Quality of life of patients after total and subtotal thyroidectomy

Jakość życia pacjentów po tyroidektomii totalnej i subtotalnej

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B – zbieranie danych
C – przeprowadzenie analizy statystycznej
D – interpretacja wyników
E – przygotowanie manuskryptu
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Abstract

Introduction: Thyroid diseases, especially those that require surgical treatment, are an extremely strong emotional stimulus for the patient. They evoke not only anxiety disorders, but also in the case of complications (especially those long-lasting) can even generate depressive disorders, or significantly affect the patient's self-esteem, and thus its functioning at the social level.
Aim of the study: The objective of the study was to examine the quality of life of patients who underwent surgical treatment of total and subtotal thyroidectomy.
Material and methods: The study was conducted in a group of 102 patients undergoing surgery at the General Surgery Ward of the Hospital. St. Łukasz in Tarnów in the period from December 2018 to April 2019, as well as residents of Małopolska, who had performed thyroidectomy. In research have been used ThyPROpl, VAS Scale, and self-prepared questionnaires.
Results and conclusions: The most common complications of thyroidectomy were tingling and numbness around the mouth and limbs (42.2%). Patients who had symptoms of tetany had a reduced perception of quality of life and health, as well as the quality of life in all its areas. The respondents had a degraded, reduced quality of life in terms of the negative impact of the disease on life (62.01) and fatigue (56.23). The greater the intensity of pain, the lower the quality of life of patients after thyroidectomy. Conclusions. There is the relationship between the quality of life and the number of complications, as well as the severity of pain. This dependence is directly proportional.

Keywords: thyroidectomy, quality of life, thyroid gland, surgical procedure

Introduction

Among all endocrinopathy, thyroid disorders constitute up to 80%, a significant part of which is eligible for surgical treatment. Hyperthyroidism occurs in 2–3% of the population. Its most common causes are the disease of Graves- Basedov, multituberous hyperactive nodules, or autonomic thyroid nodule. The highest number of cases of hyperthyreosis occurs in people aged 50–59. Every year up to 25 000 strumectomies are performed in Poland, which ranks fourth among all surgical procedures.

Patients undergoing the surgery most frequently fear for the emergence of postoperative complications, pain, histopathological findings or even death itself. General anesthesia is also an element generating anxiety. Another specific factor of patient concern is also whether they will be accepted by medical personnel [1, 2].

One of the complications of strumectomy is permanent hypoparathyroidismus, which significantly worsens the quality of life of patients after surgery within the thyroid gland due to an

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adverse change of the patients' well-being on both physical and mental levels. In the long run, hypoparathyroidism may be more difficult to accept than the possible damage to the recurrent laryngeal nerve [3].

The most popular version of the definition of quality of life used in medical science is one based on WHO which says that health is well-being on a physical, mental and social level, not just a lack of disease or disability. Focusing on the quality of life shows a holistic approach in patient care. It concerns both subjective and objective aspects. The subjective view can be assessed by asking the patient questions. [4].

All diseases, as well as hospitalization itself, cause psychological stress. On the other hand, every medical intervention is an interference in the body's inviolability. Lack of independence and dependence on third parties (strangers), as well as impaired contact with the family generate a sense of insecurity. Also, undergoing often embarrassing treatments, the necessity to stay with other patients in one room, as well as pain add to the patients' perception of a decrease in the quality of their life.

In case of cancer patients (including patients suffering from cancer of the thyroid gland), not only the patient's, but also the family's quality of life significantly decreases. It is believed that apart from physical health, the mental sphere of the patient is also significantly degenerated in the somatic context. This has a negative impact on the comfort of living both during and after the oncological treatment is finalized.

Assessing the quality of life of patients is something extremely difficult, because it is based solely on the patient's subjective experience. Its importance is influenced by such generators as: malformation caused by a tumor, mutilation and insufficiency of the function of the organ affected by the lesion, as well as pain caused by both the surgery and the disease itself. In addition, both social and material status, as well as the area of residence and separate individual factors are of substantial significance in the context of quality of life. Pain is an extremely important element that contributes to the regression of the quality of life in patients with head and neck cancer [5].

The proximity of significant anatomical structures, as well as numerous innervations of the neck and head, defines the reason for the most common head and neck pain (GiS) in all cancer patients. Among the studies performed so far, a much higher level of stress has been demonstrated in patients suffering from GiS compared to other types of cancer. They are also more prone to depressive disorders, especially in patients undergoing surgery. It has also been noted that the number of suicides in this group has also been intensified [6].

