

International Journal of Medicine and Life Sciences

Volume 2, Issue 1, December, 2017

<http://www.hknccp.org>

President: Zhang Jinrong

Chief Planner: Hu Yuejuan

Executive Chief Editor: Chen Lihua, Cui Shuzhen, Shuyu Chen

Editorial Board: Li Shu, Xu Ya, Gao Shufen, Ya Hui, Su Daqi, Albert, Yu Borui,
Souza, Pei Liu, Chun Hao, Li Dhidai, Meng Yu

Audit Committee: Lin Lichan, Xu Lijuan, Dong Peiwang, Su Jianmin, Ali Coskun, You Wenying, Chen Xingeng,
An Xin, Yan Yanhui, Tang Ming, Yang Ming, Zhi Zhong, Xiao Han, Sun Wenjun,
Yoon-seon Lee, Bom Sook Kim, Chang-Duk Jun, Jin Hong Cha, Tan Ker Kan,
Tian-Hua Huang, Jorge Serra Colina, Yong Shao, Vikram Kate

Publisher: HongKong New Century Cultural Publishing House

Address: Unit A1, 7/F, Cheuk Nang Plaza, 250 Hennessy Road, Wanchai, Hong Kong

Contents

Postoperative Nursing of Fracture Surgical Treatment for the Aged <i>Ling Han, Xiurong Wang, Degong Mu</i>	(1)
Analysis of Timely Intervention Model for Nursing Errors in Comprehensive Operating Rooms <i>Xiurong Wang, Ling Han, Degong Mu</i>	(6)
The Study of Contemporary Chinese Undergraduates' Interpersonal Trust <i>Lan Li, Xichao Hao</i>	(12)
Novel Fungal Group Pretreatment of Waste oat Straw to Enhance Economic And Efficient Biohydrogen Production <i>Lirong Zhou, Loretta Li</i>	(16)
Study on the Correlation between Expression and Pain of Nav1.7 in Dorsal Root Ganglion <i>Chenyang Han, Guoming Zhou*</i>	(21)
Study on Early Warning and Adaptive Prediction Model of Hypoglycemia Risk in Diabetic Patients <i>Shumei Liu, Hongying Liu, Wang Rui, Haichuan Dou</i>	(25)
Clinical Significance of D-dimer,SF and LDH Levels in Patients with Acute Leukemic <i>Keyu Liu, Huijuan Song, Meirong Li, Yantao Su, Yanhong Wang, Ling Qiao, Congmin Wang, Yuhang Sun, Shujing Qi, Zexian Fu</i>	(31)
Detection of GCA Transforming Growth Factor β Receptor I, II Methylation Status and its Clinical Significance <i>Hong Wei, Guangmei Kang, Junxia Gu, Jianxia Liu, Hongyan She, Jing Zhang, Wei Guo, Hongqi Gao, Yongsha Li, Wenjing Zhao</i>	(35)
Comprehensive Treatment for Advanced Breast Cancer <i>Xianjun Liu</i>	(41)
Analysis of the Target Motion Degree Measure of Primary Tumor of Esophagus Cancer <i>Guangyu Tian</i>	(45)
Influence of Magnesium Isoxalate on Hyaluronic Acid, Type IV Collagen and Laminin of Chronic after Hepatitis Fibrosis <i>Wenjing Zhao, Ronghua Hou, Ting Liu, Liping Hu, Min Li, Wenjuan Xin, Xiaoxu Fen, Jilin Yan</i>	(49)
Initial Symptom of Upper Respiratory Infection in Chronic Eosinophilic Leukemia with FIP1L1/PDGFRα Rearrangement: Recovery with Iimatinib <i>Keyu Liu, Yanfang Yu, Huijuan Song, Xueqin Wang, Zexian Fu</i>	(51)
The Effect of Atorvastatin on Serum Inflammatory Factors in Patients with Diabetic Macro-angiopathy <i>Wenjing Zhao, Junmei Wu, Xiaomin Liu, Yanlu, Zhixin Zuo</i>	(55)
Research on China's Health Insurance System <i>RuiFeng Su</i>	(58)
Therapeutic Efficacy Observation of Hitting Hot Pack for the Treatment of Thoracic and Lumbar Vertebrae Compression Fractures of Martial Arts Athletes <i>Zhiyang Han</i>	(60)
Analysis of Joint Injury Caused by Large-scale Kicking Movement During Sanda Process <i>JianHua Chai</i>	(65)

