

Arthroscopic Debridement Combined with Rehabilitation Training in the Treatment of Knee Osteoarthritis

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Objective: The clinical effect of arthroscopic debridement combined with rehabilitation training in the treatment of knee arthritis was studied and analyzed. **Methods:** A total of 90 patients with knee osteoarthritis treated in our hospital from August 2017 to August 2018 were selected as the research objects. All patients were divided into the observation group and the control group by using the random number method. The control group was treated by arthroscopic cleaning operation, and the observation group was treated by combined rehabilitation training on the basis of the treatment in the control group. The total effective rate and simple McGill pain of the two groups were compared Score and lyshoim score. **Result:** The total effective rate of the observation group was significantly higher than that of the control group ($P < 0.05$), the difference was statistically significant; after treatment, the simple McGill pain score of the observation group was significantly lower than that of the control group ($P < 0.05$), the difference was statistically significant, the lyshoim score of the observation group was significantly better than that of the control group ($P < 0.05$), the difference was statistically significant. **Conclusion:** In the treatment of knee osteoarthritis, arthroscopic debridement combined with rehabilitation training has a significant effect, which can significantly reduce the pain and improve the prognosis of patients. It is worth popularizing in clinical treatment.

Key words: Arthroscopic debridement; Rehabilitation training; Knee osteoarthritis

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Osteoarthritis is also known as proliferative arthritis, osteoarthritis, and deformable osteoarthritis. It is caused by bone loss, degenerative change, subchondral osteosclerosis and osteophyte at the joint edge in synovium joint. It belongs to the category of chronic joint diseases. The common disease in systemic osteoarthritis is knee osteoarthritis, which often occurs in the middle-aged and the elderly In the population, the quality of life of the patients is seriously reduced due to the relatively strong pain^{1,2}. According to the relevant clinical research, the factors of osteoarthritis include trauma, joint instability,

anatomical abnormality, intra-articular disorder and chronic strain, but the specific mechanism of the disease has not been clear³. In this study, the clinical effect of arthroscopic debridement combined with rehabilitation training in the treatment of knee osteoarthritis was studied and analyzed.

Materials and methods

General information

A total of 90 patients with knee osteoarthritis treated in our hospital from August 2017 to August 2018 were selected as research objects. All patients

were divided into observation group and control group by using random number method. 45 patients in the observation group, 20 males and 25 females, aged (41-75), average age (55.36 ± 10.55), course (1-15) d, average course (5.2 ± 1.4) d, 45 males in the control group, 21 males There were 24 female patients, age (42-75), mean age (55.41 ± 10.56), course of disease (2-15) days, mean course of disease (5.3 ± 1.5) days. The difference between the two groups was slight ($P > 0.05$), no statistical significance and comparability.

Diagnostic criteria of knee osteoarthritis

(1) There is bounce when the joint moves; (2) There is pain in the knee joint most of the time in one month; (3) The stiffness of the knee joint is less than 30 minutes; (4) There is no bounce when the bone is fat; (5) There is bounce when the knee joint is hypertrophic, the patient has the first one, and can be diagnosed as osteoarthritis when accompanied by 2, 3, 4 or 2, 3, 5.

Inclusion exclusion criteria

Inclusion criteria: (1) All patients have no mental diseases, and medical staff can communicate with them normally; (2) Patients have no diseases such as malignant tumors; (3) All patients and their families agree to this study and sign a consent form.

Exclusion criteria: (1) Patients under 38 years old; (2) Patients with systemic or local infection focus; (3) Patients with severe joint adhesion and stiffness; (4) Patients with narrow or disappeared joint space; (5) Patients with coagulation mechanism disorders; (6) Patients with different opinions and this study.