The objective of the study was to examine the quality of life of patients after a thyroidectomy.

Materials and methods

The survey was conducted from December 2018 to April 2019 in the Ward of General Surgery in St. Łukasz Hospital in Tarnów among 102 inhabitants of the Małopolska region who had undergone a thyroid gland resection. All respondents were informed about the purpose of the study, full anonymity and voluntary participation in the study.

To carry out the research the diagnostic survey method was used. The survey was done using the following questionnaires that constituted the tool: the authors' questionnaire, ThyPROpl – Polish version of the questionnaire of quality of life in patients with thyroid diseases, as well as the VAS Scale.

The authors's questionnaire contains demographic questions and questions about the thyroidectomy procedure (duration, complications).

ThyPROpl – Polish version of the questionnaire for assessing the quality of life in patients with a thyroid disease. It consists of 85 questions. The answers are marked on a 5-point Likert scale, in which 0 represents not at all, and 4 very much. The questions relate to, among others: symptoms of goiter occurring in the patient, hyperthyroidism and hypothyroidism or eye disorders, fatigue, anxiety, depression or emotional susceptibility, assessment of the patient's cognitive function, perception of change in appearance (caused by thyroid gland diseases), as well as quality of life in general [7–9].

VAS (Visual Analogue Scale) scale, takes the form of a 100-millimeter ruler, on which the patient marks the perceived severity of pain. The digit 0 means no symptoms, and 10 unbearable pain.

Verification of the differences between the variables was achieved by using χ^2 independence test, Mann-Whitney test, Kruskel-Wallis test and by calculating the rhoSpearman correlation coefficient. The choice of nonparametric tests was dictated by an insufficient normality of variable distributions (verified by the Kolmogorov-Smirnov and Shapiro-Wilk tests) and by the lack of group equivalence (verified by the compliance test χ^2). A significance level of $p<0.05$ was adopted. Calculations were made in IBM SPSS Statistics 20.

Results

There were 102 people between 18 and 70 years of age in the study group. The time since the thyroidectomy was varied. The most numerous group were people on day 0–3 after thyroidectomy (44.1%). The next largest group of patients were those who underwent surgery 4–7 days earlier (18.6%). The respondents who had a thyroidectomy a few weeks earlier constituted 6.9% of the respondents, a few months earlier 7.8% of the respondents, and 22.5% of all patients – Fig. 1.

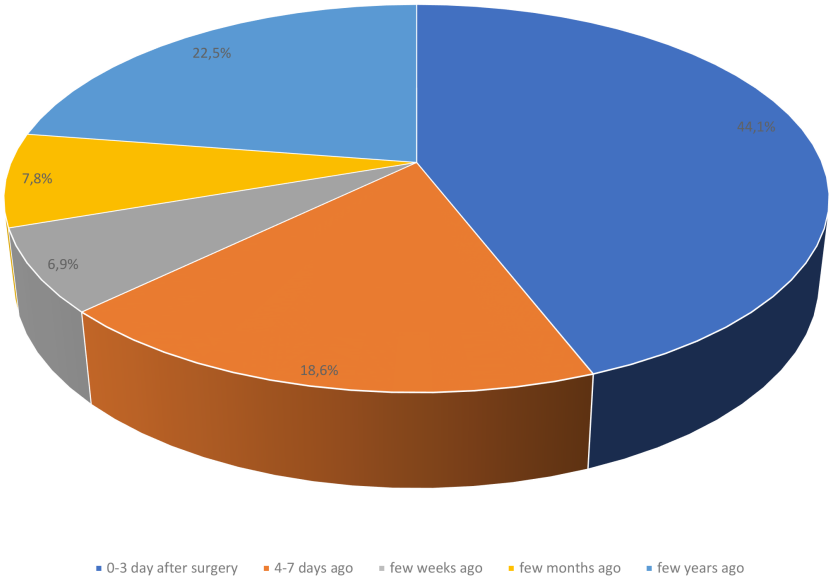

Figure 1. Time elapsed since thyroid surgery

The symptoms that occur in patients immediately after surgery were mostly tingling and numbness around the mouth and in limbs (42.2%). To a lesser extent, there was hoarseness (23.5%), problems with head lifting caused by postoperative pain (20.6%) or other symptoms. The most common late complications were hoarseness (9.8%), voice change (9.8%), infection of the surgical wound (1.0%) or tingling and numbness around the mouth and limbs (1.0%) in individuals. No complications were indicated by 19.6% of people (Table 1).

