

Nursing Analysis of One Case with Dislocation and Urinary Incontinence after Hip Arthroplasty

Qiuju Li, Guofang Yang

Chengdu Pidu District Hospital of TCM, Chengdu 611730, China

Abstract

Nursing care for patients with right femoral neck fracture after hip arthroplasty with dislocation complications, urinary incontinence and secondary pressure injury of left sacral tail; Due to the placement of hip abduction brace after dislocation after hip replacement, fear of re-dislocation and correct guidance of turning over increase the probability of pressure injury; Age, surgery and mental stress, urinary incontinence; During the nursing process, postural guidance, bladder function exercise and skin care were carried out. Secondary pressure injuries were treated with a burner and wound exposure therapy. After careful treatment, rehabilitation training and nursing, the stress injury was improved, the symptoms of urinary incontinence were improved, and the ambulator was used to help get out of bed.

Keywords

Artificial Hip Replacement; Dislocation; Urinary Incontinence; Pressure Injury.

1. Introduction

With the increase of age, the bone strength at the junction of femoral head and neck in elderly patients with osteoporosis decreases significantly, which is prone to femoral neck fracture. Elderly non displaced femoral neck fractures should be treated surgically, and conservative treatment has a high risk of secondary displacement; Displaced fractures should be treated as soon as possible. The artificial hip joint is divided into femoral prosthesis and acetabular prosthesis, and the operation is divided into simple artificial femoral head and total hip replacement[1]. Dislocation occurs in 0.2% - 6.2% of patients after total hip arthroplasty in China[2], Closed reduction can be adopted for early dislocation within 1 month after operation, and open reduction under anesthesia is required for late dislocation or difficult reduction[3], In the later stage, the probability of stress injury increases because of the fear of re dislocation and pain. Urinary incontinence is a common urinary disease. When abdominal pressure increases, it will flow out of urine involuntarily. Stress urinary incontinence is more common in middle-aged and elderly women, resulting in local skin sensitivity and incontinence dermatitis[4].After dislocation, the position of artificial joint was improper. Open reduction was performed, hip abduction brace was placed after operation, and the nursing of Secondary Pressure Injury with Urinary Incontinence Was Given.

2. Clinical Data

2.1 Case Data

The patient, Tong XX, female, aged 83, was admitted to the hospital on June 23, 2020 due to (falling) right hip pain with limited activity for 1 hour. Physical examination: clear consciousness, no tenderness in the pelvis, weak positive compression, right lower limb shortening and publicity deformity, right lower limb called healthy side shortening of about 3cm, right hip pain with limited activity. Diagnosis: right femoral neck under head fracture, moderate Osteoporosis Syndrome, double

hip CT: right femoral neck fracture, obvious displacement occurs at the broken end of the fracture (as shown in Fig. 1). Other examinations were further improved after admission, and there were no surgical contraindications. On July 3, 2020, "right artificial femoral head replacement + synovectomy" was performed.



Fig. 1 Schematic diagram of right femoral fracture

2.2 Operation Mode

Case features: fracture of the lower part of the right femoral neck, a small amount of white granulation growth can be seen in the right femoral head, osteosclerosis and degeneration of the right greater trochanter, hyperplasia of joint capsule, and intraoperative blood loss of about 300ml.

The operation process includes (including the situation and treatment during the operation):

