Effect of department of orthopedics rehabilitation integrated mode on knee joint pain, function and quality of life in total knee arthroplasty.

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Abstract

Objective: To investigate the effect of the department of orthopedics rehabilitation integration model on knee joint pain, function and quality of life in total knee arthroplasty.

Methods: 120 cases of patients received total knee arthroplasty from May 2016 to May 2017 in our hospital were enrolled. Patients were randomly divided into the control group with 60 cases receiving the routine nursing care and observation group with 60 cases receiving rehabilitation integration mode department of orthopedics. Knee pain, function and improvement of quality of life were compared between two groups.

Results: Two groups of patients before nursing knee pain, knee function, poor quality of life with no significant difference (P>0.05), improve the indexes of different degree of care, but the observation group improved better than the control group, the difference was statistically significant (P<0.05).

Conclusion: The application of department of orthopedics rehabilitation integration model can significantly relieve the patients with knee pain in total hip replacement, and improve the function score to improve the quality of life, and can be used widely as the preferred nursing program.

Introduction

Total Knee Arthroplasty (TKA) is the most effective treatment for knee joint disease in clinic. In addition to eradicating late knee pain, it can also greatly improve the quality of life of patients, and has been widely used in abroad [1]. Department of orthopedics rehabilitation integration model is a perfect integration of work mode in department of orthopedics and department of rehabilitation and the formation of organic collection, in order to encourage patients to better, faster and more comprehensive rehabilitation, return to society as soon as possible [2]. The model used in total knee arthroplasty is able to achieve more ideal nursing effect, in view of this, the research around the department of orthopedics rehabilitation integration model used to analyse the effect of knee joint pain and improve function and quality of life in total knee arthroplasty, were as follows.

Data and Methods

General data

According to random number table method, 120 cases patients who received total knee arthroplasty in our hospital from May 2016 to May 2017 were randomly divided into the control group receiving routine nursing and the observation group receiving department of orthopedics rehabilitation integration mode, with 60 cases in each group. In the control group, there were 38 males and 22 females, aged from 38 to 65 y, with an average age of (48.55 ± 1.14 y old). Type of disease: 27 cases of osteoarthritis, 21 cases of rheumatoid arthritis, 12 cases of traumatic arthritis. The course of disease ranged from 6 months to 15 y, with an average duration of (8.24 ± 0.11 y). There were 40 males and 20 females in the observation group, aged from 36 to 65 y old, with an average age of (48.54 ± 1.11 y old). Type of disease: 26 cases of osteoarthritis, 20 cases of rheumatoid arthritis, and 14 cases of traumatic arthritis. The course of disease ranged from 5 months to 15 y, with an average duration of (8.20 ± 0.10 y). Inclusion criteria: (1) no serious cognitive impairment; (2) good clinical compliance, and actively cooperate with clinical workers. Exclusive criteria: (1) pregnant or lactating patients; (2) patients and (or) family members did not agree with the research program. The general data of the two groups were not significantly different and comparable.

Methods

The control group received routine nursing, including preoperative nursing (psychological guidance, routine examination, general preparation) and postoperative nursing (observation of vital signs, drainage tube nursing, posture nursing, pain nursing, complication nursing and rehabilitation exercise and discharge guidance) [3].

The department of orthopedics rehabilitation integration model was adopted in the observation group. The contents are as follows: (1) Orthopedics rehabilitation integration team was established by rehabilitation department and department of orthopedics doctors, which is responsible for the rehabilitation of patients. (2) The rehabilitation plan is formulated after comprehensive evaluation of the actual situation of patients, which is divided into four periods. 1) Initial stage: 3 to 4 d after the operation, the patient carried out passive exercises of the knee joint under the guidance of rehabilitation integration team members to prevent joint adhesion and muscle atrophy [4]. 2) Early stage: 2 weeks to 4 w after the operation, intensive knee joint activity training was carried out. The knee, knee flexion and ambulation were the main steps, and the purpose of this stage was to restore the original physiological function of the knee joint, strengthen the muscle strength of the leg, and enhance the patient's ability to control the knee joint [5]. 3) Mid-term: 4 w to 8 w after the operation, combined with the actual situation of patients with moderate up and down the stairs, squat, small steps running and other sports to enhance joint stability [6]. 4) Later period: 8 w to 24 w after the operation, the full daily activities were carried out to restore knee joint physiology and motor function [7].

