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The Effect of Thyroidectomy on the Quality of Life in Health Aspect of Nontoxic Multinodular Goiter Before Surgery and After Surgery

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Abstract

Multinodular goiter is an enlargement of the thyroid gland with multiple nodules histologically in which the thyroid gland follicles undergo morphological and functional changes, these changes will affect the patient's life, including the physical changes, mental, functional, and social. Operation is one of the choices of goiter management. After the therapy is done, the attention will change to how is the quality of life of the patients after therapy. The purpose of this study to determine the effect of thyroidectomy surgery on the quality of life of the health aspects of nontoxic multinodular goiter patients aged 21 - 45 years before and after surgery. This study used primary data and secondary data from medical records of an outpatient clinic in post-operative patients. The study design was a prospective cohort method. The sample used was patients who have been diagnosed with non-toxic multinodular goiter who agreed to perform thyroidectomy surgery that met the study inclusion and exclusion criteria. This study showed that the quality of life in patients before surgery of 19 people (63%) had a poor quality of life (questionnaire value 0-60) and 11 people (37%) had a good quality of life (questionnaire value > 60). Then after surgery, the patient was assessed for quality of life, and the data obtained was 7 people (23.3%) had a poor quality of life and 23 people (76.3%) had a good quality of life. Then a statistical test was performed and it was found that there was a statistically significant difference between the quality of life of nontoxic multimode goiter patients before and after thyroidectomy surgery with a value ($p = 0.021$). There was a statistically significant difference between the quality of life of nontoxic multimode goiter patients before and after thyroidectomy with a value (95% CI; $p = 0.021$).

Keywords: Multinodular goiter, Thyroidectomy, quality of life.

1.0 BACKGROUND

Goiter can be classified as toxic or non-toxic, diffuse or nodular, single or multiple. Multinodular goiter is an enlargement of the thyroid gland with multiple nodules histologically in which the thyroid gland follicle undergoes morphological and functional changes (Katawkar et al., 2015). With the morphological and functional changes of the thyroid gland, they will certainly influence the lives of patients, including the effects on the physical, mental, functional, and social state. This is what determines the quality of life of patients with goiter before treatment is taken (Katawkar et al., 2015).

There are various types of therapy such as surgery, radioiodine, ultrasound-guided interventional ablation, and levothyroxine. Surgery is one of the management of goiter management. There are various types of surgical removal of goiter including subtotal lobectomy, isthmolobectomy, subtotal thyroidectomy, near-total thyroidectomy, and total thyroidectomy. Complications arising from surgery such as cosmetic problems like hypertrophic scars (42.3%), bleeding (1%), airway obstruction (2%), weak and hoarse sound (6.9%), and thyroid hormone disorders that leads to fatigue (3.7%) can affect overall quality of life of patients so that the goal of goiter management is the quality of life of the patients. (Jesper et al., 2017, Yuri et al, 2014, Dogan et al 2017).

The quality of life in patients with multinodular non-toxic goiter can be assessed using a questionnaire. One of the questionnaires developed in Indonesia to assess the quality of life in patients with multinodular goiter is the thyroid dysfunction questionnaire (TDQ) which assesses the quality of life in health from a biopsychosocial aspect. At the end of the surgery, it showed a significant increase in the quality of life compared to the preoperative period. Patients who underwent thyroidectomy, have a lower pre-operative quality of life, and later improve after surgery (Dogan et al., 2017).

Based on the explanation above, there are still few studies that discuss the effect of thyroidectomy on the quality of life of non-toxic multinodular goiter patients, therefore this study will discuss the effect of thyroidectomy on the quality of life of non-toxic multinodular goiter patients before surgery and after surgery.

2.0 RESEARCH METHODOLOGY

The study design was a prospective cohort method. The study was conducted at the Surgery Department of the Faculty of Medicine, Universitas Airlangga, Dr. Soetomo General Hospital of Surabaya. The study subjects were all patients diagnosed with non-toxic multinodular goiter who were willing to undergo thyroidectomy at Dr. Soetomo General Hospital of Surabaya since 2018 - 2019 that meets the inclusion and exclusion criteria of the study. Inclusion criteria included non-toxic multinodular goiter patients, willing to undergo thyroidectomy surgery, who routinely check themselves for follow-up for at least 3 months, did not experience neuromuscular disorders such as sensory and motor gangs in the facial muscles, aged 21-45 years. Exclusion criteria included patients who would undergo thyroidectomy/reoperation completion surgery, disagree to participate in the study, and those who were diagnosed with thyroid cancer.

