Comparative assessment of the quality of life of patients with thyroid pathology after simultaneous and isolated surgical interventions

Sergey Zavgorodniy[*], **Mikhail Kubrak**[*,1], **Mikhail Danilyuk**[*] **and Andrey Rylov**[*]
[*]Zaporizhzhia state medical University, Ukraine, Zaporizhzhia, av. Mayakovskogo, 26.

ABSTRACT Background: In connection with the widespread of simultaneous surgical interventions, there is an insignificant number of works, indicating the deterioration of perioperative condition and subsequent rehabilitation of patients after such operations.
Aims: To conduct a comparative assessment of the quality of life of patients after simultaneous and isolated surgical interventions using a survey using a standardised questionnaire "SF – 36".
Materials and methods: The leading group included 35 patients with combined pathology of the thyroid gland (TG) and cholelithiasis (CL) / gallbladder polyposis who underwent simultaneous operations. The comparison group included 35 patients with thyroid disease who underwent isolated interventions. Six months following the surgery, the patients of both groups were interviewed using a questionnaire "SF-36".
Results: The level of physical health of patients of the main group was estimated at 49.4 ± 4.1 points. In patients of the comparison group the physical health index was 47.9 ± 3.8 points, U = 461.0; p = 0.076. Mental health index in patients of the main group was at the level of 46.9 ± 3.5 points; comparison group - 45.4 ± 3.9 points, U = 587.0; p = 0.769.
Conclusions: The level of physical health of patients after simultaneous surgical interventions in the postoperative period statistically does not differ from the same indicator in patients who underwent isolated operations: U = 461.0; p = 0.076. The indicator of mental health in patients of the main group does not differ statistically from its level in the comparison group: U = 587.0; p = 0.769. Simultaneous surgical interventions in patients with thyroid pathology do not worsen the quality of life of patients compared with isolated operations.

KEYWORDS Thyroid, Surgery, Endocrine, Quality, Life, Operations

Introduction

The pathology of TG has been ranked first among endocrine diseases with an incidence of 9.9 – 11.3 cases per 100 thousand population for many years [5], [6], [9], [12]. At the same time, in 20 – 30% of patients there is a combined surgical pathology of other organs [8], [10], [11].

Because simultaneous surgical interventions have been widely performed, isolated works on the topic start to appear, in which the deterioration of the perioperative state and subsequent rehabilitation of patients after such operations are being described [1], [2].

Given the fact that simultaneous interventions tend to gain popularity increasingly popular among surgeons, it is essential to assess the quality of life of patients after such operations and compare these results with the data received after isolated surgical interventions.

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[1]Mikhail Kubrak, Ukraine, Zaporizhzhia, av. Motorostroiteley, 64 78; mobile phone: +380957007893; e-mail: braviorio@gmail.com

Aims

To conduct a comparative assessment of the quality of life of patients after simultaneous and isolated surgical interventions by means of a survey using a standardised questionnaire "SF – 36".

Materials and Methods

The main group included 35 patients with combined pathology of TG and CL/gallbladder polyposis. The comparison group consisted of 35 patients with isolated pathology of the TG.

All patients examined and operated in "Zaporizhzhya City clinical hospital of emergency and ambulance". All the participants of study provided written informed consent.

A survey of patients conducted by the developed algorithm of diagnostics combined surgical pathology (Patent # 128139 Ukraine, IPC (2018.01) G01N 33/48 (2006.01), A61B 5/00, A61B 8/00, A61B 6/03 (2006.01). The diagnostic method of combined surgical pathology and choice of tactics of surgical intervention in patients with diseases of the endocrine system / Zavgorodniy, S. M., Kubrak, M. A., Rylov, A. I., Danyluk, M. B.; owners: Zaporizhzhya State Medical University (UA), S. M. Zavgorodniy (UA), Kurbak M. A. (UA), Rylov. I. (UA), Danyluk, M. B. (UA) // Industrial property. - Publ. 10.09.2018, Byul. No. 17).

