Value of Ultrasonography Parotid Glands in Patients with Suspected Primary Sjogren’s Syndrome.

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Background/Purpose: Primary Sjogren’s syndrome (pSS) is an autoimmune disorder characterised by chronic lymphocytic infiltration of exocrine tissues. Currently new non-invasive techniques are being continuously introduced as a diagnosis tool. Ultrasonography (US) of salivary glands in these patients merits special interest as a rapid, inexpensive, non-radiating and widely accessible modality.

Methods: The aim of the study is to assess the diagnostic value of ultrasonography (US) in those patients who underwent minor salivary gland biopsy (MSGB) by suspected Primary Sjögren Syndrome (pSS).

All patients underwent bilateral parotid glands US and MSGB. The same expert blinded examiner performed the US. All patients were scanned using an MyLab 25 US scanner (Esaote Italy) with a 10–18 MHz linear-array transducer. The following parameters were assessed: homogeneity, hypoechogenic areas, hyperechogenic foci, Power Doppler (PD) and margins graded from 0 to 2 (0: well-defined, 1: ill-defined, 2: blurred) and gland size was measured. The gold standard was the MSGB. According to the quantity and type of US variables, we determined the following cut-off values (at least unilateral parotid finding) A: presence or absence of heterogeneity on unilateral or bilateral parotid glands B: presence or absence of any variable (not more than one and excluding heterogeneity) on unilateral or bilateral parotid glands C: presence or absence of three or more variables (any variable) on unilateral or bilateral parotid glands.

Results: We included a total of forty-five biopsies (32 negative and 13 positive). 95.56% were female, the median symptoms length was 2 years (IQR 1–7), no differences were observed between both groups. According to A cut-off values had 30.77 % sensitivity (S) (CI 17.28–44.25), 78.13% specificity (Sp) (CI 66.05–90.20), 36.36 % positive predictive value (PPV) (22.31–50.42), 73.53% Negative Predictive Value (NPV) (CI 60.64–86.42), likelihood ratio (LR) 1.41 (CI 0.49–4.0), and the area under the curve (AUC) 0.54 (CI 0.40–0.69). B findings showed 46.15% S (CI 41.59–60.72), 68.75% Sp (CI 55.21–82.29), 37.50% PPV (CI 23.36–51.64), 75.86% NPV (CI 63.86–88.36%), LR 1.48 (CI 0.68–3.22), AUC 0.57 (CI 0.41–0.74).

We observed C findings with a 30.77% of Sensitivity (CI 17.28–44.25), 90.63% Specificity (CI 82.11–99.14), 57.14% PPV (CI 42.78–71.60), 31% NPV (CI 63.89–88.74), LR 3.28 (CI 0.85–12.67), AUC 0.61(CI 0.47–0.77). Bilateral parotid US showed an AUC similar to B findings.

Conclusion: We considered that C findings are the best cut-off values because it demonstrated greater specificity and slightly better AUC. Nevertheless, in our study the US of parotid gland not prove to be an appropriate diagnostic tool to replace the MSGB.