Postoperative Nursing of Fracture Surgical Treatment for the Aged

Ling Han, Xiurong Wang, Degong Mu*

The First Hospital of Jilin University, Changchun, 130000, China

Abstract: In traditional postoperative nursing methods of fracture surgical treatment for the aged, there are always problems such as high risk of complications, less good recovery of joint function etc. To solve these problems, the nursing method with strengthened rehabilitation nursing based on basic rehabilitation nursing is designed in this paper. From previous body position nursing, drainage tube nursing, injured limb nursing, urination nursing, cut nursing and external fixators nursing to latter diet nursing, mental nursing, functional training and discharge instruction, a complete strengthened nursing method and flow is designed. Experimental results of contrast of simulated application environment show that compared with traditional nursing methods, the method proposed can reduce the probability of occurrence of complications and improve the good recovery of joint function of patients.

Keywords: Fracture surgical treatment for the aged; Postoperative care; Complications; Recovery of joint;

1. Introduction

Joint fractures are common clinical injuries for the elderly. Since most elderly patients suffer from other chronic diseases such as coronary heart disease, hypertension, hyperglycemia, and hyperlipidemia, it may take a long time for traction or comorbid conditioning before surgical treatment. Due to longer bed rest, the incidence of complications such as pressure sores, joint dysfunction and deep vein thrombosis is high. Postoperative rehabilitation nursing for elderly patients with joint fractures is of great significance. Based on the basic methods of rehabilitation nursing, the strengthened nursing method is proposed in this paper, and 104 cases of joint fractures in the elderly are taken as experimental cases for case analysis, and the related research on postoperative care of the fracture surgery for the aged is completed.

2. Strengthened Postoperative Nursing Method

2.1. Body position nursing

After the patient finished the operation and returned to the ward, his vital signs and consciousness is observed^[1]. Sleep without pillow for 6 hours and bedside ECG monitoring is conducted. Patient's blood pressure, pulse, and breath is recorded every 20 to 30 minutes, meanwhile, the patient's consciousness, infusion and drainage, etc. are observed. After the condition became stable, the interval time is changed to 2 hours and is gradually extended to 4 hours. The infusion patient ward was inspected once every 30 minutes. The anesthetized unconscious person's head is biased to one side. After lying flat for 6 hours, the patient needs to turn over once every 2

hours. For shaft type rolling turn over, the neck, chest and lumbar vertebrae should be kept on the same axis. Firstly, the patient's knees were flexed. One hand is placed on the patient's shoulder and back, the other hand is placed on the buttocks, the patient is turned to the opposite side, and the back was placed on the pillow. When changing the body position, it should begin from left 45°, to prostration, right 45° and gradually to 60°. Patients should not insist to turn over independently to avoid improper force or distortion of the spine, resulting in internal failure^[2].

2.2. Drainage tube nursing

It's necessary to keep the drainage tube patency, observe and record the color, character and quantity of drainage fluid. The drainage under ordinary pressure should be adopted within 24 hours as the vacuum drainage may results in larger amount of bleeding to patient while being thorough^[3]. The phenomenon that the drainage fluid gets much and thin with light color should be reported to doctor in time once it occurs. In order to avoid the distortion and slip of drainage tube caused by turning over and urination or defecation, the tube should be fixed appropriately.

2.3. Observation and nursing for injured limb

First, the basic nursing step after fracture surgical treatment is to observe the blood circulation of limb by touching the artery of limb or the posterior tibial artery, observing the skin color, measuring the skin temperature and the reaction of blood capillary. Doctor should be informed of the abnormal situation in time for further treatment. After observation, the limb should be elevated

to promote the blood backflow in limb vein and thus to alleviate pain as well as promote wound healing ^[4].

