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Original Research Article

Outcomes and Complications of Thyroid Surgeries: An Eight Year Experience

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Abstract:

Background: Understanding the difficulties and outcomes of thyroidectomies in rural settings is critical for improving patient care, addressing any inequities, and identifying opportunities for improvement.

Method: The investigation was conducted as a retrospective observational study at tertiary care teaching hospital. The data of patients receiving thyroidectomy surgery at the institution during the previous eight years has been evaluated and presented. The research comprised a total of 100 cases.

Results: Right hemi thyroidectomy was performed in 57 instances, left hemi thyroidectomy was performed in 26, complete thyroidectomy was performed in 5, total thyroidectomy with neck dissection was performed in 9, and isthmectomy was performed in three cases. A total of 38 cases of colloid goitre, 35 cases of nodular goitre, 4 cases of multi nodular goitre, 9 cases of follicular neoplasm, 9 cases of papillary thyroid carcinoma, 3 cases of isthmus solitary nodule, 1 case of lymphocytic thyroiditis, and 1 case of Hurthle cell tumor were found in the diagnostic profile. Six individuals had temporary recurring nerve palsy, and two experienced transitory hypocalcaemia.

Conclusion: The study's results indicate the necessity for resource allocation, healthcare planning, and quality improvement measures in this sector. More research with a bigger sample size is needed to address the study's shortcomings and broaden our knowledge of thyroid surgery techniques in rural locations.

Introduction

Thyroidectomy is a surgical treatment that includes removing a portion or the whole thyroid gland. Billroth and Kocher pioneered the standard thyroidectomy in the 1870s, with an 8% mortality rate at the time. [1, 2] Continuously improved procedures, additional diagnostic modalities, and technological innovation have resulted in a considerable decrease in the mortality rate linked with this operation.

Thyroid surgery is necessary for a variety of reasons, including benign and malignant disorders such as thyroid nodules, obstructive goitre, carcinomas, lymphomas, and metastasis from extra thyroidal primary cancers that are not treatable medically or due to local compressive symptoms. [3,4]

Depending on the endemicity of certain thyroid disorders, different kinds of indications exist in different parts of the globe.[5] Thyroid swellings are frequent, with roughly 4% of the population aged 30 to 60 years affected. The majority of thyroid swellings are benign, with just 10% to 20% of them becoming cancerous [6].

The histological categorization of thyroid lesions, which encompasses both non-neoplastic and neoplastic diseases, is critical for future care and prognosis [7]. The goal of our study is to share our 8-year experience with thyroidectomies performed at our tertiary care hospital in a rural area of Haryana, as well as to document various indications and trends of the types of thyroidectomy operations performed in our institute, as well as to obtain a demographic profile of patients undergoing thyroidectomies at our institute representing a rural area that is in fact the most aspiring district in the country.

Analyzing the difficulties and results of thyroidectomies in a rural context is critical for improving patient care, addressing any inequities, and identifying opportunities for improvement.

Method and Material

It is retrospective observational research conducted in a rural teaching hospital. From January 2015 to November 2021, data on thyroidectomy surgeries from the ENT and Surgery operation theatre and the hospital's medical records department were collected and analyzed for the demographic profile of the patients as well as the trend of indications and complications related to thyroid surgeries at our institute. Patients who had prior head and neck procedures that involved thyroidectomy as part of the treatment were not eligible for the research. RESULTS The research covered a total of 100 patients. There were 97 females and just three men. The average age of the presenters was roughly 34 years old. The total number of reported cases per year in 2014 was four, twelve in 2015, three in 2016, seventeen in 2017, fifteen in 2018, twenty-eight in 2019, nine in 2020, and twelve in 2021. In terms of surgery, right hemi thyroidectomy was performed in 57 instances, left hemi thyroidectomy was performed in 26 cases, complete thyroidectomy was performed in 5 cases, total thyroidectomy with neck dissection was performed in 9 cases, and isthmectomy was performed in 3 cases.

A total of 38 cases of colloid goitre, 35 cases of nodular goitre, 4 cases of multi nodular goitre, 9 cases of follicular neoplasm, 9 cases of papillary thyroid carcinoma, 3 cases of isthmus solitary nodule, 1 case of lymphocytic thyroiditis, and 1 case of Hurthle cell tumor were found in the diagnostic profile.

Six individuals out of a total of 100 had temporary recurring nerve palsy that resolved after 6 months, while two patients showed severe transitory hypocalcaemia that recovered after 3 to 4 months in both cases.

Discussion

The thyroid gland is unlike any other endocrine gland. It is the body's biggest endocrine gland. By the 17th century, anatomic descriptions of the gland were accessible, but the function of the gland remained unknown. Pathological growth of the thyroid gland, or goiter, was first documented in the nineteenth century [8]. Thyroid swellings are relatively superficial and immediately apparent, with a large spectrum of lesions that vary biologically [9].

