



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF  
**PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3764616>Available online at: <http://www.iajps.com>

Research Article

**POST-OPERATIVE COMPLICATIONS AFTER  
THYROIDECTOMY FOR DIFFERENTIATED THYROID  
CARCINOMA**<sup>1</sup>Dr Muhammad Umar Arif, <sup>2</sup>Dr Unzurna Gull Khan, <sup>3</sup>Dr Amna Manzoor<sup>1</sup>Islam Medical and Dental College Sialkot<sup>2</sup>DHQ Hospital Vehari, Graduation from LCMD Karachi<sup>3</sup>University College of Medicine and Dentistry Lahore**Article Received:** February 2020**Accepted:** March 2020**Published:** April 2020**Abstract:**

**Introduction:** The purpose of this study is to assess the percentage and risk factors for thyroid cancer complications in thyroid patients.

**Study design:** case series.

**Place and duration:** In the Surgical Unit II and ENT department of Services Hospital Lahore for one year duration from February 2019 to February 2020.

**Method:** Retrospective review of complications of 50 consecutive thyroid patients due to differentiated thyroid cancer was done in this study. Retrospective evaluation of postoperative complications was performed in fifty patients (various surgical procedures) who underwent thyroid due to differentiated thyroid cancer.

**Result:** Hypocalcaemia in 16 patients (32%) and transient vocal cord paralysis in one patient (2%) were serious postoperative complications in fifty patients. Along with the total thyroid, excision of the tracheal lymph nodes was significantly associated with temporary and permanent hypocalcaemia.

**Conclusion:** Thyroid surgery can be performed safely with acceptable morbidity. Hypocalcaemia is the most important complication. The dissection of the tracheal lymph nodes was the most important predictor of hypocalcaemia in patients who received complete thyroid.

**KEYWORDS:** Diversified thyroid cancer, postoperative complications.

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Please cite this article in press Muhammad Umar Arif et al, *Post-Operative Complications After Thyroidectomy For Differentiated Thyroid Carcinoma.*, Indo Am. J. P. Sci, 2020; 07(04).

**INTRODUCTION:**

According to the American Cancer Society, the number of different cases of thyroid cancer has increased in recent years. The incidence rate increased from 6.3% in 1983. To 20.4% in 1998.

Thyroidectomy is the main form of thyroid cancer first treatment<sup>1-2</sup>. However, the degree of resection in the treatment of differentiated thyroid cancer is controversial, since the appearance of postoperative complications is directly related to the type of thyroidectomy (almost complete or complete lobectomy)<sup>3</sup>.

At the beginning of the last century, the main complications of the thyroid gland were hematomas and postoperative infections, and most of these major authors reported postoperative mortality<sup>4-5</sup>. Currently, the main postoperative complications are recurrent laryngeal nerve disorders and vocal cord paralysis due to hypocalcaemia. Post-operative death is now rare or has not been registered<sup>6</sup>.

The emergence of such complications is associated with some aspects of the surgical technique, scope of surgery, re-surgery, neck dissection and the experience of the surgical team<sup>7</sup>. The main purpose of this study is to assess the percentage of complications and risk factors in patients entering the thyroid gland due to various thyroid cancers, and to suggest preventive measures that may lead to better functional results.

**METHOD:**

The study was conducted at the Surgical Unit II and ENT department of Services Hospital Lahore for one-year duration from February 2019 to February 2020. Thyroidectomy was performed in 50 patients due to various thyroid cancers. 45 (90%) patients were 45 and 05 were male (10%) and the average age was 42 (88 out of 88). The preoperative evaluation included anamnesis and physical examination, thyroid function tests, thyroid ultrasound, thin needle aspiration biopsy and chest radiography. Preoperative sound card mobility was assessed in all patients by indirect laryngoscopy or fibro-laryngoscopy.

Surgical procedures included complete thyroidectomy in 28 patients (56%), partial thyroidectomy in 08 patients (16%), and lobectomy with resection and resection in 14 patients (28%).

Endotracheal lymph node resection was performed in 20 patients (13 ipsilateral and 7 bilateral). Pathological examination revealed 44 papillary cancers (88%) and 6 follicular cancers (12%). Before making lower thyroid glands, we routinely identify parathyroid glands and recurrent laryngeal nerves. Penrose drainage in 10 patients, hematoma drainage in 37 patients and drainage in 3 selected patients were used to facilitate postoperative care and discharge from the hospital. All patients were evaluated for at least 30 days for postoperative complications.