Based on the ThyPRO scale, it was found that the patients had a reduced quality of life due to the negative impact of the disease on their lives and increased fatigue. At the level of the quality of life was at the average level in the areas of: nervousness and tension, mental wellbeing and relations with other people. For the remaining scales, the quality of life was slightly reduced (Table 2).

The average level of pain intensity among the respondents was 4.47 points. (SD=2.33) and ranged from 0 points. (4.9%), up to 9 points (1.0%). The most frequently assessed pain level was 4 points (20.6%) (Fig. 2).

Table 1. Early and late complications that occurred after thyroidectomy among the patients studied

Symptoms	Early		Late	
	N	%	N	%
Tingling and numbness around the mouth and limbs	43	42.2	1.0	1.0
Hoarseness	24	23.5	10.0	9.8
Difficulties with lifting the head associated with postoperative pain	21	20.6	0.0	0.0
Change of the voice tone	12	11.8	5.0	4.9
Muscle spasm in the face and / or fingers	11	10.8	1.0	1.0
Difficulties while speaking	6	5.9	0.0	0.0
Swallowing disorders	6	5.9	0.0	0.0
Dyspnoea	5	4.9	0.0	0.0
Hematoma in a postoperative wound	4	3.9	0.0	0.0
Haemorrhage occurred (intra- or postoperative)	2	2.0	0.0	0.0
Fever	1	1.0	0.0	0.0
Postoperative wound infection	0	0.0	1.0	1.0
Dissolution of the edges of the wound	0	0.0	0.0	0.0
Goitre recur	0	0.0	0.0	0.0
None of the above	11	10.8	20.0	19.6

Table 2. Quality of life (ThyPRO)

Symptoms	Mean	Me	SD	Min.	Max.	T	p
goitre	32.06	34.09	16.85	0.00	77.27	-10.75	<0.0001*
hyperthyroidism	23.25	18.75	15.68	0.00	75.00	-17.23	<0.0001*
hypothyroidism	24.45	18.75	19.65	0.00	93.75	-13.13	<0.0001*
ocular symptoms	23.28	18.75	15.88	0.00	75.00	-16.99	<0.0001*
fatigue	56.23	57.14	16.43	0.00	92.86	3.83	0.0002*
weakness and concentration	32.15	29.17	22.91	0.00	83.33	-7.87	<0.0001*
nervousness and tension	46.32	50.00	21.51	0.00	100.00	-1.73	0.0874
mental wellbeing	49.68	50.00	18.37	0.00	89.29	-0.17	0.8628
problems with coping and mood swings	40.25	41.67	13.66	5.56	77.78	-7.21	<0.0001*
difficult relations with other people	46.45	40.63	36.61	0.00	100.00	-0.98	0.3292
everyday difficulties	25.61	16.67	19.19	0.00	95.83	-12.83	<0.0001*
disturbed sex life	29.66	25.00	23.46	0.00	100.00	-8.76	<0.0001*
problems with appearance	43.42	50.00	20.21	0.00	83.33	3.29	0.0014*
negative impact of the disease on life	62.01	62.50	30.61	0.00	100.00	3.96	0.0001*
influence of disease on the overall quality of life	36.69	36.91	12.01	10.00	68.53	-11.19	<0.0001*

*Statistically significant difference

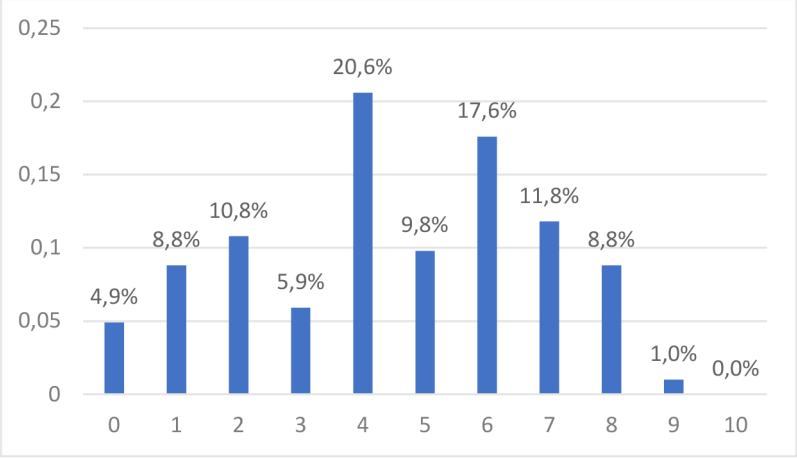

Figure 2. Severity of pain (VAS)

The analysis of the data showed that the higher intensity of pain felt by the participants corresponded to the reduced quality of life in most of the ThyPRO domains ($p<0.05$). There is no evidence that the level of pain significantly determined the quality of life of respondents in terms of the symptoms of hypothyroidism and hyperthyroidism, ocular symptoms or concentration (Table 3).