Next, attention should be paid to observe the wound situation such as errhysis and seepage, and the dressing should be replaced to keep the wound dry when there is a large amount of errhysis and seepage. The partial redness, swelling, heat, and pain of the limb indicates that the wound is infected, of which the doctor should be informed for further treatment.

Finally, attention should be paid to observe the feeling and action of the limb. Within 24 to 72 hours after the surgery, the feeling, motion and sphincter function of the limb should be checked once a day. To know about the spinal function of patients, it's necessary to stretch or touch their injured limb to check whether the feeling and motion function still work, whether the muscle strength improved, whether the nervous reflex is recovered ^[5].

2.4. Urination nursing

A hot-water bag is commonly placed on hypogastrium of patient who has not micturated six hours after the surgery, or the catheterization is necessary if the massage is ineffective, the ureter should be kept until the patient is able for voluntary urination ^[6]. When indwelling the catheter, the strict aseptic technique is required. During the first week after injured, the action of bladder is losing, therefore the ureter should be kept open and unobstructed by drainage, and for the following period, it's open once three or four hours to avoid the bladder contracture and help form reflection to training. The perineum needs to be scrubbed twice a day with 0.5% iodophor cotton ball, the drainage pack being replaced everyday, and drinking water being encouraged.

2.5. Cut nursing

In the evening of surgery, the pain is intense. The patient cannot move, take a deep breath nor cough because of the pain, at this moment, the pulmonary infection is quite possible ^[7]. During the two days, especially the first day after the surgery, it's necessary to give moderate amounts of analgesic to patient, and the interval time should be more than 6 hours. Mental nursing is also necessary to distract attention

2.6. External fixators nursing

After the surgery, a disinfecting cotton pad will be placed under the limb of patient, and if necessary, it will be protected by a protective frame. Fixed needles may cause damage to nerves and blood vessels in affected limbs. They should closely observe the neurological symptoms of limbs, observe whether the limbs have numbness and pain, and pay attention to the blood circulation of limbs and changes in the activities and color of limbs ^[8]. Abnormal situation should be informed to the doctor to deal with accordingly. When the patient feels uncomfortable

due to fixed needle, a local massage can be performed to promote blood circulation of the limb. If the patient's wound is swollen, it's necessary to closely observe the amount of bleeding, prevent active bleeding, and change the dressing in time. In addition, needle eye infections should be prevented, needles should be disinfected with 75% alcohol or 0.5% iodophor twice a day.

2.7. Mental nursing

Due to the poor physical recovery of the elderly, there are many complications after fracture surgery, especially for patients with open fractures, because the healing time is longer, the patient's ideological burden is heavy, the patient often showing pessimistic, anxious emotions ^[9]. At this time, we should actively introduce the surrounding environment of the hospital to patients, and cordially talk with patients to eliminate the patient's strangeness and tension, explain the relationship between emotion and disease to the patient, encourage them to maintain a comfortable mood, and introduce cases of good postoperative recovery to make them establish confidence and actively cooperate with the treatment. Explaining the relevant knowledge of the disease to the patient can ensure the patient's psychological relaxation, eliminating their ideological concerns.

2.8. Diet nursing

Patients should be able to eat 6 hours after anaesthesia, they should enhance the intake of water and nutrients, choose nutritious and digestible foods, eat foods containing high protein, high vitamin, high calcium and plain fiber ^[10].

2.9. Functional training

Both the positive and negative functional training can help patient recover. Every patient is set the activity index based on their actual conditions, the index should become larger and larger and the right instruction and supervision is necessary ^[11]. The activity numbers and time are determined by patients' tolerance degree. During the early stage after the surgery, we should teach the patient to stretch their limbs on bed, the detailed methods are described below: (1) The isometric contraction of quadriceps femoris should be performed from the second day after the surgery ^[12]. (2) Bend and stretch of joint. (3) Elevation of wounded part. For example, when the patient suffers from thoracolumbar vertebral fracture, his muscle group of back and waist should be trained a week after the surgery, at this moment, the training method of five points is practical, namely, taking the feet, elbows and head as the supporting point, the waist tries to separate from the bed for ten times a day, the supporting points will be reduced gradually according to patient's physical power. Four to six weeks after the surgery, the patient should be assisted to sit, six weeks after the sur-

