



Title: A Preliminary Study on the Effect of Bladder Function Reconstruction on the Establishment of Autonomous Bladder after Spinal Cord Injury

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Abstract:

Neurogenic bladder is a common complication of spinal cord injury (SCI) and can lead to life-threatening consequences such as kidney failure if not properly managed. We performed bladder function reconstruction techniques during spinal shock period, including cleaning intermittent catheterization, pelvic floor functional magnetic stimulation, pelvic floor muscle function training, and breathing training. Before treatment, 1 month and 3 months after treatment, the surface electromyography of pelvic floor muscle and bladder manometry were performed. The results showed that compared with the patients who started BRT treatment after shock stage, the pelvic floor muscle function of the patients who started BRT treatment in shock stage was significantly improved, the bladder volume was closer to the normal value, the residual urine volume was lower, the pressure of leakage point was higher, and the bladder compliance was increased. Autonomous bladders were established in 21 of the 30 patients in the shock phase, but only 12 of the 30 patients in the post-shock phase. The time of the first reflex urination and the establishment of the autonomous bladder were both earlier than those in post-shock patients. Conclusion: The application of BRT in shock stage is helpful to maintain the normal bladder volume, enhance the control of urination, reduce residual urine volume, and facilitate the establishment of autonomous bladder in patients with SCI.