It has been shown that the greater the number of early symptoms, the greater the quality of life problems on the goiter symptoms scale ($p<0.0001$). Patients with more early symptoms had a lower quality of life in relationships with other people ($p<0.0001$), the disease had a negative effect on their lives ($p=0.0028$) and generally affected their quality of life ($p = 0,0089$). Greater numbers of late symptoms corresponded with better quality of life in terms of goiter symptoms ($p=0.0002$), mental well-being ($p=0.0065$), relationships with other people ($p<0.0001$), problems with appearance ($p=0.0003$), a negative impact of the disease on life ($p<0.0001$) and on the overall quality of life ($p=0.0326$) (Table 4).

The most common symptoms among the studied population were hoarseness, tingling and numbness around the mouth and limbs, and problems with head lifting caused by postoperative pain. Individuals with hoarseness have reduced quality of life in the social field , lower quality of life associated with about goiter symptoms, relations with other people, and a higher quality of life in terms of fatigue as well as memory and concentration (Table 5).

People with tingling and numbness of the lips and limbs had a reduced perception of quality of life and health as well as a lower quality of life in all areas. Such people had a lower

Table 2. Quality of life (ThyPRO)

Symptoms	Mean	Me	SD	Min.	Max.	T	p
goitre	32.06	34.09	16.85	0.00	77.27	-10.75	<0.0001*
hyperthyroidism	23.25	18.75	15.68	0.00	75.00	-17.23	<0.0001*
hypothyroidism	24.45	18.75	19.65	0.00	93.75	-13.13	<0.0001*
ocular symptoms	23.28	18.75	15.88	0.00	75.00	-16.99	<0.0001*
fatigue	56.23	57.14	16.43	0.00	92.86	3.83	0.0002*
weakness and concentration	32.15	29.17	22.91	0.00	83.33	-7.87	<0.0001*
nervousness and tension	46.32	50.00	21.51	0.00	100.00	-1.73	0.0874
mental wellbeing	49.68	50.00	18.37	0.00	89.29	-0.17	0.8628
problems with coping and mood swings	40.25	41.67	13.66	5.56	77.78	-7.21	<0.0001*
difficult relations with other people	46.45	40.63	36.61	0.00	100.00	-0.98	0.3292
everyday difficulties	25.61	16.67	19.19	0.00	95.83	-12.83	<0.0001*
disturbed sex life	29.66	25.00	23.46	0.00	100.00	-8.76	<0.0001*
problems with appearance	43.42	50.00	20.21	0.00	83.33	3.29	0.0014*
negative impact of the disease on life	62.01	62.50	30.61	0.00	100.00	3.96	0.0001*
influence of disease on the overall quality of life	36.69	36.91	12.01	10.00	68.53	-11.19	<0.0001*

*Statistically significant difference

Table 3. Quality of life (ThyPRO) and severity of pain (VAS)

		Severity of pain (VAS)
Goitre symptoms	rho	0.636
	p	<0.0001*
Symptoms of hyperthyroidism	rho	-0.057
	p	0.5708
Hypothyroidism symptoms	rho	0.140
	p	0.1592
Ocular symptoms	rho	0.131
	p	0.1906
Fatigue	rho	0.228
	p	0.0213*
Memory and concentration	rho	0.173
	p	0.0823
Nervousness and tension	rho	0.294
	p	0.0027*
Mental well-being	rho	0.357
	p	0.0002*
Problems with coping or mood swings	rho	0.313
	p	0.0014*
Relations with other people	rho	0.444
	p	<0.0001*
Everyday difficulties	rho	0.330
	p	0.0007*
Sex life	rho	0.373
	p	0.0001*
Problems with appearance	rho	0.373
	p	0.0001*
Negative impact of the disease on life	rho	0.553
	p	<0.0001*
Impact of the disease on the overall quality of life	rho	0.516
	p	<0.0001*

