

The Value of Internal Fixation Through Surgical Dislocation of Hip Joint in the Treatment of Pipkin Fracture

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Abstract: **Objective:** To observe the effect of clinical treatment of patients with Pipkin fracture according to surgical dislocation of hip joint internal fixation. **Methods:** According to the form of comparative treatment, 50 patients with Pipkin fracture admitted to our hospital from March 2011 to August 2022 were selected as the object, and randomly divided into control group (25 cases, treated with conventional scheme) and observation group (25 cases, treated with surgical dislocation of hip joint internal fixation). Analyze the recovery of the two groups of patients. **Results:** The observation group has advantages in comparing the amount of intraoperative bleeding, operation time, fracture healing time and hospitalization time between the two groups ($P < 0.05$). Compared with the Harris score of the hip joint after operation between the two groups, there is no difference before operation, but the observation group has advantages after operation ($P < 0.05$). **Conclusion:** The treatment of patients with Pipkin fracture according to the internal fixation operation of surgical dislocation of the hip joint can effectively improve the surgical effect of this part of patients, and can promote the recovery of joint function of patients as soon as possible after operation.

Keywords: Pipkin Fracture; Internal Fixation Via Surgical Dislocation of Hip Joint; Rehabilitation

Introduction

Pipkin fracture is the most common type of fracture in clinical practice. Femoral head fracture combined with dislocation fracture of the hip joint is the main feature of this part of patients, and there are certain difficulties in treatment. Moreover, this type of fracture will increase the probability of patients with avascular necrosis of the femoral head, and also increase the incidence of complications such as osteoarthritis. In the process of surgical treatment for this part of patients, it is more necessary to select the best surgical scheme to promote the rapid recovery of the function of the patient's hip joint^[1-2]. According to the internal fixation of surgical dislocation of the hip joint, the treatment of this part of patients will be rapidly applied in clinical practice. This study focuses on the analysis of the specific value of this surgical scheme.

1. Data and methods

1.1 General information

According to the form of comparative treatment, 50 patients with Pipkin fracture admitted to our hospital from March 2011 to August 2022 were selected as the subjects, and randomly divided into the control group (25 cases, treated with conventional scheme) and the observation group (25 cases, treated with internal fixation of surgical dislocation of hip joint). In terms of patient composition, there were 16 males and 9 females in the control group, aged between 43 and 78, with an average of (62.34 ± 1.74) . There were 15 males and 10 females in the observation group, aged between 42 and 77, with an average of (61.02 ± 1.88) . Compare the basic data of the two groups, $P > 0.05$.

1.2 Method

The patients in the control group were treated according to the conventional open reduction and internal fixation operation. The surgical incision was selected above the fracture site of the patient, and the intraoperative anesthesia was intravenous general anesthesia. The subcutaneous tissue was separated layer by layer, and the tissue fracture site was fully exposed. Then the fracture site was cleaned, the joint capsule was repaired, and after the reduction, the absorbable screw was selected for internal fixation, and the C-arm machine was used to evaluate the accuracy of the reduction. During the surgical treatment, the observation group was treated according to the internal fixation of the surgical dislocation of the hip joint. The intraoperative body position was selected as the healthy side lying position, the surgical site was routinely disinfected, and the subcutaneous tissue was cut layer by layer according to the Ganz approach, so that the fracture end was preserved, and the gluteus minor muscle and the greater trochanter were treated. Separation of fulcrum, etc. to promote joint capsule filling. Divide the exposure and perform "T" at the joint capsule Type B incision is used to observe the fracture displacement of the patient. Combined with the specific characteristics of the fracture site of the patient, operations such as adduction and external rotation and traction are carried out, and targeted treatment is carried out for the joint cavity and acetabulum of the patient. If the patient has acetabulum fracture, it is necessary to fix the femoral head fracture. Accurately clean up the blood stasis and residual soft tissue at the fracture site. Absorbable screws are selected to fix the femoral head, and the acetabulum is treated after ensuring satisfactory reduction and fixation. The surgical cavity is cleaned with physiological saline, the joint capsule is sutured, the large trochanter is fixed with cortical bone screws, and the surgical opening is sutured according to conventional techniques. The two groups of patients are subject to conventional negative pressure drainage after operation. And near anti-infection treatment.

