Brown-SEQUARD Plus syndrome Produced by Different Traumatic Injuries to the Spinal Cord with a Good Neurologic Recovery: Report of Seven Cases
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Abstract:

\textbf{Background:} With the advent of modern times, the incidences of traumatic injuries to spinal cord are rising. A large number of these patients suffer from incomplete spinal cord injuries. Brown-SEQUARD Syndrome is one of the incomplete spinal cord injuries. Frequently it presents as Brown-SEQUARD Plus Syndrome.

\textbf{Objectives:} To evaluate the demographic, neurological and functional characteristics and course of recovery of patients diagnosed with Brown-SEQUARD Plus Syndrome resulting from traumatic injury to the spinal cord.

\textbf{Settings:} Spinal Cord Injuries Department, Armed Forces Institute of Rehabilitation Medicine, Rawalpindi, Pakistan.

\textbf{Methods:} Seven patients, with traumatic Brown-SEQUARD Plus Syndrome were evaluated clinically and radiologically and their functional outcomes observed.

\textbf{Results:} All seven patients, six males and one female, mean age 32 ± 13 had traumatic cervical spinal injuries. Three males had intervertebral disc herniation, one had vertebral fracture and one had cord contusion. The female had vertebral fracture as well as disc herniation and cord hemorrhage. Causes of injury were fall in two patients, a Gun Shot Injury in one, Improvised Explosive device blasts in two and road traffic accident in one patient respectively. All the patients were incontinent for bowel and bladder at the time of presentation, had neuropathic pain, relative ipsilateral weakness and contralateral anesthesia. Only three became voluntarily continent for bowel and bladder at discharge and the rest four were successfully trained in Clean Intermittent Catheterization for bladder management. All subjects were able to walk independently, four of them required orthoses and five needed gait aids. After an average hospital stay of 9 ± 4 weeks, four patients were sent home and the rest three continued with their jobs with some modification.

\textbf{Conclusion:} All reported cases of Brown-SEQUARD Plus Syndrome caused by trauma due to different mechanisms demonstrated favorable neurologic and functional outcomes after rehabilitation and returned acceptably near to pre-injury lifestyles.

\textbf{Keywords:} Brown Sequard Plus Syndrome, Spinal Cord Injury, Neuropathic Pain, Incontinence.

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