*Statistically significant correlation

Table 4. Quality of life (ThyPRO) and the number of early and late symptoms

		Number of early symptoms	Number of late symptoms
Goiter symptoms	rho	0.524	-0.367
	p	<0.0001*	0.0002*
Symptoms of hyperthyroidism	rho	0.028	0.132
	p	0.7771	0.1848
Hypothyroidism symptoms	rho	-0.072	0.123
	p	0.4712	0.2187
Ocular symptoms	rho	-0.150	0,189
	p	0.1317	0.0572
Fatigue	rho	0.068	-0.147
	p	0.4948	0.1417
Memory and concentration	rho	-0.050	0,004
	p	0.6145	0.9698
Nervousness and tension	rho	0.101	-0.113
	p	0.3119	0.2584
Mental well-being	rho	0.174	-0.268
	p	0.0804	0.0065*
Problems with coping or mood swings	rho	0.115	-0.122
	p	0.2500	0.2236
Relations with other people	rho	0.610	-0.515
	p	<0.0001*	<0.0001*
Everyday difficulties	rho	0.172	-0.035
	p	0.0843	0.7240
Sex life	rho	0.022	0.070
	p	0.8248	0.4820
Problems with appearance	rho	0.134	-0.349
	p	0.1787	0.0003*
Negative impact of the disease on life	rho	0.293	-0.414
	p	0.0028*	<0.0001*
Impact of the disease on the overall quality of life	rho	0.258	-0.212
	p	0.0089*	0.0326*

*Statistically significant correlation

quality of life associated with symptoms of goitre, fatigue, mental well-being, the negative impact of the disease on life and its impact on the overall quality of life (Table 6).

The occurrence of problems with raising the head caused by postoperative pain reduced the perception of one's life and health and the quality of life in all areas (except for the environment). People with these symptoms had a higher intensity of goiter symptoms (44.05), a higher level of fatigue (62.07), a lower quality of life related to mental well-being (58.67), relations with other people (64.29), experienced a more negative impact of the disease on life (78.57) or on the overall quality of life (41.62) (Table 7).

Table 5. Quality of life and the occurrence of hoarseness

Hoarseness	No		Yes		p
	Mean	SD	Mean	SD	
Individual overall perception of quality of life	2.88	1.16	2.88	0.99	0.7650
Individual overall perception of health quality	3.06	1.04	2.88	0.99	0.4188
Physical domain	51.65	19.53	47.62	17.07	0.3822
Psychological field	60.52	15,73	54.69	12.73	0.0812
Social field	71.90	16.67	46.53	19:18	<0.0001*
Environment	61.54	13.31	56.12	10.96	0.0922
Goiter symptoms	28.32	15.59	44.22	15.24	0.0001*
Symptoms of hyperthyroidism	21.92	14.42	27.60	18.92	0.3319
Hypothyroidism symptoms	24.36	19,80	24.74	19.55	0.9083
Ocular symptoms	24,00	15.56	20.96	17.03	0.1579
Fatigue	57.97	16.51	50.60	15:14	0.0302*
Memory and concentration	34.83	23.04	23.44	20.59	0.0274*
Nervousness and tension	47.44	21.96	42.71	20.01	0.4029
Mental well-being	50.69	18.96	46.43	16.25	0.2550
Problems with coping or mood swings	39.99	13.95	41,09	12.95	0.9274
Relations with other people	32.45	28.28	91.93	19.63	<0.0001*
Everyday difficulties	24,31	19.06	29.86	19.41	0.1736
Sex life	29.97	23.09	28.65	25.13	0.7722
Problems with appearance	44.71	20.58	39.24	18.75	0.2320
Negative impact of the disease on life	63.14	32.41	58.33	24.08	0.3916
Impact of the disease on the overall quality of life	35.97	11.97	39.03	12.09	0.4825

*Statistically significant difference

Table 6. Quality of life and the occurrence of tingling around the mouth and limbs

