

A New Tender Point on the Plantar Arch in Primary Juvenile Fibromyalgia: A Potential Point to be Considered.

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Background/Purpose: Juvenile Primary Fibromyalgia Syndrome (JPFS)

is a chronic and complex musculoskeletal disorder that may cause diffuse pain accompanied by defined tender points. Diagnostic dilemmas may frequently arise since 10 of these tender points are located on the cervical and shoulder area (ACR'90 Fibromyalgia Classification Criteria). For this reason, a tender point reproducible in a different area may be an advantage on the diagnosis of JPFS. The objective of this study was to assess sensitivity and specificity of a tender point located infero-medially in the distal third of the longitudinal plantar arch in JPFS patients and healthy controls.

Methods: The study included consecutive patients with JPFS (ACR'90) and healthy controls matched by age and gender. Informed consent was obtained for all study subjects. Pairs of the proposed point, those accepted by the ACR and control points (biceps, quadriceps and lateral foot area) were assessed with digital pressure of approximately 4 Kg/cm² by previously trained rheumatologist and pediatrician in both subject groups. Sensitivity and specificity of all tender and control points examined were compared by unpaired t-test, ROC curve and the McNemar test.

Results: Out of a total of 22 JPFS patients, 19 were female (F) and 3 were male (M), ages between 13 and 17 (14_0.30). The healthy control group included 27 high school students of similar age (14_0.23) and gender (21 F and 6 M) than the patients. The new plantar point was positive in 20/22 JPFS patients (90.9%), bilaterally in 20 and unilaterally in 2 patients. None of the control group subjects had pain on the new plantar point. Sensitivity and specificity for the new tender point were 90.9% and 96.4% respectively (positive LR of 25.25, ROC Area _ 0.937 with CI 95% _0.856 –1.00). Several ACR tender points presented lower sensitivity and/or specificity than the new plantar point: occiput was positive in 19/22 (86.4%) JPFS patients and in 6/27 (22%) of the control group, 86.4% sensitivity, 75% specificity (positive LR of 3.46 ROC Area _ 0.807 with CI 95% _0.68 – 0.934), supraspinatus was positive in 20/22 (90.9%) JPFS patients and in 5/27 (18%) of the control group, 90.9% sensitivity, 78.6% specificity (positive LR of 4.25 (ROC Area _ 0.847 with CI 95% _0.733 – 0.962), second rib was positive in 19/22 (86.4%) JPFS patients and in 1/27 (3.7%) of the control group, 86.4% sensitivity, 92.9% specificity (positive LR of 12.17 ROC Area _ 0.896 with CI 95% _0.795 – 0.997), lateral epicondyle was positive in 19/22 (86.4%) JPFS and in 1/27 (3.7%) of the control group, 86.4 sensitivity, 92.9 specificity (positive LR of 12.17 ROC Area _ 0.896 with CI 95% _0.795 – 0.997). In patients with JPFS, control points were negative in 17/19 patients (89%). The plantar site had good concordance in JPFS patients with tender sites such as occiput, trapezius, supraspinatus, lateral epicondyle (test McNemar, p 0.12).

Conclusion: The plantar arch tender point has high sensitivity and specificity in patients with JPFS. Additionally, it presented higher specificity than other recognized tender points. Further investigations on this novel site appear warranted.