Postoperative paralysis or paresis of the vocal cords was questioned as immobilization of the vocal cords or the presence of reduced movements. Six months later, the vocal cord disorder was considered permanent. Hypocalcaemia was considered when exogenous calcium replacement was necessary to maintain normal serum levels (8-10.4 mg / dl) or to eliminate clinical signs of hypocalcaemia. When calcium had to be exchanged for over six months, hypocalcaemia was considered to be persistent.

**RESULTS:**

Postoperative complications were more common in 23 patients (46%) with hypocalcaemia. Other less common complications were vocal cord paralysis, hematoma, serous infection and wounds (Table I). The average length of hospital stay was two days (from 01-18 days).

The overall frequency of paralysis of the vocal cords was 2% (Table I); it was a transient paralysis that showed full recovery after 6 months. There were no patients with permanent vocal cord paralysis or bilateral paralysis and no tracheostomy was required. Thyroidectomy type,

The patient's gender, tumor diameter, surgeon's experience, and whether this was related to neck dissection did not show a significant relationship with the percentage of vocal cord paralysis. Postoperative hypocalcaemia was observed in 16 patients (32%) (Table I). Temporary hypocalcaemia was detected in 13 patients (26%) and all showed full recovery after 6 months. Three patients (6%) had persistent hypocalcaemia (Table I).

Complications of postoperative hypocalcaemia did not show a significant correlation with patient's gender, nodule diameter and surgeon's experience.

Complications	No.	%
Transitory Hypocalcemia	13	26
Permanent Hypocalcemia	3	6
Transitory Vocal Cord Palsy	1	2
Hematoma	2	4
Seroma	3	6
Surgical Site Infection	1	2
Total	23	46

However, the size of the thyroid gland and its association with endotracheal lymph node resection were significantly associated with the risk of transient and persistent hypocalcaemia. In the group of patients who underwent only thyroidectomy, the percentage of hypocalcaemia was significantly lower (4/25%) compared to cases in which lymph node dissection affected 12 patients, 75% (75%). Fig. 1).

Seroma was a postoperative complication in 03 patients (6%) (Table I). Seroma developed in one patient with penile drainage and in 02 patients with vascular drainage. None of the patients without drainage had such complications. One patient (2%) developed an infection after surgery. Two patients (4%) were re-operated on one patient without drainage due to one who had hematoma drainage and hematoma drainage (Table I).

### DISCUSSION:

Thyroidectomy is a very common surgical procedure around the world and is performed by surgeons with varying degrees of education and experience, such as general surgery, chest surgery, endocrine surgery, otolaryngology and head and neck surgery, and oncological surgery<sup>8</sup>.

Since the beginning of the 20th century, the incidence of complications and mortality has dropped significantly during thyroid surgery, making it a surgical procedure with an acceptable morbidity and mortality rate<sup>9</sup>. Mortality after thyroid surgery has become a very rare complication in various literature reports<sup>10</sup>. No postoperative death was observed in this series.

The rates of postoperative complications reported in the literature are variable (7.4% to 53%). Postoperative complications were observed in 23 patients (46%) in this series. The most common and disturbing complications in thyroid surgery are vocal cord paralysis and hypocalcaemia, and their appearance is associated with various factors<sup>11</sup>. The incidence of recurrent laryngeal nerve damage in literature ranges from 0% to 4.8% and is higher

in extensive resections and reoperative series. In this series, no patient (0%) had permanent vocal paralysis<sup>12</sup>. In our group, excision and identification of recurrent laryngeal nerve is routinely performed before ligation of the lower cervical vessels and reduces the risk of nerve damage<sup>13</sup>.

Several authors suggest this early diagnosis of recurrent laryngeal nerve. Cernea reported the importance of the external branch of the upper larynx nerve and the speed of nerve damage during thyroidectomy. The identification and protection of this branch is also extremely important<sup>14</sup>.

Hypocalcaemia was an important complication in this series (26% transient and 6% persistent). After reviewing the latest literature on thyroidectomy, we found the incidence of symptomatic postoperative hypocalcemia between 04% and 42%<sup>15</sup>. Persistent hypocalcaemia is less common (from 0% to 8%). Tracheal dissection (ipsilateral or bilateral) was the most important risk factor for hypocalcemia in this series, but age was not significantly associated with postoperative hypocalcaemia. Although hypocalcaemia was more common in one study, it affected patients under 18 years of age.

### CONCLUSION:

Endotracheal lymph node resection was the most important determinant of hypocalcaemia in patients with full thyroid cancer. Contraindications to planned intratracheal dissection may reduce the incidence of serious postoperative complications in selected low-risk patients, but this lymph node chain should be carefully examined during surgery.

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