The gender structure of both groups dominated by women - 32 (91.4 %), men was 3 (8.6 %), U = 620.0; p = 1.0.

The main age of patients in the main group was 58.8 ± 9.9 years, ranging from 38 to 80 years; in the comparison group - 56.5 ± 10.9 years, and ranging from 30 to 78 years, U = 536.0; p = 0.372. The main pathology was similar for the main and the comparison groups: U = 581.0; p = 0.641, Fig. 1.

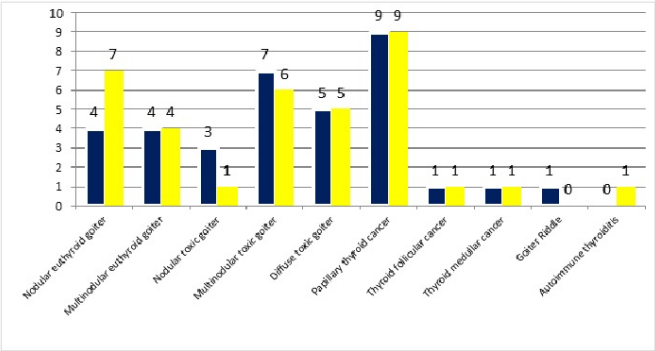

Figure 1. Structure of the main pathology in patients of the main and comparison groups, U = 581.0; p = 0.641.

All patients of the main group – 35 (100%) underwent simultaneous operations. Patients of the comparison group - 35 (100%) underwent isolated thyroid interventions, tab. 1.

The main and comparison groups included patients at risk of operation 1 and 2 for ASA.

All operations performed as planned, under general anaesthesia with tracheal intubation and artificial lung ventilation.

All cases of laparoscopic cholecystectomy performed for patients with chronic calculous cholecystitis in the stage of remission or catarrhal exacerbation.

The average duration of the operation in main group was 113.1 ± 23.7 minutes, in the comparison group – 75.9 ± 19.8 minutes, U = 328.1; p = 0.0041.

The time of anaesthesia in main group was 141.6 ± 28.3 minutes, in comparison group – 108.6 ± 29.6 minutes, U = 294.3; p = 0.0036.

The average length of stay of the patients of the main group in the hospital was 9.6 ± 1.6 days, the interval from 8 to 15 days; comparison group - 8.5 ± 1.2 days, the interval from 4 to 11 days, U = 393.5; p = 0.0073.

Postoperative complications observed in 8 (22.9%) patients after simultaneous operations and in 8 (22.9%) - after isolated interventions.

In the main group, in 6 (17.1%) patients, transient postoperative hypoparathyroidism occurred, in 1 (2.9%) patient - a postoperative seroma of the neck wound and in 1 (2.9%) patient - a hematoma of the remote gallbladder site. In comparison group in 7 (20.0%) patients were transient postoperative hypoparathyroidism, in 1 (2.9%) patient - a postoperative seroma of the wound. Symptomatic hypocalcemia was observed in 3 (8.6%) patients of the main group and 3 (8.6%) comparison patients (the level of blood parathyroid hormone was below 3.0 pg/ml). Conducting therapy with 10% calcium gluconate, under the control of ionised calcium, eliminated the symptoms of hypocalcemia in this category of patients.

Persistent hypoparathyroidism, recurrent nerve injuries, repeated interventions in connection with fluid formations, and no fatal cases observed in both groups. Six months following the surgical intervention the patients of the main and comparison groups participated in a survey based on a standardised questionnaire "SF-36 Health Status Survey" (Ware J. E. et al., 1993).

The 36 items of the questionnaire are grouped into eight scales: physical functioning, role functioning (physical), bodily pain, general health, vitality, social functioning, role functioning (emotional) and psychological health. Indicators of each scale range from 0 to 100 points, where 100 points - full health. All scales form two indicators: physical and mental components of health.

Statistical processing of the results was carried out with the help of application software packages STATISTICA 13.0, TIBCO Software inc. (License JPZ804I382130ARCN10-J) and MICROSOFT EXEL 2013 (License 00331-10000-00001-AA404) using nonparametric analysis methods: Mann-Whitney (U) test for related groups.

