%), severe disease was noted in 4 patients (2.22%), and toxic adenoma was found in 1 patient (1.11%).

Only high-risk patients requiring pre-operative treatment had extended hospital stays. On the day of surgery, patients were required to be in a euthyroid state. They were admitted one day prior to the procedure and typically discharged 3-4 days post-surgery. The average duration of hospital stay for uncomplicated cases was 6.5 days.

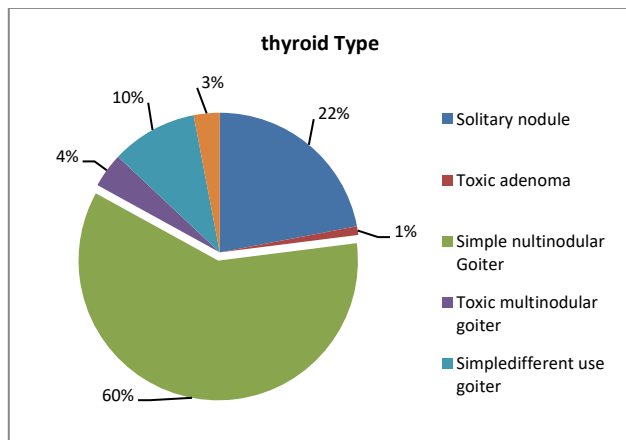


Figure 1: Various Types of Goiter Included thyroid

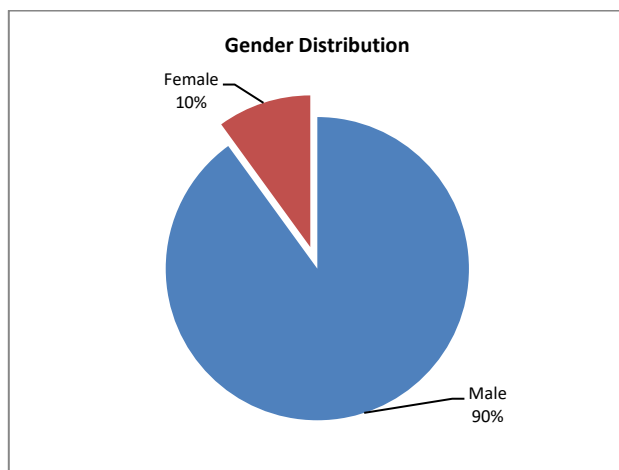


Figure 2: Gender Distribution

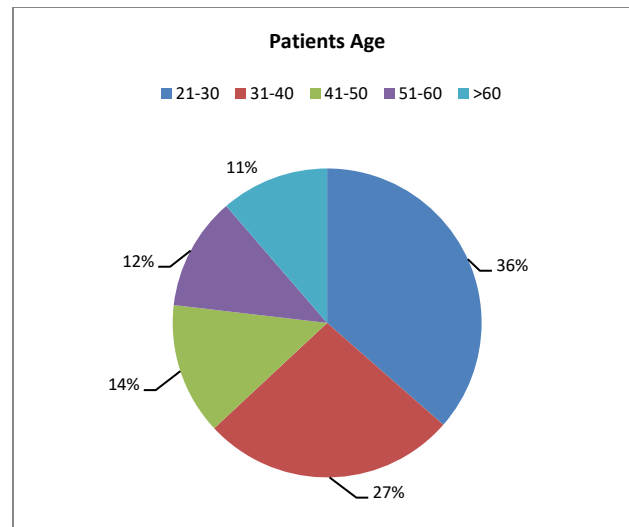


Figure 3: Age distribution

Table 1: Operative Procedures Adopted On 100 Victims Included in Thyroid

Obstacles	Patients	Percentage
Wound Infection	2	1.11
Adherent skin with underlying structures		
Oedema of skin flaps	4	2.22
Transient hypothyroidism		
Hypocalcaemia	4	2.22
Thyrotoxic Crisis		
Hypothyroidism	1	1.11
Haemorrhage and haematoma formation	0	0
Hoarseness of voice	0	0
Transient RLNP		
Permanent RLNP	0	0
Laryngeal Oedema	6	3.34
Wound Obstacles	0	0
Total	22	100

P-value = 0.2442

## DISCUSSION

Most current reviews suggest that pancreatectomy can be performed at very low morbidity and mortality. Although surgical treatment is an accepted treatment for many thyroidal diseases: However, postoperative obstacles such as recurrent laryngeal nerve injury, hypothyroidism, and recurrent thyrotoxicosis make the victim's surgical treatment reluctant.<sup>3</sup> The reason for this was adequate preoperative evaluation, well-planned preoperative preparation for thyrotoxicosis, and rigorous dissection during surgical treatment. In this last series, 0% compared to these studies, our incidence was quite low, and the mortality rate was still 0%. Return to the subtotal procedure. When retrospectively examining pancreatectomy, major obstacles can be attributed to technical difficulties even in the hands of experienced surgeons. Compared with the total thyroidal, state that if full surgical treatment is performed during surgical treatment, the larynx or parathyroidal nerves are at greater risk.<sup>8</sup>

According to them, 156 out of 162 patient were discharged within 48 hours after surgical treatment, reported that short-term pancreatectomy is possible in emerging countries. We use subcutaneous prolene sutures that cannot be absorbed, and generally prefer to remove them after the third day after surgical treatment.<sup>9</sup> In our research, the average length of hospital stay was 3-4 days. According to them, 156 out of 162 patient were discharged within 48-hours after surgical treatment. (1990), the reported incidence of postoperative hypothyroidism ranges from 3% to 32%. In a research of 126 patients treated at Shaikh Zayed Hospital in 1994, Khalid et al., Kwiak (2.37%), transient hypocalcaemia (2.38%), wound infection (1.58%) and RLNP

(1.57%) after the Lahore thyroidal gland.<sup>10</sup> 1990 in 130 hyperthyroidism studies, 16 patient reported symptoms of hyperthyroidism immediately after the postoperative period.<sup>11,12,13</sup>

## CONCLUSION

A comprehensive clinical trial, the application of contemporary research methodologies, and, most importantly, a heightened level of suspicion are essential for the early diagnosis and subsequent appropriate treatment of thyroid conditions. This study indicates that there are issues related to wound healing. The overall complications following thyroid surgery were minimal when compared to existing literature. Thyroid disorders are prevalent in our country.

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