- 1) After the anesthesia is stable, take the left lying position, fix the front and rear baffles, seal the perineum with gauze film, disinfect the right hip and right lower limb, routine orthopedic disinfection, spread towels, and paste sterile film.
- 2) The posterolateral incision of the right hip was about 15cm long. The skin, subcutaneous and fascia lata were cut to blunt separate the gluteus maximus muscle. Slight flexion and internal rotation of the right hip, pull the retractor backward, and expose the posterior side, medial side and lesser trochanter of the upper femur.
- 3) Pull the anterior upper part of the middle gluteal muscle behind the femur with the skin retractor, cut off the stop point of the external rotation muscle group, cut off the posterior joint capsule, relax and further flex, rotate and retract the right hip, and expose the broken end of the femoral neck. The findings during the operation are as follows.
- 4) Measure the distance from the apex of greater trochanter to 8cm of proximal femur, mark the osteotomy line, mark the muscle stop point of proximal femur with suture respectively, and then swing saw osteotomy. After osteotomy, the femoral head was removed.
- 5) The femoral head, neck and stem were allocated in group A. the anteversion angle of femoral neck was tested and marked repeatedly.
- 6) Use No. 7, 8, 9, 10, 11, 12 and 13 femoral files to punch into the reamed bone one by one, and file it to a little cortical bone in the groove at the edge of the reamed cavity. Then rinse and suck it up.
- 7) The standard neck and femoral head test molds shall be placed well. The joint reduction shall be carried out after the length of the affected limb is roughly equal to that of the opposite side. The right hip shall be checked for good activity and stability, and the joint shall be flushed with pulse again.
- 8) Put the medullary cavity plug into the medullary cavity, mix the bone cement, and insert the prosthesis stem at the mark of the stem until the bone cement is fixed and formed. Use No. 5 cherish binding line to reconstruct the muscle stop one by one on the large and small nodules on the handle, prepare the line and do not tighten it.

9) Rinse again, place the prosthetic neck and head to the basic equal length of both lower limbs, test without error, tighten and tie the aixi line one by one.

10) The wound surface shall be dried with square yarn, washed after hemostasis is completed, checked the gauze and instruments, retained the plasma drainage tube, and repaired with external rotator muscle and absorbable suture joint capsule, fascia lata and subcutaneous superficial fascia. The skin shall be sutured under the condition of neat alignment, and covered with sterile gauze and application.

11) Move the patient to the cart, fix the T-shaped pillow between the legs, and the dorsalis pedis artery can be touched. The operation was successful and returned to the ward safely after operation.

2.3 Nursing Problems

The patient had severe anemia and hypoproteinemia after operation. On July 20, 2020, the patient complained that the left lying position was the conscious "joint dislocation feeling" of the right lower limb, the knees crossed, and the ladder pillow was not clamped. Physical examination: the right lower limb was shortened, the hip and knee flexion were mild, and the right lower limb was swollen. Pelvic Dr showed that the right hip joint was dislocated (as shown in Fig. 2). The "closed reduction of right hip dislocation" was performed in the emergency. After the failure of reduction, the "open reduction of right hip dislocation" was transferred to ICU for treatment. On July 25, 2020, he was transferred to our department. Physical examination: clear consciousness, poor appetite, light respiratory sound of both lungs, hip abduction brace of lower limbs, secondary pressure sore of left sacrococcygeal, The lower limbs were fixed with ladder pillow[5] and braked with t-shoes. The right lower limb was swollen and the dressing on the right hip was cleaned and fixed. The right lower limb feels and moves well.



Fig. 2 Schematic diagram of right hip dislocation

After treatment and nursing, the second stage pressure sore on the left side improved, granulation tissue grew and scabbed, and there was no other pressure injury; After bladder function exercise and diet guidance, the patient can control defecation, avoid incontinence dermatitis caused by urinary incontinence, and protect the integrity of the skin. Guide the functional exercise of the affected limb, assist in the use of walking aids, and be able to get out of bed and move in the ward by themselves. Two months after operation, the CT examination showed that the wound of the affected limb recovered well without redness and swelling, local exudation, and the artificial femoral head and acetabulum ran in well and were in the functional position, as shown in Fig. 3.



Fig. 3 postoperative recovery

3. Nursing

3.1 Basic Nursing

After the patient transferred from IUC, lay the air cushion bed, use two turn over pillows, and fix them vertically with adhesive tape to keep the body at the same level all the time, so as to prevent the patient's skin from being compressed for a long time. Cotton pad is provided under the brace for protection, and sanitary cotton with strong adsorption is placed on the hip to prevent incontinence dermatitis caused by being soaked in urine; Patients wear baby bottoms, which are easy to clean their urine and keep them loose and breathable. Observe the wound and dressing of the affected limb in each shift. If there is any discomfort such as exudation, redness and swelling, remind the doctor to check, disinfect and replace in time to prevent secondary infection of the wound. It is very important to open windows for ventilation and regular disinfection in the ward. The room temperature and humidity should be 22-24°C and 50%-60% respectively. Assist the caregiver to take a bath on the bed twice a day to keep the clothes and bedding clean and dry.

