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PROFILE OF STRUMA PATIENTS WHO RECEIVED SURGICAL TREATMENT AT DR. SOETOMO GENERAL HOSPITAL FROM 2016 TO 2020

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Abstract*:* Goiter is an enlargement of the thyroid gland. The etiology of goiter varies by country. The purpose of the study is to examine the medical records of all patients with goiter who had surgery at Dr. Soetomo Hospital Surabaya Indonesia from January 2016 to December 2020. 78% of the 274 cases were female. The illness was more prevalent in the >40 age group than the other two, at 68%. Non-toxic multinodular goiter (47%) was the most common, followed by non-toxic unimodular goiter (31%) and toxic multinodular goiter (5%). Retrosternal goiter was 1%, toxic uninodular goiter was 1%, non-toxic diffuse goiter was 6%, and intrathoracic goiter was 3%. Almost half of the study's participants had a total thyroidectomy. This trial's outcome and issues were both good, with minor difficulties.

Keywords: Indonesia, goiter, retrospective, struma, thyroidectomy

INTRODUCTION

A Goiter or struma is a medical term that refers to an overgrowth of the thyroid gland. It is believed that goiter is the most common reason for thyroid gland enlargement in developing nations. Nevertheless, the etiology of goiter differs between developing and developed countries [1]. It is mostly caused by iodine shortages in developing countries, but it is often caused by an autoimmune process in developed countries such as the United States, including the United Kingdom. It is mostly caused by iodine shortages in developing countries, but it is often caused by an autoimmune process in developed countries such as the United States, including the United Kingdom [2]. Globally, iodine deficiency as a result of a low-iodine daily diet is the most common cause of goiter [3].

However, depending on the clinical symptoms that occur, goiter is only categorized into two categories: toxic goiter and non-toxic goiter. Hypothyroidism, euthyroidism, and hyperthyroidism are all classifications of goiter based on its physiological condition. There are three types of struma that may be recognized by their clinical anatomical characteristics: single nodular goiter, multinodular goiter, or multiple nodular goiter, and diffuse goiter, or general enlargement of the goiter [4]. Patients with goiter often present with symptoms in the form of an enlargement in the front of the neck that slowly continues to develop without any additional problems if the patient is not exposed to hazardous substances. The condition known as toxic goiter is marked by the expansion of the thyroid gland, which is followed by clinical indications of hyperthyroidism such as sweating, diarrhea, elevated heart rate, tremors while walking, difficulties sleeping, and rapid weight loss [3].

The authors believe that it is vital to conduct a study on the profiles and features of patients with goiter who have had surgery at Dr. Soetomo Hospital Surabaya in light of the above information. It is the authors' intention that this research will be able to map and offer descriptive data in the form of goiter type, the findings of anatomic pathology of the goiter, the surgical approach employed, and any post-operative problems that may emerge as a consequence of the surgery. The findings of this study are designed to serve as a reference point or as a starting point for additional analytical investigation.

METHODS

The focus of this descriptive research, which employs a retrospective technique to gather information, is an examination of the medical record data of all patients with goiter who had surgery at the head and neck surgery division of Dr. Soetomo Hospital Surabaya from January 2016 to December 2020. Patient age, gender, diagnosis, surgery, and anatomical pathology findings were all examined as factors in this study. The information gathered was structured and presented in a descriptive manner, using tables and narratives to convey the information. Patients who provided insufficient information were excluded from the trial.

RESULTS AND DISCUSSION

We collected the data for five years, from 2016 until 2020. In this study, a total of 352 research individuals were included in the sample. Table 1-5 shows the results of the research. The study participants were divided into seven patient characteristic profiles, which included gender, age, diagnosis, anatomical pathology findings, kind of surgery, outcome, and complications, according to the authors' classification.

According to the data collected by the author on the sex variable (Table 1), a total of 274 patients, or 78% of all research participants, were female. According to the author's data on the gender variable, the male gender represented 78 patients, or 22% of all research subjects. In this research, the ratio of comparison between women and men was 3.5 to 1. Theoretically, the findings of this investigation were consistent with the notion that women are more likely than males to suffer from goiter [5]. According to the findings of Townsend's research published in 2017, the male to female ratio of goiter that may be palpated by physical examination is one to five [6]. According to current research, it is unclear what it is that causes goiter patients to be identified more often in women than in males.

