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 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, hypoechoic
areas, hyperechoic 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%
NVP (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.