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Radial nerve palsy caused by compression garment for lymphedema - Case report

Sang Yoon Lee[1*], Ha Ra Jeon [1†], Seong Woo Kim [1], Seung Yeon Rhee[1]

National Health Insurance Service Ilsan Hospital, Department of Physical Medicine and Rehabilitation[1]

Introduction

Lymphedema is a condition of localized fluid retention and tissue swelling caused by a compromised lymphatic system. Upper extremity lymphedema is common complication in breast cancer patients. Complex decongestive physical therapy is a primary tool in lymphedema management consisting of manual lymphatic drainge, compression bandaging and therapeutic exercise. Complex decongestive physical therapy is comfortable therapeutic Methods for lymphedema, however we experienced side effect after application compression garment.

Case

A 66-year-old woman was diagnosed with left breast cancer (invasive ductal carcinoma with metastatic left axillary lymph node, supraclavicular fossa, and left mediastinum) and she underwent a modified radical mastectomy. Two months after the surgery, the patient visited the outpatient clinic in the Department of Physical Medicine and Rehabilitation with the complaint of left upper extremity swelling. The swelling and pitting edema in left upper extremity was observed and circumferential difference between right and left upper extremities were 3 centimeters(cm), 2 cm, 2 cm and 1 cm from the elbow crease to above 10 cm, above 5 cm, below 5 cm and below 10 cm. The patient was treated for lymphedema with complex decongestive physical therapy such as manual lymphatic drainage, compression bandaging, and therapeutic exercise. Follow-up measurement of arm circumference was carried after 2 weeks, a circumferential difference between right and left arm were 2 cm, 1.5 cm, 2 cm and 0.5 cm from the elbow crease to above 10 cm, above 5 cm, below 5 cm and below 10 cm. It is considered that complex decongestive physical therapy is effective and compression garment was applied to the patient. After 2 weeks, a circumferential difference between right and left upper extremities were decreased, but she complained of weakness of left elbow and wrist extension power. On the Medical Research Council (MRC) Scale for grading muscle strength in her left upper-limb, she scored 4/5 for left elbow extension and 2/5 for left wrist extension. She underwent electromyography to confirm radial nerve compression. In the EMG study, it showed decreased amplitude of sensory nerve action potential in the left radial nerve and abnormal spontaneous activities in left brachioradialis, extensor digitorium communis, extensor carpi radialis, extensor carpi ulnaris and extensor indicis proprius muscles. She was diagnosed with left radial nerve injury. After that, she discontinued application of compression garment and was started on strengthening exercise for the weakness of left elbow and wrist extension with manual lymphatic drainage and therapeutic exercise.

Conclusion

Compression garments are a common therapeutic Method for breast-cancer-related lymphedema. Compression garments are generally safe and effective therapeutic tools for lymphedema. However, this Case report suggests that compression garment therapy may cause nerve injury.