Based on epidemiological statistics, it is predicted that the prevalence of goiter will grow with age. As a result of the research, we have divided the population into three age groups (Table 1): those under 20 years, those between 21 and 40 years, and those over 40 years old. The authors discovered that, of the three age groups studied, the data group older than 40 years had a greater incidence of the disease than the other two groups, with a percentage of 68%. The lowest percentage is found in the age group under 20 years, at 7%. This may be altered by a variety of variables, including mineral iodine deficiency, chronic stimulation of TSH, hereditary factors, dietary goitrogens, and mutational abnormalities in the gene encoding the TSH receptor [5, 7].

Table 1. Sex and age of patients at RSUD Dr Soetomo from 2016 to 2020

Characteristic	Year					Total
	2016	2017	2018	2019	2020	
Sex						
Male	23	14	20	17	4	78 (22%)
Female	69	70	54	58	23	274 (78%)
Age						
< 20	6	8	5	3	2	24 (7%)
21 – 40	26	25	11	22	3	87 (25%)
> 40	60	51	58	50	22	241 (68%)

In this research, there are eight different types of diagnostic grouping (Table 2). Patients with non-toxic multinodular goiter comprised 47% of the study population, followed by non-toxic unimodular goiter (31%), toxic multinodular goiter (5%) and toxic diffuse goiter (5%). Retrosternal goiter 1.4%, toxic uninodular goiter 1.1%, non-toxic diffuse goiter 0.6%, and intrathoracic goiter comprised 0.3% of the study population. The results of the data collected by the researchers at Dr. Soetomo Hospital Surabaya were consistent with the findings of the study done by Qureshi and colleagues in 2015 [8]. When the researchers conducted this study, they used a similar methodology to that of the author, examining clinical diagnoses and comparing them with anatomical pathological diagnosis. Similar findings were achieved in clinical diagnosis, specifically non-toxic multinodular goiter and non-toxic uninodular goiter are the most frequent kind of non-neoplastic goiter.

Table 2. Diagnosis of patients at RSUD Dr Soetomo from 2016 to 2020

Diagnosis	Year					Total
	2016	2017	2018	2019	2020	
Non-toxic unimodular goiter	33	12	26	32	7	110 (31%)
Non-toxic multinodular	44	31	36	37	17	165 (47%)
Toxic multinodular goiter	4	4	5	4	2	19 (5.4%)
Intrathoracic goiter	1	0	0	0	0	1 (0.3%)
Toxic diffuse goiter	5	6	5	0	1	17 (4.8%)
Retrosternal goiter	3	1	1	0	0	5 (1.4%)
Toxic uninodular goiter	2	0	1	1	0	4 (1.1%)
Non-toxic diffuse goiter	0	1	0	1	0	2 (0.6%)

Most occurrences of goiter are caused by benign tumor lesions (Table 3), although whereas benign tumor lesions account for more than 90% of all cases, malignant tumor lesions account for around 5-10% of all cases of goiter. According to the findings of this investigation, the authors get a greater percentage than the theoretically predicted percentage, which is only between 5 and 10% [9]. Following the publication of this research, the authors discovered that 15.5% of the study individuals were clinically diagnosed with goiter but were ultimately diagnosed with thyroid cancer after receiving anatomical pathology data from the study. Among thyroid carcinomas diagnosed on the basis of anatomical pathology, 10% are papillary thyroid carcinoma, 4% are follicular thyroid carcinoma, 0.3% are Hurthle cell carcinoma, 0.3% are thyroid insular carcinoma, and 0.3% are spindle cell tumor. Squamous cell carcinoma accounts for 0.6% of all thyroid cancers. According to epidemiological data, the most common thyroid carcinoma found in cases of goiter is follicular thyroid carcinoma, which ranks first, and the second most common thyroid carcinoma found in cases of goiter is papillary thyroid carcinoma, which is more aggressive, despite the fact that the cases are less common epidemiologically. The mechanism behind this alteration is multifaceted, and it is the result of the combination of different risk factors for carcinoma and thyroid cancer [10].

