2009 Research Days Abstract Form – Department of Ophthalmology – UNIFESP/EPM

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED):

Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

x☐ **Paper**
☐ Poster
☐ FAST Paper

4. The signature of the First (Presenting) Author (REQUIRED) acting as the authorized agent for all authors, hereby certifies that any research reported was conducted in compliance with the Declaration of Helsinki and the 'UNIFESP Ethical Committee"
Liliana Cruz
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Scientific Section Descriptions (two-letter code):

(BE) OCULAR BIOENGINEERING
(CO) CORNEA AND EXTERNAL DISEASE
(CA) CATARACT
(EF) ELECTROPHYSIOLOGY
(EP) EPIDEMIOLOGY
(EX) EXPERIMENTAL SURGERY
(X) GLAUCOMA
(LA) LABORATORY
(LS) LACRIMAL SYSTEM
(LV) LOW VISION
(NO) NEURO-OPHTHALMOLOGY
(OR) ORBIT
(PL) OCULAR PLASTIC SURGERY
(PH) PHARMACOLOGY
(RE) RETINA AND VITREOUS
(RS) REFRACTIVE SURGERY
(RX) REFRACTION-CONTACT LENSES
(ST) STRABISMUS
(TR) TRAUMA
(TU) TUMORS AND PATHOLOGY
(UV) UVEITIS
(US) OCULAR ULTRASOUND

Deadline: Oct 12, 2009

FORMAT:
Abstract should contain:
Title
Author, Co-authors (maximum 6), Purpose, Methods, Results, Conclusion.

Poster guidelines:
ARVO Abstract Book (1.10 x 1.70m)

23. FIRST (PRESENTING) AUTHOR (REQUIRED):
Must be the author listed first in abstract body.

( ) R1 ( ) R2 ( ) R3 ( ) PIBIC
( ) PG0 (x) PG1 ( ) Fellow ( ) Technician

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CFP Number:

B MODE 10MHZ AND 20MHZ ULTRASONOGRAPHY IN DETECTING EVIDENCED OPTICAL CUP DISK AND OPTIC NERVE PARAMETERS MEASURED BY OCT AND HRT ON ITS DIAGNOSTIC ABILITY

Cruz LMAB; Higa F; Pires L; Silva R; Quedas E; Paranhos A; Allemann N; Mello PAA.

Purpose : Evaluate which are the morphological characteristics of the optic nerve head that determine a higher or minor capacity of the US to identify a provable excavation. **Methods:** 26 normal patients and 42 patients that suffer from glaucoma were included. Patients with opaque media, low visual field reliability, retinal alterations and with refraction errors over 6 diopters were excluded. The participants were submitted to the examinations of automized perimetry, ocular ultrasonography (10 and 20 MHz), stereophotography of the optical nerve, optical coherence tomography (OCT), confocal laser scanning ophthalmoscopy (HRT) and fundus biomicroscopy. Individual measurements of the optic disk were analysed. The optic nerve was considered suspect of glaucoma when a papillar excavation was higher or equal to 0.7 dp. To evaluate the concordance between the US and the sensitivity and specificity of the clinical examination the *Kappa* coefficient was determined. To observe the relationship between the values of the HRT and OCT examinations as well as the success of the US, the logistic regression was done and the generalized ***estimating equations*** – GEE were used to determine the dependence between the eyes. Two types of answers were considered : True Positive (TP) i.e. excavation evidenced by the US and medium stereophoto values >0.7 dp.; True Negative (TN), i.e. excavation not proven by US and medium stereophoto values <0.7 dp. **Results**: The US 20 MHz classified the images of the papillar excavation with more evidence than the US 10 MHz ($p>0.001$ for vertical and $p=0.008$ for horizontal). In all the variations of the ultrasound (10 MHz or 20 MHz, vertical or horizontal) the proportion of provable excavations was significantly higher in the eyes of the patients with glaucoma ($p<0.001$). A higher sensitivity for the probe US 20 MHz (0.92) was observed, but with a higher number of false positives (30 %). In the two axes the 20 MHz probe could distinguish the provable excavations better than the 10MHz probe. The measurements of the HRT and OCT parameters are related to the probability of the US success, as much to the positive side as to the negative side. **Conclusion:** The 20MHz probe permitted the better classification of the suspect glaucomatous excavations compared to the 10 MHz probe in both axes, especially in the vertical axis; furthermore it had a higher sensitivity compared to the 10 MHz probe. The measurements of the HRT and OCT were related to the US. The probability of success was good for the positive and negative aspects.