3.2 Diet Nursing

Guide the eating of digestible food, which is required to replenish qi and blood, rich in high protein and an appropriate amount of cellulose. Flatulent food and spicy and irritating food are not conducive to recovery. According to the doctor's advice, iron the abdomen with fennel twice a day[6], take the navel as the center, and massage the abdomen in a clockwise circle.

3.3 Rehabilitation Function Training

On the day of operation, go to the occipital and supine position, keep the abduction of hip joint on the affected side in the neutral position, put the ladder pillow between the two legs, raise the affected limb and reduce edema;

Under the guidance of patients, quadriceps femoris static contraction and other activities should be arranged 6 hours after operation;

On the second day after operation, raise the head of the bed for 30 ° rest and guide the patients to do ankle pump training and other exercises; Supplemented by isometric contraction exercises of biceps femoris and quadriceps femoris; The range of passive motion of hip and knee joint shall not exceed 25 °, which should be tolerated by patients, and the number of motion shall be increased step by step[7];

On the 3rd day after operation, raise the head of the bed by 60 °, guide the patients to do active training, assist in straight leg lifting training, strengthen ankle dorsiflexion and quadriceps femoris training; Then gradually carry out joint activity training, and gradually increase the training intensity of hip extension and flexion and flexion angle.

Pay attention to the hip flexion less than 90 ° and abduction less than 30 ° when sitting up. When turning over, lift the hip horizontally without pulling. The action is light, accurate and stable to

prevent re dislocation of the hip; Hip abduction brace, cotton pad protection under limb brace, t-shoe braking, and close observation of limb circulation, sensation, movement and edema of right lower limb; Without hip abduction brace, guide the caregiver to help them with passive training and promote blood reflux; Pay attention to the flexion of the left lower limb when turning over the axis, and put a soft pillow between the legs to straighten the right upper limb and form a horizontal line with the body, so as to keep the patient in a good limb position; Cross legging and adduction should not be made within 4 weeks after hip arthroplasty, and the squat angle should not exceed 90 degrees. After 4 weeks, the wound healed well, and guided the active and passive activities of lower limbs in the sitting position on the bed, from standing beside the bed to walking in small steps, and then gradually transition to the activities in the ward using walking aids.

3.4 Bladder function Training

Intermittent micturition training refers to that in each micturition process, the patient should focus on restraining urination intention and relaxing bladder before reaching the sensory threshold, Then urinate slowly, and gradually prolong the interval of micturition[8].

Anal lifting training: Patients can take different postures every day, train in the morning, middle and evening, cooperate with respiratory exercise, and train more than 40 times a day[9]. When taking the sitting position, relax your whole body and sit on the chair, differential your knees, lean your upper body slightly forward, and put your hands on your knees naturally. When you inhale deeply, you need to feel the anus lifting up. You need to shrink the urethral orifice and anus, then hold your breath for 5 seconds and repeat 40 times. When taking the supine position, separate the knees 45°, feel the urethral orifice and anus tightly closed for 5-10S, then relax for 10s and repeat 40 times. When taking the standing position, differentiate the legs, tighten the urethral orifice and anus for 10s, then relax and repeat 40 times.

Urine habit training: 30 minutes before meals, urinate in the morning or before going to bed, inform family members to use female urine receiver, encourage patients to urinate regularly, and prevent incontinence dermatitis caused by urine soaking cotton pad and sacrococcygeal skin.

Plantar massage: Acupoint massage in plantar reflex area[10], According to the patient's tolerance, the patient will press according to the degree that the patient feels acid swelling and slight pain and can bear it, inform the purpose and precautions, and guide the escort to massage in each reflex area for 1-2 minutes.