Table 3. Anatomical pathology of patients at RSUD Dr Soetomo from 2016 to 2020

Anatomical Pathology Results	**Year**					**Total**
	2016	**2017**	**2018**	**2019**	**2020**	
Adenoma Goiter	71	68	54	54	23	270 (77%)
Nodular Coloid Goiter	3	2	0	1	0	6 (1.7%)
Amyloid Goiter	0	0	0	1	0	1 (0.3%)
Papillary Thyroid Carcinoma	8	7	7	11	3	36 (10%)
Follicular Thyroid Carcinoma	4	2	4	4	1	15 (4%)
Non-Hodgkin Lymphoma	1	0	0	2	0	3 (0.85%)
Spindle Mesenchymal Tumor	0	0	0	1	0	1 (0.3%)
Squamous Cell Carcinoma	1	0	0	1	0	2 (0.6%)
Follicular Adenoma	0	2	1	0	0	3 (0.85%)
Grave's disease	1	0	1	0	0	2 (0.6%)
Thymus Carcinoma	0	0	1	0	0	1 (0.3%)
Pleomorphic Adenoma	0	0	1	0	0	1 (0.3%)
Grave Disease	0	1	1	0	0	2 (0.6%)
Hurthle Cell Carcinoma	0	0	1	0	0	1 (0.3%)
Hodgkin Lymphoma	0	0	1	0	0	1 (0.3%)
Hashimoto Thyroiditis	1	2	2	0	0	5 (1.4%)
Insular Thyroid Carcinoma	1	0	0	0	0	1 (0.3%)
Lymphangioma	1	0	0	0	0	1 (0.3%)

Based on the type of surgery, there were seven types of surgery in this study with the most types of surgery being total thyroidectomy and ishtmulobectomy, respectively (143 procedures or 41% and 112 procedures or 32%, respectively). Then the other five procedures were near total thyroidectomy (16 procedures; 4.5%), subtotal hemithyroidectomy (57 procedures; 16%, hemithyroidectomy), hemithyroidectomy (7 procedures; 2%), total lobectomy (2 patients; 0.5%), and subtotal lobectomy (14 procedures; 4%). For the outcome variable, 320 patients were recovered (91%) and the remaining 32 patients had not recovered (9%). The last variable was complications, as many as 351 patients (99.7%) had no complications and 1 patient (0.3%) had complications.

Table 4. Type of surgery of patients at RSUD Dr Soetomo from 2016 to 2020

Type of Surgery	Year					Total
	2016	2017	2018	2019	2020	
Total Thyroidectomy	38	35	33	26	11	143 (41%)
Near Total Thyroidectomy	4	3	4	2	3	16 (4.5%)
Subtotal Thyroidectomy	14	19	14	7	3	57 (16%)
Hemithyroidectomy	2	1	1	3	0	7 (2%)
Isthmulobectomy	25	21	20	37	9	112 (32%)
Total Lobectomy	0	0	1	0	1	2 (0.5%)
Subtotal Lobectomy	9	5	0	0	0	14 (4%)

Table 5. Outcome and complication of patients at RSUD Dr Soetomo from 2016 to 2020

Outcome	Year					Total
	2016	2017	2018	2019	2020	
Recover	72	78	70	73	27	320 (91%)
Not yet recover	20	6	4	2	0	32 (9%)
Complication						
Any	0	0	0	1	0	1 (0.3%)
No complication	92	84	74	74	27	351 (99.7%)

CONCLUSION

Thyroid goiter is more frequent in females and in people over the age of 40. Patients who have been diagnosed with thyroid goiter still have a chance of developing a cancer in the future. A complete thyroidectomy was performed on almost half of the participants in the research. The result and problems of this trial were both fairly favorable, with the complications being limited in nature. It is hoped that this study will serve as a basis or data base for future analytic research on goiter patients at Dr Soetomo Hospital Surabaya in the years 2016 to 2020. Similar descriptive studies on other sorts of abnormalities in other disciplines of surgery may be carried out in the future.

Conflicts of interest

No competing interests declared.

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