Method

The patients in the control group were treated with arthroscopic cleaning, supine position, knee extension, continuous epidural anesthesia or local anesthesia. The anterolateral, anterolateral and anterolateral approaches were used. The incision was longitudinal and the length was about 0.5cm. The arthroscopic puncture point was selected through the incision, and the normal saline was injected into the joint cavity to completely fill the

joint cavity. The incision was followed by the puncture sleeve Put the 30° arthroscope into the tube, and observe the superior patellar capsule, patellar joint, intercondylar fossa, internal and external space and recess in turn. During the operation, according to the observation of arthroscope, clear the pathological tissue, and observe whether the patellofemoral joint movement is normal. When the internal and external holding bands contracture, loosen them. When the joint activity is affected by the fat pad under the patella, the medial side When the synovial fold is impacted by incarceration, it should be partially removed or loosened; for the exposed sclerotic bone area, it should be drilled for decompression; for the meniscus edge, it should be repaired for degeneration and damage; for the patients with villus hypertrophy and synovitis, it should be partially removed; for the anterior cruciate ligament, it should be loosened due to severe wear, it should use the ion condensation knife The patients in the observation group were treated with rehabilitation training on the basis of the treatment in the control group. The specific methods were as follows: (1) On the first day after the operation, the patients were given isometric training to the knee After fixation, assist walking, quadriceps training, straight pushing and raising, twice a day, and move between the bed and chair on the premise of straightening the knee, twice a day, and at the same time carry out continuous passive exercise muscle training. Within three days after the operation, carry out active or passive activities on the knee joint, and bend the knee below 40 degrees, increasing 5 degrees every day; (2) Carry out passive joint activities from the second day to the seventh day after the operation Movement training, such as knee flexion, foot wall sliding, knee extension and foot sliding under the ground; (3) After 1-2 weeks of operation, the patella can be moved to prevent contracture, the patient can actively carry out hip abduction and adduction, the knee joint can carry out active and passive activities, and the nursing staff can guide the patient to carry out weight-bearing, skateboarding and knee pressing training; (4) In the second to fourth weeks

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after operation, in addition to the above training, the number of activities is increased. As the flexion and extension of the knee joint, the range of motion is increased to the painless range. According to the recovery of the knee joint of different patients, micro squatting and resistance training of the knee joint are carried out to increase the strength and sense of balance of the lower limbs; (5) After the fourth week of operation, strengthen the movement of the knee joint of the patients with appropriate mechanical energy jogging, and gradually restore the normal activities of the patients.

Observation indicators

The total effective rate, simple McGill pain score and lyshoim score of the two groups were compared. The pain and tenderness of the patients disappeared, and the knee joint could be bent and extended normally, indicating that it was cured; the pain and tenderness of the patients were significantly improved, and most of the knee joint functions were restored, indicating that it was improved; the pain and tenderness of the patients were not improved, and the knee joint functions were not improved, indicating no effect, total effective = cure + improvement.

Statistical analysis

The data of this study was included in spss22.0 software analysis, and the measurement data was expressed by ($\bar{x} \pm s$), t test; the count data was expressed by (%), chi square test, $P < 0.05$, with statistical significance.

RESULTS

Comparison of the total effective rate of the two groups

40 (88.89) cases were cured, 5 (11.11) cases were improved, 0 (0.00) cases were ineffective, 45 (100.00) cases were total effective in the observation group; 22 (48.89) cases were cured, 10 (22.22) cases were improved, 13 (28.89) cases were ineffective, 32 (71.11) cases were total effective in the control group, the total effective rate in the observation group was significantly higher than

that in the control group ($P < 0.05$), the difference was statistically significant, see Table 1.

Group	n	Cure	To become better	Invalid	Total effective
Observation group	4	40	5 (11.11)	0 (0.00)	45
	5	(88.89)			(100.00)
Control group	4	22	10 (22.22)	13	32
	5	(48.89)		(28.89)	(71.11)
x²	-	16.797	2.000	15.195	15.195
P	-	0.000	0.157	0.000	0.000

Comparison of McGill pain score and lyshoim score before and after treatment between the two groups

Before treatment, the simple McGill pain score and lyshoim score of the observation group were (6.11 ± 1.28) and (50.41 ± 4.09) respectively, and those of the control group were (6.10 ± 1.29) and (50.55 ± 4.13) respectively. There was no significant difference between the two groups ($P > 0.05$). After treatment, the simple McGill pain score of the observation group was (2.09 ± 1.02) and those of the control group were (5.51 ± 1.07). The difference was statistically significant ($P < 0.05$). Lyshoim score of the observation group was (89.63 ± 5.14) and that of the control group was (55.67 ± 4.75). The difference was statistically significant ($P < 0.05$), as shown in Table 2.