gery, the patient needs to practise walking with crutch, then standing and walking without crutch. Patients with paraplegia should rely mainly on passive motion of joints and then on massage of limbs to prevent muscular atrophy and joint stiffness caused by long-term bed rest. (4) At the third day after the internal fixation, the bend activity of joint can be performed, and during five to seven days after the external fixation, the patient can walk with crutch, the injured limb can move without load. After taking out the external fixation, the patient should fully practice the joint activities and gradually carry out weight-bearing activities. It is forbidden to do the rotation of the affected limb, because it is easy to affect the stability of the fracture end, and it is easy to cause the symptoms of bone disconnection ^[13].

2.10. Discharge instruction

The first is to inform the patient to continue functional exercise after discharge, emphasize that functional exercise must be persevered, and it is necessary to gradually increase the amount, time and range of activities ^[14]. The second is to inform the patient of one-month, three-month, and six-month follow-up visits. The patient is instructed to perform normal activities according to the healing of the epiphysis. The weight-bearing load should be gradually transferred from partial weight to full weight according to the progress of fracture healing. Only when both the clinic and X-rays confirm that the fracture has healed can you fully load. The third is to inform

the patient to avoid the lateral position within 3 months after the operation, and do not carry weight-bearing exercise and do not bend the affected area [15]. The fourth is to tell the doctor's contact information, if there are special circumstances, it's necessary to contact the doctor in time.

3. Nursing Cases

3.1 Clinical data

The elderly patients from January 2009 to January 2011 are selected as subjects. Among the 104 patients, 49 are male and 55 are female, and they are aged between 60 and 86, with an average age of 69 years. There were 61 cases of fracture of femur neck, 43 cases of femoral intertrochanteric fracture, 51 cases of left side fractures, 53 cases of right side fractures, 67 fractures caused by falls, 31 fractures caused by falling heights, and 6 fractures caused by traffic accidents. Among the 104 patients, 34 patients suffer from hypertension, 24 patients suffer from diabetes, and 41 patients suffer from coronary heart disease. Treatments included artificial femoral head replacement in 33 cases, manual total hip arthroplasty in 46 cases, and closed reduction and compression cannulated screw internal fixation in 25 cases. The patients are randomly divided into observation group (54 cases) and control group (50 cases). The data of the two groups of patients are shown in Table 1.

Table 1. Contrast of clinical data between observation group and control group

	Cases	Age	Male/female	Left/right side	Classification of fracture		Complication	
					Fracture of femur neck (cases)	Femoral intertrochanteric fracture (cases)	hypertension (cases)	Coronary heart disease (cases)
Observation group	54	69.1±4.2	26/28	26/28	32	22	18	
Control group	50	69.3±5.1	23/27	25/25	29	21	16	20

The control group received conventional postoperative rehabilitation care. It mainly includes functional exercise method guidance and functional exercise training for discharge. The observation received an enhanced rehabilitation nursing intervention based on the rehabilitation nursing of the control group, that is, using all the nursing methods mentioned above to care for the observation group.

3.2. Nursing content and methods

1.1-1.10 above are the references for postoperative care.

3.3. Nursing procedure

On the first day after the surgery: the injured part should be exposed for 30°. A soft pillow is spaced between the legs. The patient is instructed to perform flexion and dorsiflexion of the ankle after the patient's lower limbs recover.

On the second day after the surgery: the patient is instructed to perform contraction training of the quadriceps femoris. After lying down, the knee joint is naturally straightened, and the muscles of the lower limbs are relaxed after exerting force. Through repeated contraction and relaxation exercises, local blood circulation can be effectively promoted and muscle atrophy can be reduced. The patient is instructed to exercise the natural buckling of the contralateral side, and the buttocks are lifted by the three-point support of the elbow joint and the contralateral sole. Three-point support hip-raising exercise can reduce the occurrence of pressure sores on the basis of improving the body movement ability.