Results

Indicators of quality of life of patients on the scales of the questionnaire "SF-36", six months after simultaneous and isolated surgery, demonstrate statistically similar values, tab. 2.

The level of physical health of patients of the main group was 49.4 ± 4.1 points; the interval from 39.6 to 56.4 points. In patients of the comparison group, after isolated operations on TG, the physical health index was 47.9 ± 3.8 points, the interval from 40.4 to 55.0 points, U = 461.0; p = 0.076.

Mental health index in patients of the main group was at the level of 46.9 ± 3.5 points, ranging from 39.6 to 52.6 points; comparison group - 45.4 ± 3.9 points, ranging from 35.2 to 51.7 points, U = 587.0; p = 0.769.

Discussion

Many authors note that the evaluation of long-term results in patients after surgery is one of the main indicators of the effectiveness of the chosen method of treatment of a pathology [4], [7]. The quality of life of the patient after surgery is the criterion that objectively indicates the advantages or disadvantages of surgery.

Table 1 The structure of surgical interventions in patients of the main and comparison groups.

Operation	Main group, n = 35		Comparison group, n = 35		Total, n = 70	
	Num.	%	Num.	%	Num.	%
Hemithyroidectomy	0	0	9	25,7	9	12,9
Thyroidectomy	0	0	15	42,9	15	21,4
Thyroidectomy with lymphodissection	0	0	11	31,4	11	15,7
Hemithyroidectomy + laparoscopic cholecystectomy	9	25,7	0	0	9	12,9
Thyroidectomy + laparoscopic cholecystectomy	15	42,9	0	0	15	21,4
Thyroidectomy with lymphodissection + laparoscopic cholecystectomy	11	31,4	0	0	11	15,7

Table 2 Indicators of quality of life of patients of the main and comparison groups on scales of the questionnaire SF-36.

Indicator of scale	Main group, n = 35	Comparison group, n = 35	Statistic
Physical functioning (PF)	81,3 ± 7,2	80,7 ± 8,1	U = 564,0 = 0,127
Role functioning (physical) (RF)	63,2 ± 11,3	64,1 ± 12,3	U = 581,0 = 0,314
Bodily pain (BP)	87,2 ± 7,8	87,7 ± 9,4	U = 474,0 = 0,701
General health (GH)	68,3 ± 6,1	66,2 ± 6,7	U = 467,0 = 0,498
Vitality (VT)	69,5 ± 9,8	67,7 ± 10,1	U = 521,0 = 0,597
Social functioning (SF)	79,4 ± 6,7	78,1 ± 6,8	U = 546,0 = 0,781
Role functioning (emotional) (RE)	76,9 ± 5,9	77,1 ± 5,2	U = 414,0 = 0,476
Psychological health (MH)	51,1 ± 4,5	52,0 ± 4,8	U = 621,0 = 0,864

Many different methods have been developed for its evaluation, but it is the survey that takes the leading place among them [1].

Using the questionnaire "SF-36 Health Status Survey" (Ware J. E. et al. 1993) allows assessing thoroughly both physical and mental health of the patient at any stage of his treatment [3].

The survey of literature shows that the issue of simultaneous operations in patients with combined diseases of the endocrine and other organs remains very relevant and debatable due to the lack of amount of accumulated experience in this area. Assessment of the quality of life of patients who survived these kinds of surgeries is presented only in rare works, and results obtained are quite contradictory.

Conclusion

1. The level of physical health of patients after simultaneous surgical interventions in the postoperative period statistically does not differ from the same indicator in patients who underwent isolated operations: U = 461.0; p = 0.076.

2. The indicator of mental health in patients of the main group does not differ statistically from its level in the comparison group: U = 587.0; p = 0.769.

3. Simultaneous surgical interventions in patients with thyroid pathology do not worsen the quality of life of patients compared with isolated operations.

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Competing Interests

The authors declared that this review was done independently without any conflict of interest of any organizations that would lead this review to bias.