Observation index

The degree of knee pain, knee function and quality of life were observed and measured before discharge. The knee pain was measured by visual analogue scale determination. A total of 0 point to 10 points, less than 3 were divided into mild pain, 4 points to 6 points as moderate pain, severe pain more than 7 cent. Knee function includes range of motion and Lysholm

score, the latter is measured by Lysholm scale, the total score is 0 to 100 points, the higher the score, the worse the function of knee joint. The specific division is as follow. The quality of life including physical function (10~30 points), the role of the body (4~8 points), bodily pain (2~12 points), general health (5~25 points) and vitality (4~24 points), social function (2~10 points), emotional role (3~6 points) mental health (3~6 points) was evaluated by the quality of the MOS item short from health survey SF-36. And the higher the score, the better the quality of life [8].

Statistical analysis

All the data in this study were processed by SPSS17.0 statistical software, and the measurement data were expressed by mean ± standard deviation ($\bar{x} \pm s$). The t-test was used to express the enumeration data (%), and the rank data were ranked by rank sum test. $P<0.05$ means a significant difference.

Results

Comparison of pain degree of knee joint between two groups

There was no significant difference in pain degree between the two groups before nursing. However, the proportion of mild pain in the observation group was higher than that in the control group after nursing, and the proportion of moderate to severe pain was lower than that of the control group, the difference was statistically significant ($P<0.05$), as shown in Table 1.

Table 1. Comparison of pain degree of knee joint between two groups.

Group	n	Before nursing			After the nursing		
		Mild pain	Moderate pain	Severe pain	Mild pain	Moderate pain	Severe pain
Control group	60	2 (3.33)	35 (58.33)	23 (38.33)	27 (45.00)	25 (41.67)	8 (13.33)
Observation group	60	1 (1.67)	34 (56.67)	25 (41.67)	44 (73.33)	13 (21.67)	3 (5.00)
χ^2		0.336	13.322				
P		0.765	0.004				

Comparison of knee function between the two groups

Before nursing, there was no significant difference in the range of motion and Lysholm score between the two groups, and the

improvement effect of the observation group was better than that of the control group after nursing, the difference was statistically significant ($P<0.05$), as depicted in Table 2.

Table 2. Comparison of knee function between the two groups ($\bar{x} \pm s$).

Group	The range of motion		Lysholm score	
	Before nursing	After nursing	Before nursing	After nursing
Control group (n=60)	111.37 ± 1.14	120.67 ± 1.33	88.79 ± 1.21	42.18 ± 1.32
Observation group (n=60)	111.55 ± 1.15	125.81 ± 1.31	88.78 ± 1.22	37.45 ± 1.35

t	1.384	8.484	1.001	8.551
P	0.897	0.027	0.999	0.014

Comparison of quality of life between the two groups

There was no significant difference in quality of life between the two groups before nursing, and the observation group was better than that of the control group after nursing, the difference was statistically significant (P<0.05), as shown in Table 3.

Table 3. Comparison of quality of life between the two groups (mean ± SD, point).

