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To observe the effect of total parathyroidectomy and autotransplantation on uremia with hyperparathyroidism

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ABSTRACT. *Objective to investigate the effect of total parathyroidectomy and autotransplantation on uremia with hyperparathyroidism. Methods 80 patients with uremia and hyperparathyroidism were selected in this study. The start time was August 2017 and the end time was August 2018. They were divided into two groups by drawing lots. 40 patients were in the reference group and 40 patients were in the study group. The reference group received total parathyroidectomy and the study group received total parathyroidectomy + autotransplantation. Compared with the treatment of patients, statistical analysis. Results the P and Ca values in blood were significantly improved at 1 day, 1 week and 3 months after operation, which was better than that before operation, forming a statistical significance (P < 0.05). There was no significant difference between the two groups (P > 0.05). For the recurrence rate, there was no statistical significance between the two groups (P > 0.05). Conclusion the treatment of uremia with hyperparathyroidism with total parathyroidectomy and autotransplantation can effectively improve the symptoms, facilitate the recovery of multiple indicators, and reduce the recurrence rate, which can be used in clinical practice.*

KEYWORDS: *Total parathyroidectomy, Autotransplantation, Uremia, Hyperparathyroidism*

1. Introduction

Hyperparathyroidism is a common complication of chronic kidney disease, which can be treated by interventional therapy, surgical treatment and drug therapy. There are many surgical treatments, including subtotal parathyroidectomy and parathyroidectomy. Some scholars have proposed [1], uremic patients with hyperparathyroidism can effectively reduce the recurrence rate, avoid reoperation, and reduce the difficulty of operation. At present, the clinical lack of hyperparathyroidism patients surgical treatment related research, based on this, this paper will take 80 patients as the object, to explore the efficacy of total parathyroidectomy + autotransplantation in uremia patients with hyperparathyroidism.

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2. Data and Methods

2.1 General Information

In this study, 80 patients with uremia and hyperparathyroidism were selected. The start time was August 2017 and the end time was August 2018. They were divided into four groups by drawing lots. 40 patients were the reference group and 40 patients were the study group. In the reference group, there were 23 male patients and 17 female patients, aged 41-68 years (52.97 ± 5.28). In the study group, there were 21 male patients and 19 female patients, aged 40-69 years (51.67 ± 5.57). Inclusion criteria [5]: complete data; confirmed disease by laboratory diagnosis; normal cognition; familiar with the study and willing to participate. Exclusion criteria: mental disorder; drug allergy; malignant tumor. There was no statistical significance between the two groups ($P > 0.05$).

2.2 Method

Routine physical examination was carried out before operation, including ECG, blood routine, etc. to assess the surgical risk of patients; 3 days before operation, oral calcitriol, calcitriol; oral calcium carbonate tablets, 1.5g/day. All patients received heparin free hemodialysis one day before operation. Total parathyroidectomy was given to the reference group: general anesthesia was performed, and the neck was routinely sterilized. A transverse surgical incision was made in front of the neck, with a length of about 5cm. The thyroid was favorable, and parathyroid tissue was exposed and removed. At first, parathyroid tissue was cryopreserved, frozen section was used for pathological diagnosis, and the operation was finished after all parathyroids were confirmed.

The study group received total parathyroidectomy + autotransplantation: after the operation in the reference group, part of parathyroid tissue was excised and kept for use, and pathological examination was carried out after labeling. After diffuse hyperplasia was confirmed, 30mg parathyroid tissue was taken and cut into particles, the size of which was 1mm * 1mm * 1mm. Statistical software (spss20.0) was used to plant the anterior wall muscle on the side of the patient without internal artery fistula Analysis, the expression of measurement data is ±, the test method is t test; the expression of count data is%, the test method is x2 test, if the difference between groups is $p < 0.05$, there is statistical significance.

2.3 Observation Indicators

The blood phosphorus and calcium were measured at 1 day, 1 week and 3 months after operation. All patients were followed up for 12 months, and the recurrence of the patients was counted in detail.

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2.4 Statistical Methods

Statistical software (spss20.0) was used for analysis. The expression of measurement data was ±, the test method was t test; the expression of count data was%, the test method was x2 test. If the difference between groups was $p < 0.05$, there was statistical significance.

3. .Results

3.1 Comparison of Indexes between the Two Groups

One day, one week and three months after the operation, the blood phosphorus and calcium values were significantly improved, which was better than that before the operation, forming a statistical significance ($P < 0.05$). There was no significant difference between the two groups ($P > 0.05$). See Table 1.

Table 1 Comparison Of Multiple Indexes between the Two Groups (X ± s, Mmol / l)

Group	n	1 day after operation		1 weeks		3 months	
		Blood phosphorus value	Blood calcium value	Blood phosphorus value	Blood calcium value	Blood phosphorus value	Blood calcium value
Research Group	40	1.42±0.06	2.07±0.05	1.45±0.05	1.38±0.02	1.48±0.02	2.21±0.38
Reference group	40	1.41±0.04	2.09±0.07	1.46±0.06	1.37±0.03	1.51±0.08	2.19±0.42
T value	/	0.7833	0.8937	0.4755	0.7488	0.6433	0.7933
P value	/	0.4883	0.4844	0.6944	0.5844	0.5844	0.5874

3.2 Comparison of Recurrence Rate between the Two Groups

For the recurrence rate, there was no statistical significance between the two groups ($P > 0.05$). See Table 2.

Table 2 Comparison Of Recurrence Rates between the Two Groups (n /%)

Group	n	Recrudescence	Proportion
Research Group	40	2	5.00%
Reference group	40	3	7.50%
T value	/	0.2133	0.2133
P value	/	0.0644	0.0644

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4. Discussion

Currently, parathyroidectomy and vitamin D can be used in the treatment of uremic patients with hyperparathyroidism. According to Chinese and international guidelines for the diagnosis and treatment of mineral and bone metabolism abnormalities in chronic kidney diseases, [2], when uremic patients with hyperparathyroidism are not effective in drug treatment, parathyroidectomy is often carried out, which is composed of three types, such as total parathyroidectomy + autotransplantation, total parathyroidectomy, with low recurrence rate and less operation difficulty. Some scholars say that total parathyroidectomy + autotransplantation and total parathyroidectomy are often used in this kind of patients, which is regarded as an effective treatment for uremic patients with hyperparathyroidism [3]. However, due to the presence of uremic internal environment in the body, parathyroids left behind in transplantation and neck or ectopic parathyroids are easily proliferated, which shows that there is a certain recurrence rate after the operation. Research data show that [4], total parathyroidectomy + autotransplantation has a certain recurrence rate, similar to total parathyroidectomy, about 5% - 25%, can effectively improve clinical symptoms, the recurrence rate is low. When patients with uremia and hyperparathyroidism are treated with total parathyroidectomy and autotransplantation, the key point is to recognize and remove the thyroid completely during the operation, so as to effectively improve clinical symptoms and promote recovery [5].

The results of this study showed that 1 day, 1 week and 3 months after the operation, the blood phosphorus and calcium values were significantly improved, which was better than that before the operation, forming a statistical significance ($P < 0.05$). There was no significant difference between the two groups ($P > 0.05$). For the recurrence rate, there was no statistical significance between the two groups ($P > 0.05$).

To sum up: uremic patients with hyperparathyroidism are treated with total parathyroidectomy and autotransplantation, which can effectively improve the symptoms, promote the recovery of multiple indicators easily, with low recurrence rate, and can be used in clinical application.

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