The research spans an impressive eight years, allowing for a thorough examination of changes in thyroid illnesses needing surgery. The total number of thyroidectomies done throughout the study period was examined. The authors provide data on the prevalence of thyroid illnesses among the rural residents treated by the tertiary care teaching hospital. Understanding the surgery volume helps in analyzing the demand for thyroid surgical services and emphasizes the necessity for proper resources and skill to satisfy the population's healthcare demands. In our investigation, we discovered a total of 100 thyroidectomy procedures conducted during an 8-year period.

Furthermore, the research looked at the demographics of thyroidectomy patients. This research gave insight into the characteristics of the population seeking thyroid surgery by assessing patient age and gender distribution. Understanding the patient population's demographics is critical for customizing preoperative examinations, improving surgical procedures, and arranging postoperative care. There were 97 females and just three guys in our research. The greater frequency of thyroid diseases in women is consistent with the larger number of cases among females. This is consistent with a research with a larger sample size, such as Bures et al, who found 76% female patients, with 5203 females out of a total of 6778 patients. [10]

The average age in our research was determined to be about 34 years. The annual average age fluctuated little, from 32.41 years in 2015 to 35.91 years in 2020.This is consistent with the findings of Pradeep et al, who found that in the similar environment of a poor nation, the average age group was 39 years. [11]

The research also looks at the spread of thyroid illnesses that need surgery. This research analyzes useful information on the range of illnesses found in the rural population by examining the frequency of various thyroid pathologies such as goiter, nodules, and thyroid cancers. This data may help healthcare practitioners allocate resources, such as specialized surgical procedures, diagnostic equipment, and interdisciplinary partnerships. The most prevalent thyroid disorders identified in a study of the prevalence of several thyroid conditions throughout the years were Colloid Goiter, Nodular Goiter, and Follicular Neoplasm. Colloid Goiter remained constantly prevalent throughout the years, with 6 cases recorded in 2015 and 8 cases reported in 2021. Nodular Goiter displayed a cyclical pattern, with 1 case in 2014, 3 cases in 2015, 2 cases in 2016, 7 cases in 2017, 4 cases in 2018, and a considerable rise to 15 cases in 2019, followed by a reduction in the previous two years. Follicular Neoplasm was continuously recorded, with two cases reported in 2015 and three cases reported in 2019. The prevalence of various histological kinds is comparable to previous studies in the nation, such as Jagadale K et al, who found 72% of non-neoplastic thyroid illnesses such as colloid and multinodular goiters and 28% of neoplastic thyroid lesions such as follicular adenoma and papillary thyroid cancer.[12]

The discovered patterns in this data will provide physicians and researchers with useful insights. For example, the increasing incidence of nodular goiter in 2019 followed by a modest reduction in the following years shows a transitory spike in the disease's occurrence, necessitating additional inquiry into its underlying reasons. Similarly, the occurrence of Follicular Neoplasm instances in recent years may indicate higher awareness and enhanced screening and detection methodologies. The surgical methods used in this rural tertiary care facility are also examined in this research. Although all of the patients in our analysis were traditional open thyroidectomy, this information may be valuable for surgeons and healthcare professionals in evaluating the usage of alternative procedures and highlighting significant areas for improvement.[13] In terms of surgical techniques, right hemi thyroidectomy was the most often done surgery, with 57 recorded instances ranging from 2 cases in 2014 and 8 cases in 2015 to 16 cases in 2019 and then dropping to 7 cases in 2021. Left hemi thyroidectomy followed a similar trend, with one case in 2014, three instances in 2015, six cases in 2018, and four cases in 2021. In all, 26 instances of left hemi thyroidectomy were documented. Total thyroidectomy was performed in ten instances, and total thyroidectomy with neck dissection was performed in nine cases, all of which had papillary thyroid cancer. Isthmectomy was to be done in three patients with a single isthmus nodule. The pattern of higher right lobe involvement found in our institution is virtually same to that exhibited in other institutes as reported by Sengupta et al, where 43.3% of patients had right thyroid swelling and 19% had left thyroid edema. [14]

Out of 100 patients, 6 had temporary recurrent nerve palsy that resolved after 6 months of speech therapy, whereas 2 had complete thyroidectomy and had severe transitory hypocalcaemia that improved after 3 to 4 months of medical care. Similar to Hayward et al's review paper, which observed transitory palsies in 5-8% of individuals [15]. However, a study by Bourrel et al found 8 out of 95 patients to have significant postoperative transitory hypocalcaemia [16].

The research gave useful insights on the surgical landscape and patient characteristics linked to thyroidectomies in a rural setting, which may be inferred. The authors recognize certain limitations, such as the retrospective design and the absence of long-term patient follow-up. The study's results indicate the need for resource allocation, healthcare planning, and quality improvement measures in this sector. More research with a bigger sample size is needed to address the study's shortcomings and broaden our knowledge of thyroid surgery techniques in rural locations.

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