

Effects Of Physiotherapy Rehabilitation For Bilateral Above Knee Amputation

G. Yasmeen

R. Monisha

Lingammal

Ezhil Bhavani.

SRM College of Physiotherapy, SRM Institute of Science and Technology

Abstract:

Objective: To find out effect of physiotherapy for bilateral above knee amputation.

Study design: Quasi experimental study design.

Subjects: subject with bilateral above knee amputation.

Intervention: Desensitization of stump end, which include massaging the stump, rubbing different fabrics at the stump. Strengthening exercises to hip adductors extensors were done and stretching of the hip abductors and flexors were done for four weeks.

Outcome measure: Numeric pain rating scale

Results: Statistical analysis was done by using Paired t test which showed significant improvement in both group.

Conclusion: The study concluded that physiotherapy management before and after the bilateral above knee amputation makes the patient able in his social and functional activities in community.

Keywords: physiotherapy management, bilateral above knee amputation.

I. INTRODUCTION

Above-knee amputation (AKA), or transfemoral amputation is a surgical procedure performed to remove the lower limb above the knee joint when that limb has been severely damaged or diseased. Most AKAs are performed due to peripheral vascular disease, or severe disease of the circulation in the lower limb. Poor circulation limits healing and immune responses to injury. Foot or leg ulcers may develop and not heal. They may become infected, and the infection may spread to the bone and become severe enough to be life threatening. Amputation is performed to remove the diseased tissue and prevent further spread of infection. Above-knee amputations are performed when the blood flow is inadequate in the lower leg or infection is so severe it prohibits a lower-level surgery.

An essential component of prosthetic training in amputees is to achieve full weight bearing through the prosthesis. The end-bearing nature of the intact femur in an individual with a Above knee (Transfemoral) amputation offered a rare opportunity to examine this component. The purpose of this case study was to describe the Physiotherapeutic treatment considerations specific to the above-knee amputee. Treatment is determined by the assessment findings. The physiotherapy programme includes post-operative exercises, early weight-bearing, bed to chair transfers, bandaging techniques, the counteracting of contractures and gait training. Physiotherapy is a vital part of the rehabilitation of above-knee amputees. Principles of treatment are based on normal human locomotion, the individual patient's health status, biomechanical changes and expected stump functions.

Rehabilitation of the amputee falls into four categories of concentration: postoperative care, fitting of the prosthesis,

functional training and vocational re-training. Postoperative care is intended to assuage any psychic trauma, to prevent surgical complications, and to prepare the stump for prosthetic fit. It assists the amputee in attaining some independency before the fitting of the artificial limb as well as in reducing his total dependency on the prosthesis in an emergency when the prosthesis could not be used. Fitting of the prosthesis includes procedures whereby the proper prosthesis is selected and fitted for the individual. Functional training includes instruction and practice in the use of the prosthesis. Vocational re-training covers the preparation of the amputee for the occupation most suitable to his new limitations. It may include psychometric testing and prevocational exploration, vocational training and vocational guidance, schooling, and placement.

AIM OF THE STUDY

Aim of the study is to train the above knee amputation patient to reach the near normal level of function in the society and improve their psychological status and prove that they are capable in achievements and they are not disabled, but differently able people.

NEED FOR THE STUDY

Studies which are related with effect of physiotherapy for bilateral above knee amputation are limited. Hence this study is done.

II. METHODOLOGY

STUDY DESIGN : Quasi - Experimental design.
STUDY TYPE : Pre and Post type.
SAMPLING METHOD : Convenient sampling.
STUDY DURATION : 4 weeks.
STUDY SETTING : JAYA college of Physiotherapy,
Physiotherapy outpatient Department,

INCLUSION CRITERIA

Individual who would under gone bilateral above knee amputation.

EXCLUSION CRITERIA

Systemic and psychiatric illness.
Degenerative changes.

MATERIALS USED

Couch.

OUTCOME MEASURES

Numeric pain rating scale.

PROCEDURE

Patient who are referred to Physiotherapy Outpatient department with bilateral above knee amputation are screened for possible inclusion criteria. The purpose of the study was explained to the subject and signed printed informed consent form was taken. The procedure is repeated for 5 days per week for 4 weeks. A pre-test and post-test result of Numeric pain rating scale was noted.

Then the treatment area is made clean and proper dressing of the stump, Patient educations were done regarding stump care, regular massaging of the stump and the positioning of the stump, Counseling were done regarding his ability to attain normal life using prosthesis again as being a right above knee amputee he was given information regarding availability of modification things in his day to day activities.

Desensitization of stump end, which include massaging the stump, rubbing different fabrics at the stump. Strengthening exercises to hip adductors extensors were done and stretching of the hip abductors and flexors were done for four weeks.

