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Effects of ultrasound-guided percutaneus neuromodulation in chronic shoulder pain in the hemiplegic patient. A case series

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Abstract	Background and Aims Hemiplegic shoulder pain (HSP) is a very common complaint among patients affected with cerebrovascular accident (CVA). This type of pathology is related with a neuropathic type of pain. Ultrasound-guided percutaneous neuro- modulation (US-guided PNM) is a physical therapy technique consisting of low- frequency electric stimulation of peripheral nerves via an acupuncture needle under ultrasound guidance. Because of the relationship between the suprascapular and axillary nerves with the shoulder joint, these represent the target structure for US- guided PNM. This study aimed to observe the effects of the application of US-guided PNM in HSP and to evaluate the possible changes in variables such as pain, functionality and quality of life of patients. Material and Methods This study was a case series. Patients with HSP were selected
	between the months of April and June 2018 in the Hospital of Denia. Seven patients were interviewed, after which the experimental group was reduced to five participants. These patients received weekly PNM treatment during three weeks. The parameters used were: frequency (10Hz), pulse width (250μ s), intensity (pain threshold) and time (10 min). The main clinical variables examined were pain, measured using the VAS scale, functionality, via the SPADI scale and physical and mental components of quality of life using the SF12 scale.
	Results The results of the VAS scale, expressed as the mean (SD) was 7.2 (1.3) pre- intervention; 3.6 (0.89) post-intervention week 3; and 4 (1.23) post intervention week
Keywords	5. The results revealed significant changes in the VAS scale which continued until
 ultrasound-guided percutaneous neuromodulation 	week 5 (p < 0.05). The mean obtained in the SPADI scale, expressed as the mean (SD) was 72.4 (1.3) pre-intervention, 55.7 (19.72) post-intervention in week 3 and 59.8 (20.66) post intervention week 5. The changes observed between the pre-intervention
 invasive physical 	sample and the measurements obtained in week 3 and 5 were significant (p $<$ 0.05).
therapy	Conclusions The US-guided PNM technique was effective in the sample under study
 chronic shoulder pain 	for improvement of the patient's sensation of pain. The US-guided PNM technique
 hemiplegia 	improves functionality of HSP, as well as the emotional status of patients.

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