3.5 Skin Care

Broken blisters can be seen on the left hip, and the second stage pressure sore should be exposed according to the doctor's advice. Iodophor stock solution should be disinfected twice a day to quickly kill local bacteria and other pathogenic microorganisms of the wound, promote the absorption of wound exudation and reduce local exudation. Combined with infrared irradiation twice a day, it can promote the growth of granulation tissue and promote wound healing; The wound with open reduction shall be protected with dressing. In view of local redness, swelling and exudation, closely observe the dressing and the surrounding skin, ask the patient if he has the feeling of swelling and numbness, and remind the doctor to change dressing and disinfect in time to prevent secondary infection of the wound.

4. Case Discussion

According to the dislocation occurred in this case, it can be seen from the operation records that the lateral incision was adopted in this operation. According to the anatomical position of the incision, the patients with osteoporosis recovered slowly due to the cutting off of the stop point of the external rotator muscle group. In addition, due to the age of the patients, the muscles around the hip were loose and the characteristics of bone hyperplasia, which could not effectively play the role of hip abduction contraction against adduction, Because the attachment point of the gluteus medius muscle was not effectively fixed, in addition, the postoperative posture guidance was not in place, and the importance

of maintaining the abduction neutral position to maintain the stability of the position of the artificial joint was not informed, so dislocation occurred.

After the reduction operation, the patient was transferred to ICU, dislocation and pressure injury occurred: the skin lost its normal function, resulting in tissue damage. The reason is that the hip abduction brace pressed the local tissue for a long time, resulting in blood circulation disorder and tissue lack of nutrition; After the operation after the failure of manual reduction, the patient uses the hip abduction brace to brake, which can not turn over effectively, loosen the compressed part, and fear of causing dislocation again; The patient had hypoproteinemia and postoperative urinary incontinence, which led to the sensitive and fragile skin of perineum and sacrococcygeal, resulting in stress injury; In the process of future nursing, we should guide the correct posture, learn how to carry out functional exercise under the hip abduction tool in video, ensure sufficient nutrition, keep the bed unit clean and flat, exercise the bladder function, improve urinary incontinence, and then reduce the occurrence of stress injury.

References

- [1] Yu Changlong. Orthopaedic rehabilitation [M]. Beijing: People's Health Publishing House, 2010:682.
- [2] Han Yu.jilin Factors affecting the stability after total hip arthroplasty and analysis of typical clinical cases[D]. Jilin University,2015.
- [3] Zhou Chuanmin, Jin Xin, Guo Yanping, et al Nursing countermeasures in rehabilitation period after artificial femoral head replacement[J]. Diet Health, 2017, 4(6), p.146.
- [4] Zhang Qin Nursing experience of stress urinary incontinence [J] Health Guide: Medical Edition, 2015, 20 (9), p. 1.
- [5] Wang Wei Application of self-made trapezoidal pillow in patients after hip arthroplasty[J]. Yiyao Qianyan, 2018, 8(30), p.326-327.
- [6] Tang Xiaochen Clinical efficacy of fennel ironing in preventing constipation in patients after ACDF[J]. Diet Health,2021(38), p.97-98.
- [7] Zhou Jin,Xu Da-xiong. The efficacy of orthopedic rehabilitation training in the prevention of deep vein thrombosis after artificial hip replacement[J]. Practical Journal of Clinical Medicine, 2020, 17(2), p.4.
- [8] Chen Xing Clinical observation of early bladder function training on patients with urinary incontinence after stroke[J]. The Journal of Medical Theory and Practice, 2016, 29(21), p.2.
- [9] Liu Xine, Huang Huiyu, Deng Fangyi. Effect of timing of levator ani muscle training on the incidence of urinary incontinence after transurethral resection of prostate[J]. Capital Medicine, 2021, 28(15), p.2.
- [10] Bi Keping, Chi Xianglin, Song Chunyu. Therapeutic effect of warm acupuncture combined with plantar reflex area massage and pelvic floor muscle training on stress urinary incontinence[J]. International Journal of traditional Chinese medicine, 2011, 33(3), p.3.