On the third day after the surgery: on the basis of pain tolerance, passive ipsilateral knee flexion and extension exercises are performed. Activities gradually changed from passive to semi-active, and the magnitude of activities gradually increased based on the degree of pain that the patient can tolerate.

On the fourth day after the surgery: patients with closed reduction and internal fixation can sit up on the fourth postoperative day. First, the patient sits passively by means of a shaker to activate upper limb function.

On the fifth to seventh day after the surgery: the knee flexion function on the affected side of the patient should be gradually exercised, and the semi-passive activities on patients whose ankle joint can flex 90° are conducted, allowing them to sit at the bedside with feet sagged. The patient is instructed to exercise in a sitting position, but be careful to swing the lower limbs of the ankle replacement.

At the second week after the surgery, the patients with good pre-function recovery can be discharged. Further consultation outside the hospital and functional exercise are performed before discharge, and detailed information on the content, methods, and precautions of the patient's functional exercise at each time period is taught to the patient. The illustrated manual of functional exercises is distributed and the patient is informed of hazards of various dangerous postures and precautions during review.

3.4. Observational index

The data of the two groups are compared. The Harris score is performed on the recovery of the ankle joint 6 months after operation. The incidence of postoperative complications and the improvement of quality of life before and after treatment are observed. Among them, Harris scored more than 90 points for excellent, 80 to 89 points for good, 60 to 79 points for passing, and below 60 points for bad. The quality of life is assessed using the SF-36 scale, which mainly included 7 dimensions such as RP (physiological function), BP (pain), GH (general health), VT (vigor), SF (social function), RE (emotional function), MH (mental health).

3.5. Statistics method

Data are processed using the SPSS 17.0 statistical analysis software package. The t-test is used for the measurement data, and the X2 test is used for the count data. When P<0.05, there is a contrast difference.

3.6. Nursing results

3.6.1. Ankle joint function

The functional recovery of ankle joints at 6 months after surgery is shown in Table 2.

Table 2. Comparison of ankle joint function improvement between observation group and control group

	Observation group	Control group
Cases	54	50
20 excellent (cases)	38	20
Good (cases)	14	25
Passing (cases)	2	4
Bad (cases)	0	1
Excellent rates (%)	96.30	90.00

Table 2 shows that in the observation group, the ankle joint score is better than the control group after 6 months of treatment, and the total excellent and good rate is higher than the control group. That is, the nursing measures mentioned in this article are beneficial to the functional recovery of the ankle joint in fracture patients.

3.6.2. Complications and life quality

The quality of life of the two groups at 6 months after surgery is shown in Table 3. The score of SF-36 in the observation group is higher than that of the control group. In the observation group, no symptoms of pressure ulcers and deep venous thrombosis occurred. One patient had artificial prosthesis dislocation at 5 months after operation. One patient had knife-edge infection after surgery, but 54 patients have no significant dysfunction. In the control group, one patient had symptoms of pressure sores, two patients had symptoms of prosthesis dislocation after surgery, and one patient had significant dysfunction due to limb shortening after surgery. The difference in the incidence of postoperative complications between the two groups is X2=5.124.

Table 3. Comparison of life quality scores at postoperative 6-month in observation and control group

	Observation group	Control group
RP (physiological function)	78.5±5.3	72.5±4.8
BP (pain)	79.4±5.6	73.4±4.9
GH (general health)	77.8±4.3	70.6±5.1
VT (vigor)	78.7±4.8	71.1±6.0
SF (social function)	76.5±8.2	70.5±6.1
RE (emotional function)	79.3±4.3	73.4±6.8
MH (mental health)	81.6±4.6	75.8±5.1

From the data of X2 and Table 3, it can be seen that the risk of complications in the observation group is lower than that of the control group. The nursing measures mentioned in this article can reduce the incidence of complications; the quality of life score in the observation group was higher than that in the control group at 6 months after surgery. This means that the nursing measures mentioned in this article are conducive to the normal life of the patient.