End of the fourth week pain at the stump end was 2/10 on NPRS. Range of motion was full and pain free and Hip adductor strength was 3/5 extensor were 4/5. initial prosthesis was applied and checks were done while patient walked in the parallel bar initially with support and later on without support, Balancing exercises at parallel bar were taught with prosthesis. Along with education on donning and doffing of prosthesis re-emphasizes on stump care. Now the patient is able to walk with prosthesis on different terrain and able to perform ADL without any degree of difficulty.

III. DISCUSSION

One phase of rehabilitation of the bilateral above-knee amputee, namely, functional training, has been discussed. An attempt has been made to show that the fundamental approach to functional training with prosthetic devices is the same as with braces and crutches. Proper evaluation is followed by general conditioning, including pre-prosthetic stump exercises, and training in fundamentals, prior to actual instruction in functional activities. Four qualities have been emphasized as the bases of training. These are strength, balance, coordination and endurance. Of these, coordination has been considered as the most essential. The proprioceptive sensation of the lower limb, with the active reproduction of a predetermined angle method, in a closed kinetic chain environment, using the healthy limb like an internal control group. This angle was selected because it is a representative angle within the functional range of flexion of the knee, which is required for normal gait, both for the stance phase and for the beginning of the swing phase. It even seems that the activation of mechanoreceptors is greater in this angle. This fact suggests that albeit the study participants showed decreased value of proprioceptive sensation to a certain degree, they did not present a serious decrease of proprioceptive information of the lower limb and more specifically the knee joint, after an above-knee amputation and placement of a prosthesis, for at least one year. These results are in accordance with the

findings of previous researchers, who did not record significant decrease as well, as regards the Joint Position Sense (JPS) after amputation and place men to fan artificial joint.

IV. CONCLUSION

The study concluded that physiotherapy management before and after the bilateral above knee amputation makes the patient able in his social and functional activities in community. Hence, the results showed a significant improvement.

REFERENCES

- [1] Klopsteg, Paul E., and Wilson, Philip D., et al., Human Limbs and Their Substitutes. Chapter 24: Training of the lower-extremity amputee, by Curtis Huppert and Herbert Kramer, pp. 763. McGraw-Hill Book Company, Inc., New York, 1954.
- [2] Physical Reconditioning. War Dept. Technical Manual, TM 8-292, War Dept., Dec. 1944.
- [3] Handbook of Physical Training for Use in Rehabilitation Program of the Medical Department, U.S. Navy, issued jointly by Bureau of Medicine and Surgery and Bureau of Naval Personnel, Navy Department. Washington. D.C.
- [4] Hoberman, Morton. Cicensia, Erbert F., and Stephenson, George R. Daily activity testing in physical therapy and rehabilitation. Arch. Phys. Med., 33: 99-100. 1952.
- [5] Morrison, H. C. The Practice of Teaching in Secondary School. University of Chicago Press, Chicago, 1939.
- [6] Wells, Katherine. Kinesiology, W. B. Saunders Co., Philadelphia. 1950, pp. 455-456.
- [7] Deaver, G. G., and Brown, Mary E. The Challenge of Crutches. II. Crutch-walking: Muscular demands and preparation. Institute for the Crippled and Disabled, New York, 1946.
- [8] Dening, K., and Deyoe, F. Ambulation, Chapter V, Mat exercises. Funk and Wagnails, New York, 1951.
- [9] Hoberman, Morton, Cicensia, Erbert F., Dervitz, Hyman L., and Sampson, Oscar C. The use of lead-up functional exercises to supplement mat work, exercise without apparatus. Phys. Therapy Rev., 31:321-328, 1951.
- [10] Handbook for the Leg Amputee. VA Pamphlet 10-37, Veterans Administration, Washington 25, D. C, Aug., 1951.
- [11] Hoberman, Morton, Cicensia, Erbert F., Dervitz, Hyman L., and Sampson, Oscar C. The use of lead-up functional exercises to supplement mat work, exercise with apparatus. Phys. Therapy Rev., 31:360-369, 1951.
- [12] Buchwald, Edith, et al. Physical Rehabilitation for Daily Living. Chapter II, Bed and mat exercises. McGraw-Hill Book Co., Inc., New York, 1952.
- [13] Harris, Dorothy M. Crutch balancing. Phys. Therapy Rev., 30:424-429, 1950.
- [14] Cicensia, Erbert F., Hoberman, Morton. Parallel bar activities. Am. J. Phys. Med., 34:591-605, 1955.
- [15] Deaver, G. G., and Daniel, Earl H. The rehabilitation of the amputee. Arch. Phys. Med., 30:638-656, 1949.
- [16] McComas, M. L., and Zimmerman, B. E. Lower extremity amputee check list. Phys. Therapy Rev., 35:305-312, 1955.