

[FRI0232] ARTICULAR SONOGRAPHY IN HEALTHY INDIVIDUALS: COMPARISON AMONG SMALL, MEDIUM AND LARGE JOINTS

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Background: Standardization of articular ultrasound is still needed, thus the importance of studies that help to understand the articular anatomy in a significant sample of healthy individuals.

Objectives: To identify which recesses in each joint's size group (small, medium or large joints) have the highest sonographic measurements in a sample of healthy volunteers.

Methods: A cross-sectional study was conducted on a sample of 130 asymptomatic healthy adults aged between 18 to 80 years. Quantitative measurements of synovial recess (QSR) (mm) and semiquantitative measurements of synovial hypertrophy (SSH), Power Doppler (SPD) and bone erosion (SBE) (score 0-3) were performed in small - volar and dorsal 2-3 metacarpophalangeal (MCP), dorsal and volar 2-3 proximal interphalangeal (PIP) of the hands, dorsal 1st, 2nd and 5th metatarsophalangeal (MTP); medium - radiocarpal, ulnocarpal, distal radioulnar joint, coronoid and olecranon fossa, tibiotalar, subtalar and talonavicular recesses; and large - axillary and posterior recesses of the shoulder, knee and hip joints. Measurements were compared to identify which recesses had the highest measurements within each joint's size group (small, medium or large). A My Lab 60 Xvision ultrasound machine (Esaote, Biomedical - Geneva, Italy) by means of a 6-18 MHz linear array transducer was used. Mann-Whitney U and Kruskal-Wallis non-parametrical tests and Chi squared or Fisher's Exact tests were used to compare continuous and categorical data, respectively. Significant p value was set at 5%.

Results: 6.500 joint recesses were studied in 130 healthy adults; mean age 44.84 years, 76.9% women, 62.3% white. Highest measurements of QSR were found in 2nd MTF (2.33 ± 0.83 mm) and 1st MTP ($2.14 \text{mm} \pm 0.84$) ($p < 0,001$), talonavicular recess (2.67 ± 1.10 mm) ($p < 0,001$) and hip (6.16 ± 1.10 mm) ($p < 0,001$), respectively for the small, medium and large joints. The worst scores of the semiquantitative measurements were found: for SSH (scores 2 and 3) - 1st and 2nd MTP ($p < 0,001$), talonavicular recess ($p < 0,001$); hip and knee joints ($p < 0,001$), respectively for small, medium and large joints; for SPD (scores 1, 2 and 3) - 1st MTP ($p < 0,001$) and radiocarpal recess ($p < 0,001$), respectively for small and medium joints; for SBE (scores 2 and 3) - radiocarpal and ulnocarpal recesses ($p < 0,001$) and posterior recess of the glenohumeral joint ($p < 0,001$), respectively for small and medium joints. There were no statistical differences among recesses in large joints for SPD and in small joints for SBE.

Conclusions: The highest quantitative measurements were observed in 1st and 2nd MTP, talonavicular and hip joints. For semiquantitative measurements, the recesses that showed repeatedly the worst scores were the 1st MTP and the radiocarpal recess.

References:

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