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Role of Diaphragmatic Pacing in Cervical Spine Injury: A Review

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Abstract

Introduction: With the frequency of recurrent hospitalizations and an ever-growing cost burden, respiratory failure and chronic ventilator reliance in tetraplegics following cervical spine injuries pose a major obstacle in patient rehabilitation. Higher cervical spine injuries require prolonged mechanical ventilation with tracheostomy which favours nosocomial pneumonia and thus complicates rehabilitation process further. Diaphragmatic pacing with electrical stimulation of the

phrenic nerve by an implantable device to support respiratory system is an established treatment for central hypoventilation syndrome. Diaphragmatic pacing is aimed at weaning mechanical ventilation and restoring normal respiratory mechanics. This review is aimed at highlighting the role of diaphragmatic pacing in cervical spine injury patients in improving their quality of life by decreasing their dependence on mechanical ventilators.

Methodology: To construct this review article, extensive research was carried out on various databases like Ovid, Pubmed, Google Scholar, Medline, ResearchGate etc. Researches done in last 10 years only were included in the study.

Result & Conclusion: With this review we want to conclude that diaphragmatic pacing serves as an effective tool in weaning off of selected patients from mechanical ventilator and improving their quality of life but still there is a dearth of more researches and clinical trials on this subject.

Keywords: cervical spine injury, diaphragmatic pacing, spinal cord injury.