Tingling and numbness around the mouth and in limbs	No		Yes		p
	Mean	SD	Mean	SD	
Individual overall perception of quality of life	3.53	0.60	2.00	1.07	<0.0001*
Individual overall perception of health quality	3.58	0.65	2.26	0.95	<0.0001*
Physical domain	60.53	13.82	37.21	16.72	<0.0001*
Psychological field	65.11	13.38	50.97	13.84	<0.0001*
Social field	70.20	19.46	60.08	20.21	0.0130*
Environment	61.65	14.99	58.36	9.32	0.2363
Goitre symptoms	27.77	19.44	37.95	9.99	0.0007*
Symptoms of hyperthyroidism	25.21	17.38	20.57	12.71	0.2106
Hypothyroidism symptoms	27.22	22.23	20.64	14.85	0.2500
Ocular symptoms	25.53	18.57	20.20	10.66	0.3016
Fatigue	53.27	17.90	60.30	13.32	0.0334*
Memory and concentration	30.08	22.65	34.98	23.22	0.2877
Nervousness and tension	43.29	22.57	50.48	19.46	0.0722
Mentall well-being	45.46	17.77	55.48	17.78	0.0043*
Problems with coping or mood swings	39.74	15.73	40.96	10.31	0.6731
Relations with other people	39.62	35.82	55.81	35.99	0.0249
Everyday difficulties	26.27	21.98	24.71	14.73	0.7983
Sex life	30.51	26.90	28.49	17.95	0.9229
Problems with appearance	39.90	20.98	48.26	18.26	0.0510
Negative impact of the disease on life	49.15	24.11	79.65	30.01	<0.0001*
Impact of the disease on the overall quality of life	35.00	14.00	39.01	8.15	0.0062*

*Statistically significant difference

Table 7. Quality of life and occurrence of problems with head lifting caused by postoperative pain

Head lifting problems caused by postoperative pain	No		Yes		p
	Mean	SD	Mean	SD	
Individual overall perception of quality of life	3.23	0.84	1.52	1.03	<0.0001*
Individual overall perception of health quality	3.31	0.82	1.90	1.00	<0.0001*
Physical domain	56.44	15.24	28.57	15.53	<0.0001*
Psychological field	63.17	13.30	43.65	12.05	<0.0001*
Social field	69.34	19.04	52.78	20.13	0.0015*
Environment	61.46	13.62	55.65	8.76	0.0746
Goitre symptoms	28.96	16.82	44.05	10.65	<0.0001*
Symptoms of hyperthyroidism	23.69	15.40	21.58	17.03	0.3762
Hypothyroidism symptoms	24.85	20.73	22.92	15.10	0.9402
Ocular symptoms	23.57	17.14	22.17	9.88	0.6904
Fatigue	54.72	16.57	62.07	14.83	0.0388*
Memory and concentration	31.69	22.71	33.93	24.13	0.7557
Nervousness and tension	44.96	21.51	51.59	21.22	0.2230
Mental well-being	47.35	18.12	58.67	16.85	0.0089*
Problems with coping or mood swings	39.64	14.48	42.59	9.83	0.4372
Relations with other people	41.82	36.21	64.29	33.20	0.0095*
Everyday difficulties	24.95	19.56	28.17	17.92	0.3731
Sex life	27.93	24.31	36.31	18.92	0.0703
Problems with appearance	42.03	20.89	48.81	16.73	0.1759
Negative impact of the disease on life	57.72	27.85	78.57	35.61	0.0022*
Impact of the disease on the overall quality of life	35.41	12.34	41.62	9.31	0.0053*

*Statistically significant difference

Discussion

The dynamic progress in the fields of surgery and modern technologies resulted in a visible reduction of complications after thyroidectomy. Hospitalization is a significant psychological burden for the patient. The degree of the perception of negative emotions generates many factors [1, 2].

Apart from extending the patient's life, it is extremely important, and perhaps the most important, to improve the quality of life of the suffering person. It is for this reason that the interest in research on quality of life among people suffering from various types of diseases is gaining momentum [4]. Diseases of thyroid glands are more likely to affect female representatives. Confirmation of this thesis is also reflected in our own research, which shows that among the studied group women constituted as much as 81.4%, while men only 18.6%. A similar sex distribution of respondents appeared in research presented by Śniecikowska et al. [3], where a group of women accounted for up to 85%. Also in the research of Li et al. and Dogan et al. respectively 79% and 75% of people after the surgery are women [10, 11].

Quality of life is one of the most important aspects of our existence. The level of its shape is influenced by unusually many factors contained in its various areas. Undeniably, the dominant element is health. The degree of disability, ailments or pain that cause limitations in everyday functioning very often significantly reduce the quality of life. The authors' research based on the ThyPRO scale showed that patients had a reduced quality of life in terms of the negative impact of the disease on life and fatigue. The quality of life was at the average level in terms of nervousness and tension, mental well-being and relations with other people. It was found that patients with more symptoms had a reduced perception of quality of life and health as well as quality of existence in all areas.