Group	Physical function		Somatic role		body pain		Total health		vitality		Social function		Emotional role		Mental health	
	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing
Control group (n=60)	14.25 ± 1.15	22.11 ± 1.11	5.11 ± 0.12	6.20 ± 0.22	5.64 ± 0.16	9.37 ± 0.23	10.88 ± 0.32	21.17 ± 1.03	12.88 ± 1.12	20.20 ± 1.10	4.69 ± 0.31	6.46 ± 0.14	3.808 ± 0.22	4.87 ± 0.13	2.31 ± 0.19	4.44 ± 0.16
Observation group (n=60)	14.30 ± 1.20	26.24 ± 1.16	5.10 ± 0.10	7.41 ± 0.20	5.65 ± 0.15	10.54 ± 0.21	10.90 ± 0.30	23.42 ± 1.02	12.90 ± 1.10	22.79 ± 1.11	4.70 ± 0.30	8.10 ± 0.15	3.81 ± 0.20	5.25 ± 0.15	2.30 ± 0.20	5.57 ± 0.13
t	1.005	8.338	1.001	8.18	1.001	8.18	1.002	8.192	1.002	8.22	1.001	8187	1.001	8.185	1.001	8.179
P	0.995	0.034	0.999	0.046	0.999	0.046	0.998	0.044	0.998	0.043	0.999	0.045	0.999	0.045	0.999	0.045

Discussion

Total knee arthroplasty is a kind of artificial joint replacement surgery [9] by removing the articular surface that cannot be repaired by the body by using artificial joint components instead of damaging the joint, correcting the force lines of the limbs, eliminating the pain of the limbs, maintaining the stability of the joint and recovering the function of the knee joint surgery. At present, this treatment program is widely used in the treatment of osteoarthritis, rheumatoid arthritis, traumatic arthritis, and has achieved an ideal therapeutic effect [10]. However, with the establishment of modern medical model, the importance of nursing intervention in clinical work is increasing day by day. Therefore, good nursing intervention for patients undergoing total knee arthroplasty has become the premise and guarantee for further improving the therapeutic effect [11]. At present, the development of department of orthopedics technology in our country is close to the world level, especially in the surgical field, and it is very close to the foreign countries. However, compared with the final therapeutic effect of patients there is a big gap between them. And the reason is that the department of orthopedics rehabilitation cannot be effectively carried out. Fortunately, modern department of orthopedics treatment concept has not only limited to operating methods of surgery, and drugs, but also aimed to the rehabilitation of motor function rehabilitation nursing so as to truly catch up with the world advanced level [12]. Department of orthopedics rehabilitation integration model is a kind of work mode which is widely used in developed countries. Through the combination of Department of orthopedics and rehabilitation, it can significantly improve the rehabilitation effect of patients and provide a strong guarantee for improving the prognosis [13]. Therefore, the application of this model in clinical work is the general trend.

In this study, two groups of patients treated with total knee arthroplasty had no significant difference between anterior knee pain, knee joint function (Range of motion and Lysholm score) and quality of life (Physical function, somatic role, body pain, general health, vitality, social function, emotional role, mental health) (P>0.05), while the indexes of care were improved to varying degrees. Moreover, the improvement effect of the observation group with department of orthopedics rehabilitation integration model was better than that of the control group under routine nursing, the differences were statistically significant (P<0.05). The results suggest that the use of department of orthopedics in total knee arthroplasty rehabilitation integration model achieved the desired results, not only significantly reduced the patient's knee pain and improved knee function, but also effectively improved the prognosis. All these results further confirm that it has important clinical application value. However, this study further pointed out that due to the late introduction of the department of orthopedics rehabilitation integration model in China, meanwhile, it did not form a normalized and standardized scheme in practical application. In addition, department of orthopedics is a highly specialized discipline, and the development of new technology and new materials is changing with each passing day. Hence, in addition to the basic knowledge of department of orthopedics, nurses in department of orthopedics still need to strengthen the learning of rehabilitation medicine knowledge [14]. Thereby, nurses in department of orthopedics should firmly establish the concept of rehabilitation in the clinical work, and actively carry out

rehabilitation nursing work around patients so as to truly and comprehensively catch up with the world's advanced level, harvesting the ideal application effect [15].

In conclusion, in the total knee arthroplasty, the application of the department of orthopedics rehabilitation integrated model can significantly alleviate the pain of patients with knee joint, increase the function score and improve the quality of life, can be used as the preferred nursing program.

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