Characteristic of surface myoelectric signals on maximum isometric voluntary contraction of wrist flexors and extensors in children with hemiplegic cerebral palsy

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Introduction.– To study the characteristics of surface myoelectric signals on maximum isometric voluntary contraction (MIVC) of wrist flexors and extensors in an attempt to gain insight for improvement of hand function in children with hemiplegic cerebral palsy (HCP).

Material and method.– Sixty-eight children with HCP were assessed with surface EMG. Surface electrodes were applied on the skin of wrist flexors and extensors. Integrated EMG (iEMG), root mean square (RMS), co-contraction ratio (CR) during the MIVC were recorded and analysed.

Results.– In the MIVC of both hands, differences of RMS, iEMG and CR of wrist in children with HCP were statistically significant between the involved and non-involved hands (P < 0.001), as well as the iEMG of wrist between both hands had positively good correlation (P < 0.05). The RMS of wrist between the involved and non-involved hands had also positively good correlation (P < 0.05), when grasping maximally used by the involved hand.

Conclusions.– The involved hand of children with HCP has excessive co-activation of wrist flexors, poor muscle recruitment and isolated selective movement control ability. It may be very important to facilitate wrist extensors contraction, inhibit wrist flexors co-activation, to induce involved hand use for improvement of hand function in children with HCP.

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Use of baclofen pump in the cerebral palsy of child: National survey of practice

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Objective.– The aim of this study was to shed a light on the current use of intrathecal baclofen delivered by pump infusion in France for cerebral palsy in children in order to standardize practice in that specific indication.

Method.– We performed an observational study based on a standardized questionnaire sent to 29 pediatric PM&R services over the country. The questionnaire consisted in closed responses (yes or no).

Results.– Twenty-four services responded to the questionnaire. Pre-test evaluation was performed in 22 cases and post-test evaluation in 21 cases, and early after implantation in 20 cases and late after implantation in 17 cases. Single shot infusion was the test favored by PM&R physicians in 15 cases. The pump was implanted in the subcutaneous tissue in 19 cases. Early complications were observed in 16 cases after pump implantation. Late complications were observed in 2 cases and consisted in catheter migration.

Discussion.– In conclusion, the current study demonstrated large practice diversity over the country and highlighted to potential for complications due to the treatment. The follow-up of the treated patients was also non-uniform. It should be of interest to develop nationwide standardized strategies in order to improve and make uniform patient management.

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