1.3 Observation indicators

During the study, the intraoperative bleeding volume, operation time, fracture healing time and hospitalization time of the two groups need to be counted, and the Harris score of the hip joint of the patients during the operation should be counted, and the evaluation should be made before the operation, 1 week, 2 weeks and 3 weeks after the operation.

1.4 Statistical methods

In this study, all data were processed according to SPSS20.0, and the measurement data were expressed according to the mean $\pm$ standard deviation. T test showed that $P < 0.05$ was statistically significant.

2. Results

2.1 Comparison of surgical indexes between the two groups

Compared with the amount of intraoperative bleeding, operation time, fracture healing time and hospitalization time of the two groups, the observation group had advantages ($P < 0.05$), as shown in Table 1 below.

Table 1 Comparison of surgical indexes between the two groups ($\bar{x} \pm s$)

Groups	Number of cases	Intraoperative bleeding volume (ml)	Operation time(min)	Fracture healing time (week)	Hospital stay (d)
Observation group	30	152.54 $\pm$ 23.34	61.62 $\pm$ 4.24	11.12 $\pm$ 1.14	12.32 $\pm$ 2.11
Control group	30	172.56 $\pm$ 33.22	72.21 $\pm$ 5.13	13.51 $\pm$ 1.13	16.12 $\pm$ 2.12
<i>t</i>	-	13.425	15.2425	13.141	10.725
P	-	0.001	0.001	0.001	0.001

2.2 Comparison of hip joint function scores between the two groups

Comparing the Harris score of the hip joint between the two groups after operation, there was no difference before operation, but the observation group had advantages after operation ($P<0.05$), as shown in Table 2 below.

Table 2 Comparison of hip joint function scores between the two groups ($\bar{x} \pm s$)

Groups	Number of cases	Preoperative	1 week after operation	2 weeks after operation	3 weeks after operation
Observation group	30	55.05±1.34	65.02±1.63	76.12±2.11	88.42±1.86
Control group	30	55.56±1.22	59.21±2.01	64.25±2.43	73.24±2.14
<i>t</i>	-	1.242	11.252	13.425	14.725
P	-	0.801	0.001	0.001	0.001

3. Discussion

Pipkin fracture has always maintained a high incidence in clinical practice, and under the influence of frequent traffic accidents and other factors, the number of patients in this part has a significant trend of increase. It is a relatively difficult fracture type, and it takes a long time for patients to recover. In the process of conventional open reduction and internal fixation surgery, the purpose of treatment and reduction of the fracture end is achieved by fully exposing the fracture site and carrying out operations such as reduction [3-4]. However, the trauma caused to patients during the surgery is large, and the recovery time after surgery is long.

The internal fixation of this part of patients according to the surgical dislocation of the hip joint approach has been rapidly implemented in clinical practice. Under the effect of this surgical scheme, the patient's femoral head and acetabular fracture can be more intuitively displayed. In addition, the summary of the surgical approach process will cause less loss to the deep branch of the medial femoral circumflex artery of the patient, and the treatment in accordance with the stepped osteotomy technology during the operation can effectively ensure the anatomical reduction position, increase the contact area, and more conducive to the fixation of the fracture site and promote the healing [5]. In the process of internal fixation with screws, embedding the screw head into the medial side of the cartilage of the femoral head can avoid the acetabular cartilage injury of patients in the process of postoperative activities, reduce the incidence of iatrogenic arthritis and other complications, and facilitate the recovery of hip joint function. In this study, the observation group was treated according to the surgical dislocation of the hip joint approach internal fixation. Compared with conventional surgery, the surgical treatment can reduce the trauma caused to patients during the operation, shorten the patient's hospitalization time, accelerate the fracture healing speed, and promote the rapid improvement of hip joint function to ensure the comprehensive effect of surgical treatment.

In conclusion, the treatment of patients with Pipkin fracture can be given priority to the internal fixation of surgical dislocation of hip joint.

References

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