Group	n	Simple McGill pain score		Lyshoim score	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	45	6.11±1.28	2.09±1.02	50.41±4.09	89.63±5.14
Control group	45	6.10±1.29	5.51±1.07	50.55±4.13	55.67±4.75
t	-	0.037	15.520	0.162	32.550
P	-	0.971	0.000	0.872	0.000

DISCUSSION

Knee osteoarthritis is a disease involving bone, supporting structure near the joint and synovium. The degeneration of knee joint cartilage is the

pathological basis of knee osteoarthritis, because the cartilage at the joints of human body has weak ability to repair itself. At the same time, with the passage of time, the degree of cartilage damage will continue to increase, resulting in a series of diseases in the joints, which appear in different age periods of patients, such as meniscus rupture, joint space narrowing, chronic synovitis, joint edge hyperplasia, joint deformity and joint free body, when the above lesions gradually appear, the treatment difficulty of knee arthritis gradually increases^{4,5}. At present, the clinical treatment of knee osteoarthritis is studied and analyzed in many aspects. There are certain treatment methods for different periods of disease, but it will take a long time to fundamentally cure the patients. The current treatment methods are mainly to relieve or alleviate the clinical symptoms of patients, prevent the disease from developing to malignancy, delay the disease, increase the stability of patients' joints, and increase the patients' joint activity Dynamic range, etc.^{6,7}.

In arthroscopic cleaning operation, a large number of normal salines is used for washing, prostaglandin, interleukin and other enzymes are removed, meniscus and articular cartilage surface are trimmed, osteophyte, periosteal plica and free body are cleaned, which has significant therapeutic effect. At the same time, this kind of operation has the advantages of small wound, less physiological damage to patients and faster recovery after operation, It can effectively delay the progress of the disease, reduce the pain of the patients, and significantly improve the joint function. However, in the late stage of knee osteoarthritis, because of the acute varus of the knee joint and the large area of cartilage defect at the joint, the treatment effect is often not ideal^{8,9}. There are related clinical studies that show that poor treatment effect is often related to patients without rehabilitation training. Because patients with knee osteoarthritis have decreased joint stability and muscle strength, patients are very prone to injury when carrying weight on the knee joint. It is important to prevent muscle atrophy and strengthen the exercise of quadriceps femoris in the protection of knee joint

function Action^{10,11}. Scientific and systematic rehabilitation training after surgery can effectively increase muscle strength, avoid muscle atrophy, increase the balance of soft tissue near the knee joint, and improve stability. Early knee flexion training can significantly improve the activity of the joint, effectively prevent joint stiffness and adhesion, and accelerate the recovery of the knee joint^{12,13}. During the operation, because of the cleaning and planing of the uneven cartilage surface, osteophyte and increased synovium, there will be bleeding in this process. For example, the patient's early knee flexion exercise will lead to blood accumulation in the joint cavity, resulting in stiffness and adhesion of the joint. After the joint synovium is traumatized, it will take a certain time for self-repair, or early weight-bearing training will increase the pass Because of the synovitis reaction in the middle of the ganglion, weight-bearing training needs to be carried out 1-2 weeks after the operation^{14,15}. In this study, the total effective rate of patients in the observation group who used arthroscopic cleaning and rehabilitation training was significantly higher than that in the control group ($P < 0.05$); after treatment, the simple McGill pain score was significantly lower than that in the control group ($P < 0.05$), lyshoim score was significantly higher than that in the control group ($P < 0.05$), and the difference was statistically significant. It indicates that in the knee joint recovery, the patients' systematic rehabilitation training plays a very important role in increasing muscle strength, joint balance, increasing the range of joint activity, preventing the development of the disease and shortening the recovery time of the patients. At the same time, the patients have lower pain and better quality of life.

CONCLUSION

To sum up, in the treatment of knee osteoarthritis, arthroscopic debridement combined with rehabilitation training has a significant effect, significantly reducing the pain of patients, improving the prognosis of patients, which is worth popularizing in clinical treatment.

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