Similar results were also seen in studies by other authors. People suffering from diseases assessed the quality of their lives at a much lower level compared to people who had no diagnosed disease entities. Stępień et al. [12] show that both the level of anxiety and depression were much higher in respondents suffering from the disease and it degraded the standard of living in numerous dimensions. It could also be caused by pain, hypoxia of the brain and the drugs used.

A thyroidectomy procedure is an extremely difficult experience for patients, which is associated with numerous fears, and thus a reduction in the quality of life in the psychological and social sphere, and in the case of complications, also a limitation of the physical domain.

In Śniecikowska [2], 39% of respondents described the procedure as an extremely unpleasant experience, and as many as 95% of respondents reported a negative emotional state caused by the surgery. The main source of concern was the risk of complications and waiting for the histopathological test result. Another element extremely stressful for the respondents was an-

esthesia. Only 5% of patients did not experience anxiety before surgery, and 18% also after one. Less than half (49%) of patients declared high levels of anxiety, and 35% of people experienced moderate stress. Bączyk et al. [13] reports that 15% of patients with differentiated thyroid cancers had depressive symptoms and 33% had borderline anxiety reactions.

In the case of the authors' research, the respondents had the highest quality of life index in the social field, slightly lower in the environmental field. The quality of life in the psychological field was slightly lower. The quality of life in the physical field was rated the lowest. In the case of the physical field, the quality of life was at an average level, while in the other fields it was satisfactory.

The above-mentioned results clearly prove that the element that causes the greatest fears in people undergoing thyroidectomy is the possibility of numerous complications. Their appearance very often impairs the patient's somatic as well as mental sphere, which results in a decrease in life efficiency.

Studies conducted by Sawant et al. [14] show that postoperative complications after thyroidectomy affected 14% of the surveyed, while the research carried out by Cipolla et al. [15] reports the value of up to 43.8%. Kazaure et al. showed that 5.8% of 7366 patients had thyroid hypocalcaemia after thyroidectomy, 83.2% required intravenous calcium therapy [16].

In our study we have shown that the symptoms which occurred in patients immediately after surgery were mostly tingling and numbness around the mouth and in limbs (42.2%). To a lesser extent, there was hoarseness (23.5%), problems with raising the head caused by postoperative pain (20.6%).

Patients with more symptoms had a lower quality of life in relationships with other people, the disease had a negative impact on their lives and generally affected their quality of life. It was found that patients with more symptoms had a reduced perception of quality of life and health as well as quality of life in general.

People reporting symptoms in the form of hoarseness had a reduced quality of life in the social field. Patients with hoarseness symptoms had a lower quality of life associated with goitre symptoms, relationships with other people, while better quality of life in terms of fatigue as well as memory and concentration. People with tingling and numbness of the lips and limbs had a reduced perception of quality of life and health and quality of life in all areas. Such people had a lower quality of life related to the symptoms of goitre, fatigue, mental well-being, the negative impact of the disease on life and its impact on the overall quality of life.

The mere fact of hospitalization and thyroidectomy brings an extremely high psychological burden on patients. However, the occurrence of complications following the resection of the thyroid gland is the key element that can severely impair the daily functioning. In the case of research conducted by Lelonek et al. [17] more than a half of the respondents had problems adapting to the restrictions resulting from the disease. More than a half of the respondents' (55.4%) health condition prevents them from performing their favourite activities.

Hypoparathyroidism is one of the most commonly described complications of the thyroidectomy. In studies by Śniecikowska et al. [3] 48% of patients were shown to have postoperative hypoparathyroidism, and 45% had overt clinical manifestations in the form of paresthesia affecting the face and limbs. On the other hand, in studies conducted by Park et al. [18] in patients after total thyroidectomy, postoperative hypocalcemic symptoms occurred in 21.9% of respondents and 41.2% of the group of respondents underwent total thyroidectomy (as primary treatment). These results significantly correlate with the results of the author's own research, in which tetany symptoms affected 42.2% of respondents.

The abovementioned facts clearly prove that the element that causes the greatest fears for people undergoing strumectomy is the possibility of complications. Their appearance very often impairs the patient's somatic as well as mental sphere, which results in a reduction of life efficiency.

