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Rehabilitation of tenodesis grasp using motor imagery in C6 quadriplegic patients
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Introduction.— Prehension movements are dramatically disturbed following C6 tetraplegia. Nonetheless, recovery of a modified prehension (tenodesis grasp) is achieved using wrist extensor muscles respectively leading to a passive finger closure (whole hand grasp) and to a passive thumb flexion against the forefinger (lateral grasp) (Mateo et al., 2012). Learning of the tenodesis grasp is a main functional objective in rehabilitation. In a single case study, Grangeon et al. (2012) demonstrate that adjunction of motor imagery practice to classical rehabilitation promoted this learning. The aim of this study (PHRC No. 2009-A01086-51) was to validate this hypothesis in a series of six C6 tetraplegic patients and six healthy control match subjects.

Material and method.— C6 tetraplegic patients had on average 30.3 ± 8.2 years, and were included after on average 13.7 ± 8.8 months with an ASIA motor score 23/100 ± 6.8, a MRC manual muscle testing of wrist extensor 5/5 and a Frankel A in 3 patients and B for 3 patients. Motor imagery prehension movements were performed over a 5-week period with one-hour session three times a week. Three pre-test, an immediate post-test and a second delayed post-test (2 months later) composed the experimental procedure. Kinematics recording of an apple reach-to-grasp movement and pointing movement was performed using an optoelectronic device (Vicon). Range of wrist extension and trajectory variability was the kinematics parameters studied.

Results.— In the reach to grasp movement, C6 tetraplegic patients showed an increased wrist extension in both immediate and delayed post-tests. Reduction of the trajectory variability during the deceleration of the transport phase was observed in 3 patients. Moreover in the pointing movement, reduction of variability of kinematic parameters indicates an improvement generalization following motor imagery practice.

Discussion.— These results confirm in a series of cases that motor imagery practice is an additional rehabilitation method to classical rehabilitation for the learning of new motor skills in tetraplegic patients.

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Objective.— Digestive dysfunctions are common in spinal cord injured patients (SCIp), with a significant impact on their quality of life. Defecation difficulties often lead to an extended time daily for stools exemption. This is one of the causes of development of an hemorrhoidal disease in this population. The objective of this study was a comparison of the management before and after the implementation of a healthcare protocol governing the postoperative period that was entirely performed in a PRM department.

Patients and methods.— Retrospective monocentric study carried out from the medical file of SCIP who were hospitalized in the neurological PRM department of Nantes’ University hospital and who underwent an hemorrhoidectomy between March 2007 and March 2013. Anamnesis, clinical neurological examination, course of the hospitalization (duration of bed confinement and stay, type of surgery, complications) and follow-up were recorded. They were compared according to the period of introduction of the protocol.

Results.— Thirteen patients were studied, 5 pre (Pp) and 8 subsequent (Up) to the implementation of the protocol. Hospitalization duration was similar between the two groups. In the Pp group, two presented a major hemorrhagic episode while none occurred in the Up group. The relationship between patients and the healthcare team has been improved by the clarification provided by the protocol. “Up group” patients always sat back in their wheelchair beyond the 10th day and the resumption of a controlled transit was the determining factor for discharge.

Discussion.— The indication of an hemorrhoidectomy in SCIP remains cautious. The epidemiology is ill-defined despite the impact of digestive disorders in this population. In the context of a spinal unit of the University Hospital of Nantes, surgery is organized as a medical-surgical network which led to the writing of a consensual protocol between proctologists and rehabilitation physicians. Besides the supervision of bedridden patients and then reinstallation in their wheelchair, the two main objectives of this protocol were monitoring the risk of bleeding by the eschar fall period and management of laxative treatments. This