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DRY NEEDLING FOR TREATING MYOFASCIAL TRIGGER POINTS MAY AUGMENT μ -ENDORPHIN LEVELS OF PROXIMAL SKELETAL MUSCLES IN RABBITS

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Purpose: The remote effectiveness of dry needling therapy for pain control of myofascial trigger points (MTrPs) has been demonstrated in many clinical studies. The opioid peptide, μ -endorphin, has been shown to involve in analgesia. However, little is known about the biochemicals of antinociception affected by the dry needling of a distal MTrPs. This study aimed to investigate the remote effect of dry needling on the levels of μ -endorphin, substance p (SP), and inducible nitric oxide synthase (iNOS) of the proximal muscles. **Materials and Methods:** New Zealand rabbits (2.5–3.0 kg) were used in this study. Animals received dry needling or sham operation at myofascial trigger spots (MTrSs, similar to human MTrPs) of a unilateral gastrocnemius with duration of 3 min per day for 1 and 5 consecutive days. Western blot analysis was performed to determine the protein levels of μ -endorphin, SP and iNOS in bilateral biceps femoris muscles containing MTrSs. **Results:** The protein levels of μ -endorphin, SP and iNOS were not changed by 1 dosage of dry needling. However, 5 dosages of dry needling markedly increased the μ -endorphin and decreased iNOS in bilateral biceps femoris ipsilaterally and contralaterally to dry needling site after five dosages of dry needling. No significant difference in SP levels was found between dry needling and sham operation. **Conclusion:** The antinociception effect of dry needling to distal MTrP may involve in modulating the μ -endorphin of endogenous opioid system.

0521PP030

KLIPEL TRENAUNAY SYNDROME IN 3 MONTHS BABY: A CASE REPORT

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Purpose: To describe the rehabilitation management of a rare case, Klippel trenaunay syndrome (KTS). **Materials and Methods:** A 3-month-old baby girl with KTS and motoric delayed, with complaint of delay ability to raise her head. She had KTS's triad of right hemihypertrophy, port wine appearances on several parts of the body and varicose vein in her limb. Another finding was the lack of hearing function. There was Corpus Callosum hypoplasia from MRI. This syndrome revealed hypertrophy symptom which usually affected the limb from one side of the body. There had been many theories for etiology, including abnormalities in vascular or lymphatic flow and chromosom abnormalities. In addition, Corpus Callosum hypoplasia, which is detected on MRI, could play a role in delaying motor milestone achievement. Rehabilitation program consists of head control facilitation, audio stimulation and manual lymph drainage. Follow up include regular evaluations for growth and development, hemihypertrophy measurement and functioning. Psychological supported were given to the parents with educations about the disorder, home programs and rehabilitation planning. **Results:** After 2 months of rehabilitation programs and home exercises, she has a better control of her head and improvement in her hearing ability but yet still encounter mobility for rolling by herself. Right hemihypertrophy was quite distinct her face and extremities. Corrective shoes might be necessary by the time she starts standing. Her mother accepted the conditions and will try to achieve appropriate goals by stimulating her child regularly. **Conclusion:** Comprehensive rehabilitation management can limit physical deformity, achieve optimal developmental milestone and support parents to arrange the best management for the child's future.

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ABOVE KNEE AMPUTATION AND LUNG METASTATIC OSTEOSARCOMA: A PALLIATIVE REHABILITATION CASE REPORT

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Purpose: To present rehabilitation intervention to a girl with post above knee amputation and lung metastatic due to osteosarcoma. **Materials and Methods:** Case report of 18-year-old tailor girl with history post above knee amputation because of left distal femur osteosarcoma that he suffered 8 months before she came to our outpatient rehabilitation unit. She wants to walk with limb prothesa, but from physical examination there were general weakness, profuse cough, dyspneu and anemia. Radiologic examination revealed multiple nodule lesions of both lungs. Then, she hospitalized for general reconditioning and palliative chemotherapy, finally she postponed to use limb prothesa. We also give rehabilitation program to optimized breathing, increase cardiopulmonary endurance, strengthen stump, increased quality of life and advised the patient/family in regard to appropriate care as a strategy for palliative rehabilitation. The comprehensive rehabilitation program continued at outpatient rehabilitation unit. **Results:** After serial physical therapy, there were increased of count test and chest expansion, strength of left hip, Barthel index and patient return to her previous activity. **Conclusion:** Physical Medicine and Rehabilitation play an important role in palliative management of patient with terminal stage of osteosarcoma.

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NEW ULTRASOUND METHOD IN THE DIAGNOSIS OF FROZEN SHOULDER

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Purpose: To evaluate the feasibility of the new ultrasound method in the diagnosis of frozen shoulder. **Materials and Methods:** Eightyfour patients were recruited. All the patients had unilateral shoulder pain and were diagnosed frozen shoulder with frozen stage. Clinical evaluation was assessed using passive range of flexion, abduction, internal and external rotations, Cyriax's severity stage of the frozen shoulder, and visual analogue scale (VAS) score. A physiatrist performed ultrasound and arthrography together. The distance between coracoid process and lesser tuberosity at the end range of external rotation was measured using ultrasound. Two measurements were taken for intra-rater reliability. The external rotation (ER) ratio was determined as the ratio of the mean distance in the affected side divided by that in the unaffected side. The glenohumeral joint volume was measured using single contrast arthrography. **Results:** The mean distances of affected and unaffected shoulders were 30.1 mm and 41.7 mm. Intra-class correlation coefficients of the repeated measurements in the affected and unaffected shoulders were 0.978 and 0.947. The ER ratio was significantly correlated with the range of external rotation (mean 41.3°, $r=0.589$, $p<0.01$), internal rotation (mean 21.9°, $r=0.405$, $p<0.01$), flexion (mean 121.0°, $r=0.325$, $p<0.01$) and abduction (mean 117.6°, $r=0.379$, $p<0.01$), with the joint volume (mean 10.6 ml, $r=0.316$, $p<0.01$), and with Cyriax's severity stages (mean 2.7, $r=0.286$, $p<0.01$). However, the ER ratio was not correlated with VAS score. **Conclusion:** The new ultrasound method, the ER ratio, can be a useful imaging in diagnosing frozen shoulder by objectively measuring the limitation of motion of shoulder.