Another extremely complication which handicaps the quality of life among patients who underwent thyroidectomy is laryngeal nerve damage. This ailment can cause problems not only on the somatic level, but also social or mental one. The person that has been affected may have problems with social contacts (social withdrawal), as well as the lack of acceptance due to an altered voice. In research conducted by Koziński et al. [19] hoarseness affected 25.5% of patients undergoing thyroid resection. In the authors' own research, the number of people who suffered thyroidectomy due to recurrent laryngeal nerve damage was similar and constituted 23.5% of all respondents.

Among the factors that have a significant impact on the quality of life (especially in the postoperative period) pain plays a substantial role. Its high intensity is able to impair functioning on every level of life, and thus degrade its quality. An analysis of the data in the current study showed that a higher level of pain corresponded to a reduced quality of life in most domains of the ThyPRO scale. It has not been determined that the level of pain affects the quality of life connected with symptoms of hypothyroidism and hyperthyroidism, ocular symptoms, memory and concentrating. Moreover, it was shown that the greater the pain intensity by VAS, the lower the quality of life of the respondents. This concerned both the perception of the quality of life in general and in individual areas.

The occurrence of problems with raising the head caused by postoperative pain reduced the perception of one's life and health and the quality of life in all areas (except for the environment). People who had these symptoms had a higher level of fatigue, a lower quality of life related to mental well-being, relationships with other people, felt a more negative impact of the disease on life or on the overall quality of life. Dogan et al. mention economic status, social support and the existence

of mental illnesses before the surgery as factors affecting the quality of life after thyroidectomy [11].

In summary, the quality of life is affected by an extremely large number of factors that affect both the mental, physical and social sphere. One of the main elements changing the level of satisfaction with one's existence is health. People suffering from ailments rate the quality of life lower. The data presented clearly show that patients affected by complications have a reduced sense of proper functioning.

Limitations and Future Research

The limitation of the study was the number of patients tested. It would certainly be valuable to extend the study to other institutions where thyroidectomy are performed. In future studies, we will try to expand the group of patients who have thyroidectomy.

Conclusions

Thanks to the analysis of the conducted research, the following conclusions can be drawn:

1. A thyroidectomy procedure had a negative impact on the quality of life of respondents primarily in the physical field.
2. The higher the severity of pain in the patients studied, the lower their quality of life.
3. The greater the number of postoperative complications that patients had, the lower their quality of life was. This was particularly evident in the presence of overt symptoms of tetany and recurrent laryngeal nerve damage.

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Streszczenie

Wprowadzenie: Choroby tarczycy, zwłaszcza te, które wymagają leczenia operacyjnego są niezwykle silnym bodźcem emocjonalnym dla chorego. Wywołują one nie tylko dolegliwości lękowe, ale także w przypadku powikłań (zwłaszcza tych długotrwałych) mogą generować nawet zaburzenia depresyjne, bądź w znaczący sposób wpływać na samoocenę pacjenta, a tym samym jego funkcjonowanie na płaszczyźnie społecznej.

Cel pracy: Celem pracy było zbadanie jakości życia pacjentów, którzy poddani byli zabiegowi strumektomii tak totalnej jak i subtotalnej.

Materiał i metody: Badanie przeprowadzono w grupie 102 pacjentów poddanych operacji w Oddziale Chirurgii Ogólnej Szpitala im. Św. Łukasza w Tarnowie w okresie od grudnia 2018 roku do kwietnia 2019 roku, a także mieszkańców Małopolski, którzy mieli wykonaną tyreodektomię. W badaniach wykorzystano kwestionariusz ThyPROpl, skalę VAS, a także ankietę autorską.

Wyniki i wnioski: Najczęstszymi powikłaniami strumektomii były mrowienie i drętwienie wokół ust oraz kończynach (42,2%). Pacjenci, u których występowały objawy tężyczki posiadali obniżoną percepcję jakości życia i zdrowia, a także jakość życia we wszystkich jego dziedzinach. Ponadto ankietowani posiadali zdegradowaną obniżoną jakość życia w zakresie negatywnego wpływu choroby na życie (62,01) oraz zmęczenia (56,23). Im większe było natężenie bólu, tym niższa była jakość życia pacjentów po strumektomii. Wnioski. Istnieje związek pomiędzy jakością życia badanych po strumektomii a liczbą powikłań, stopniem nasilenia dolegliwości bólowych. Zależność ta jest wprost proporcjonalna.

Słowa kluczowe: jakość życia, tarczyca, zabieg operacyjny, tyroidectomia