Ethical statement

The ethical committee of Zaporizhzhya State Medical University approved the scientific work. Medical research conducted according to the World Medical Association Declaration of Helsinki

References

1. Doroshina T. B., Ascetics M. R., Zhmyleva O. A. Ways to improve the quality of life of surgical patients with thyroid cancer. Vestnik of surgery named. I. I. Grekova 2015; 4 (174): 50 - 52. DOI: https://doi.org/10.24884/0042-4625-2015-174-4-50-52.

2. Murodov A. I., Kadyrov Z. A., Odilov A. Y., Aliev Z. O. Quality of life in patients with concomitant diseases of abdominal cavity organs and retroperitoneal space after simultaneous videoendoscopic and traditional operations. Medical Bulletin of Barcodescan 2017; № 3 (69): 48 - 51.

3. Rybachkov V. V., Teviashov A. V., Rossoshanskaya E. I., Kabanov E. N. Assessment of the quality of life of patients operated on for nodular lesions of the thyroid gland. Kurskiy scientifically practical Herald "Persons and his health" 2011; 1: 72 – 75.

4. Sadriev O. N., Gaibov A. D. Simultaneous operations in surgical diseases of the adrenal glands. Surgery News 2014; 6 (22): 678 - 686. DOI: http://dx.doi.org/10.18484/2305-0047.2014.6.678.

5. Pavlovsky M. P., Kolomiytsev V. I., Syroid M. A., Gavrish Ya. I. Simultaneous operations in patients with gallstone disease and surgical pathology of endocrine organs. Clinical endocrinology and endocrine surgery 2010; 1 (30): 16. - 19. DOI: https://doi.org/10.24026/1818-1384.1(30).2010.96345.

6. Cherenko S. M., Sheptuha S. M. Simultaneous operations on the thyroid and parathyroid glands and their impact on the development of postoperative hypocalcemia. Clinical endocrinology and endocrine surgery 2015; 1 (49): 14 - 18. DOI: https://doi.org/10.24026/1818-1384.1(49).2015.74440.

7. Trystuła M., Kapelak B., Kruczek T., Kołodziejczyk B., Iwaszczuk P., Sadowski J. An evaluation of the effectiveness of combined cardiac and thyroid surgery of patients with a high perioperative risk. Acta Neuropsyhologica 2016; 14 (3): 20 - 21. DOI: https://doi.org/10.5604/17307503.1216043.

8. Morris R., Yen T. W. F., Doffek K., Carr A. A., Wilson S. D., Evans D. B., Wang T. S. Concurrent endocrine and other surgical procedures: an institutional experience. The Journal of Surgical Research 2017; 211: 107 – 113. DOI: https://doi.org/10.1016/j.jss.2016.12.013.

9. Kiernan C. M., Schlegel C., Kavalukas S., Isom C., Peters M. F., Solórzano C. C. Does concomitant thyroidectomy increase risks of parathyroidectomy? The Journal of Surgical Research 2016; 203 (1): 34–39. DOI: https://doi.org/10.1016/j.jss.2016.03.059.

10. Caglià P., Tracia A., Amodeo L., Tracia L., Amodeo C., Veroux M. Laparoscopic cholecystectomy and concomitant diseases. Effectiveness of the single step treatment. Ann. Ital. Chir. 2016; 87: 524 - 527.

11. Jovanovic M. D., Zivaljevic V. R., Diklic A. D., Rovcanin B. R., V. Zoric G., Paunovic I. R. Surgical treatment of concomitant thyroid and parathyroid disorders: analysis of 4882 cases. European Archives of Oto-Rhino-Laryngology 2017; 274 (2): 997 – 1004. DOI: https://doi.org/10.1007/s00405-016-4303-z.

12. Emirikçi S., Özçınar B., Öner G., Omarov N., Ağcaoğlu O., Soytaş Y. et al. Thyroid cancer incidence in simultaneous thyroidectomy with parathyroid surgery. Ulusal Cerrahi Dergisi 2015; 31 (4): 214 – 217. DOI: https://doi.org/10.5152/UCD.2015.2666.