3.7. Results analysis

The results of this paper show that after the enhanced early rehabilitation care, the patient's ankle joint function recovery rate is significantly higher than the traditional nursing model, and the complications are effectively prevented and controlled. The life quality of patients improved significantly after surgery, especially in terms of physiological functions and social functions. Our analysis of the effects and methods of postoperative rehabilitation nursing for patients with ankle fractures for elderly

shows that enhanced rehabilitation nursing interventions can effectively improve the recovery of postoperative sacral function and reduce postoperative complications occurrence rate in elderly patients with ankle fractures, improve clinical efficacy, and effectively improve the life quality of patients.

4. Conclusion

In order to reduce the occurrence of adverse reactions after fracture surgery in the elderly, reduce the incidence of complications, and improve the success rate of surgery, this article proposes a more comprehensive and enhanced nursing method based on basic rehabilitation nursing methods. 54 patients underwent enhanced postoperative care, the results show that due to osteoporosis in the elderly, the phenomenon of insufficiency of blood supply during passive posture is easy to occur and various organ failures are obvious. Therefore, enhanced postoperative nursing methods should be used to reduce the incidence of complications and improve the recovery rate of joint function and thus increase the success rate of surgery.

References

[1] Wang Yan, Dong Rui Rui. Effect of nursing intervention on limb swelling after fracture [J]. Science, Technology and Engineering, 2017,17(10): 141-145.
 [2] Luo Chunlan. Application of comfortable nursing mode in postoperative nursing of tibia and fibula fracture [J]. Grass-roots Medical Forum, 2017,11(21): 701-703
 [3] Zhu Min. Effect of Evidence-based Nursing in postoperative Nursing of Thoracic vertebral fracture [J]. Chinese and Foreign Medical Research, 2017,15(27): 109-110.
 [4] Wang Min, Wu Renting. Femoral trochanteric fracture Postoperative nursing [J]. Diet Health Care, 2017,40(16):222-222.

[5] Zou Xiaoyan, Fang Xin. Clinical application of nursing concept of rapid rehabilitation surgery in postoperative nursing care of elderly hip fractures [J]. Health for all, 2017,11(115):110-111.
 [6] Tong Lihua. Study on nursing points of elderly patients with hip fracture after operation [J]. Electronic Journal of Clinical Medical Literature, 2017,11(75): 14764- 14765.
 [7] He Yiping. Application of rehabilitation nursing concept in postoperative nursing of lower extremity fracture [J]. Health Care Guide, 2017,11(10):110-111.
 [8] Kong Wu Ying, Zhang Dan Di, Dai Xiaojuan. Application of prophylactic nursing intervention in postoperative nursing care of lower extremity fracture [J]. Psychiatrist, 2017,23(30):11-12.
 [9] Guo Yanping, Li Yanling. Nursing care and rehabilitation guidance for femoral fracture after operation [J]. Clinical practice of Integrated traditional Chinese and Western Medicine, 2017,17(1): 148-149.
 [10] Wang Xiaoqian. Application of high quality nursing in postoperative nursing of femoral neck fracture [J]. Grass-roots Medical Forum, 2017,21(01): 3199-3200.
 [11] Cui Limei. Study on postoperative nursing care of senile femoral neck fracture [J]. Electronic Journal of Clinical Medicine, 2017,78(02): 15372-15373.
 [12] Jiang Linlin. Postoperative nursing experience of femoral neck fracture [J]. Abstract of the latest Medical Information in the World, 2017,48(11):110-111.
 [13] Liang Ling. Effect of nursing intervention on rehabilitation of patients with limb swelling after limb fracture [J]. Journal of practical Clinical Nursing, 2017,22 (28): 25-26.
 [14] Wu Lingling, Chen Jin, Zhang Muchun, et al. Application of rapid rehabilitation nursing in prevention of deep vein thrombosis after femoral fracture surgery [J]. Chinese medicine guide, 2017, 14 (16): 166-169.
 [15] Pan Yaying, Wang Hua, Zhang Ping, et al. Patients with severe open fracture of extremities were treated with negative pressure closed drainage and external fixator for postoperative care and psycho psychological impact on patients [J]. Journal of Guangxi Medical University, 2017, 34 (3): 470-474.