3.0 RESULT

Table 1. Distribution of Age and Sex Patient with Non-Toxic Multinodular Goiter

	Frequency	Percentage
Age	<20 years old	6 20.0%
	20 - 40 years	11 36.7%
	41 - 60 years old	11 36.7%
	> 60 years old	2 6.7%
sex	Male	14 46.7%
	Female	16 53.3%

In this study, a total of 30 research subjects were obtained. The age of research subjects was patient aged < 20 years old were 6 patients (20%), aged 20 - 40 years were 11 patients (36.7%), aged 41 - 60 years were 11 patients (36.7%), and aged >60 years were 2 patients (6.7%) with an average age of 39.53 ± 16.9 years. The study subjects consisted of 16 females (53.3 %) and 14 males (46.7 %).

Table 2. Quality of Life of Patients with Non-Toxic Multinodular Goiter Before Thyroidectomy

Quality of life	Frequency	Percentage
The quality of life worse	19	63.3 %
Quality of life is good	11	36.7 %
Total	30	100 %

Results of the assessment of the quality of life in patients with goiter multinodular nontoxic before performed surgery thyroidectomy obtained results of 19 people (63%) have a poor quality of life (score questionnaire 0- 60) and 11 (37%) have a good quality of life (value questionnaire > 60).

Table 3. Quality of Life Patients with Non-Toxic Multinodular Goiter After Thyroidectomy

Quality of life	Frequency	Percentage
The quality of life worse	7	23.3 %
Quality of life is good	23	76.7 %
Total	30	100 %

At the study's patient's assessment of the quality of life after surgery obtained the results of 7 (23.3%) have a poor quality of life and 23 (76.3%) have a good quality of life.

Table 4. Test Statistics Quality of Life Patient with Non-Toxic Multinodular Goiter Before and After Surgery Thyroidectomy

Paired T-Test	<i>P-value</i>
Quality of Life Pre and Post Thyroidectomy	0 .021

Then the data is processed with SPSS and was tested for normality and homogeneity. Obtained data results in normal and homogeneous distribution. Then the data is processed with the T-test paired and found that there is a significant difference between the quality of life of patients' goiter multinodular nontoxic before and after surgery thyroidectomy by value (CI 95%; $p=0.021$).

4.0 DISCUSSION

Thyroid disease is rather common and is a significant number of general surgical operations. The quality of life of patients is important given that more than 90% can expect to survive more than 20 years even after suffering from thyroid disease. Improving the quality of life in patients with multinodular goiter is a major goal of operative action. From this study it can be seen an improvement in the quality of life of patients after surgery. From the results obtained, there was a significant difference between before and after surgery, where initially there were 19 patients with poor quality of life to 7 patients with poor quality of life after surgery (95% CI; $p=0.021$). These results are seen from the assessment of the questionnaire where the suppression effect caused by goiter disappears after surgery and increases the patient's score so that the quality of life improves.

The limitations of this study including various problems that affect the quality of life of the patients, difficulties in monitoring patients and lack of long-term monitoring results. However, at the same time, this study has the power of being a prospective cohort study, evaluating patients and comparing their conditions in two different periods, evaluating patients before surgery to see whether they are affected by external factors other than surgery. This study examines patients' quality of life in terms of general, physical health, and evaluates how their quality of life is affected and for what reasons. The results showed that the quality of life of patients was lower in the pre-operative period compared to the initial and postoperative period in terms of general and physical health. These two domains were found to show a significant increase at the end of the post-operative period, compared to the initial post-operative and pre-operative period.

Several other studies have also evaluated the quality of life after thyroid surgery in various forms. For example, Tagay et al. (2006) conducted a study with 136 patients in 2005 using the questionnaire The Medical Outcome Study Short Form-36 (SF36). This study found an association between patient age and depression level and their physical health score, as well as parameters their psychological and mental health scores. On the other hand, there was a study conducted in a Southeast Asian population where they detected that the SF-36 score showed a significant reduction after thyroid surgery and this is badly affected the social functioning of patients. When the demographic data of the patients in their study were examined, it was seen that physical function was badly affected in patients over 50 years of age. Mental health scores were found to be higher in patients who received more than 12 years of education. They also found that physical and emotional aspects were positively influenced by working patients, a finding that corroborates our results. They suggest that returning to work early improves the quality of life of patients. These results indicate that working patients have a faster adaptation to social life after surgery. This study evaluates factors that affect the quality of life of patients about socio-demographic features and found no relationship

between quality of life and age, sex, education and marital status. Correspondingly, good economic conditions are one of the most important factors that improve the quality of life pre-surgery and post-surgery. In one study, it was found that the most important factors influencing the postoperative quality of life among benign thyroid patients were young age, women, and the presence or absence of pre-operative goiter symptoms. In another study, Rubic et al. concluded that the most important factors affecting the quality of life were female sex, low education level, and disruption of thyroid hormone. (Dogan et al., 2017).

Another factor contributing to the patient's perception in assessing the quality of life is psychological factors. In the questionnaire conducted in this study did not evaluate the psychological side of the patient. Thyroid surgery reduces anxiety to a level below that seen in the control group, which may be caused by relief experienced by the patient, to be convinced of the benign nature of the goiter. The fact that patients have less anxiety than the control group at follow-up might be due to "shifting responses," which reflects that patients have adjusted their anxiety perception to include fear of malignancy before surgery. This might also be true for the observation that patients, who were previously treated with radioiodine, experience more depression and emotional vulnerability after thyroid surgery.

Fear of malignancy can change the perception of pressure symptoms, making comparisons with non-malignant disorders very difficult. Furthermore, patients with hyperthyroid disease are known to have more psychiatric disorders, including anxiety and depression, than patients with nodular goiter. This might affect the overall perception of goiter symptoms. (Sorensen et al., 2017).

5.0 CONCLUSION

Significant differences were found in the quality of life in the health aspects of non-toxic multinodular patients before and after thyroidectomy.

References

- Bahn, R. S. and Castro, M. R. (2011). *Approach To The Patient With Nontoxic Multinodular Goiter*. Journal of Clinical Endocrinology and Metabolism, 96(5), pp. 1202–1212. doi: 10.1210/jc.2010-2583.
- Bekkering, G. E. et al. (2019). *Thyroid Hormones Treatment For Subclinical Hypothyroidism: A Clinical Practice Guideline*. BMJ (Online), 365, pp. 1–9. doi: 10.1136/bmj.l2006.
- Burch, H. B. et al. (2016). *American Thyroid Association Guidelines for Diagnosis and Management of Hyperthyroidism and Other Causes of Thyrotoxicosis*. 26(10). doi: 10.1089/thy.2016.0229.
- Chen, A. Y. et al. (2014). *American Thyroid Association Statement on Optimal Surgical Management Of Goiter*. Thyroid, 24(2), pp. 181–189. doi: 10.1089/thy.2013.0291.
- Djokomoeljanto, R. *The Effect of Severe Iodine Deficiency: A study on Population in Central Java*, Indonesia. 1974. Semarang : Thesis Universitas Diponegoro.
- Dogan et al. (2017). *Quality of Life After Thyroidectomy*. Italian society endocrinology 2017.
- Hicks, C. W. et al. (2014). *Clinicopathologic Presentation And Natural History Of Anorectal Melanoma: A Case Series Of 18 Patients.*, JAMA Surgery, 149(6), pp. 608–611. doi: 10.1001/jamasurg.2013.4643.
- Jesper Roed Sorensen, MD et all. (2017). *Quality of Life After Thyroidectomy In Patients With Nontoxic Nodular Goiter: A Prospective Cohort Study*. Wiley Original Article, 2017.
- Katawkar, et.al. (2015). *A Review of the Pathogenesis and Management of Multinodular Goiter*. Thyroid Disord - Focus Hyperthyroidism. 2014;
- Noehren, A. H. (1947). *The Technique Of Thyroidectomy*. Surgery, gynecology & obstetrics, 84(2), pp. 239–244. doi: 10.1177/014107689809133s04.
- Sephton, B. M. (2019). *Extracervical Approaches to Thyroid Surgery: Evolution and Review, Minimally Invasive Surgery*. Hindawi, 2019, pp. 1–14. doi: 10.1155/2019/5961690. Technical Difficulties, Complications and Management. Review. 2011; 2: 278-284.
- Sorensen, J. R. et al. (2017). *Quality of Life After Thyroidectomy In Patients With Nontoxic Nodular Goiter: A Prospective Cohort Study*. Head and Neck, 39(11), pp. 2232–2240. doi: 10.1002/hed.24886.
- Tagay, S. et al. (2006). *Health-Related Quality of Life, Depression And Anxiety In Thyroid Cancer Patients*. Quality of Life Research, 15(4), pp. 695–703. doi: 10.1007/s11136-005-3689-7.
- Yuri Choi et al. (2014). *Impact of Post Thyroidectomy Scar On The Quality Of Life of Thyroid Cancer Patients*. Ann dermatol vol 26. No. 26, 20