

THE BENEFITS OF 20 MHZ HIGH FREQUENCY SECTOR PROBE ECHOGRAPHY IN THE DIAGNOSIS OF MACULAR PATHOLOGY

TOMIHAMA FERNÁNDEZ, MALENA; QUEZADA GÓMEZ, GABRIELA; CÁCEDA SÁNCHEZ, ELVA; DE LA TORRE ESTREMADOYRO, MARIO

INTRODUCTION

Macular pathology represents a high proportion of blindness in the world. In Peru macula conditions are under-diagnosed due to a low index of suspicion in addition to a lack of equipment. The recent introduction of the 20 MHz high frequency sector ultrasound probe enables the diagnosis of macular pathology that was previously not possible with other techniques and is invaluable in special circumstances such as in patients with neurological deficits media opacities, high myopia, young children and those unable to fixate. The advantages are that this is a non invasive procedure providing high resolution images and with a low cost.

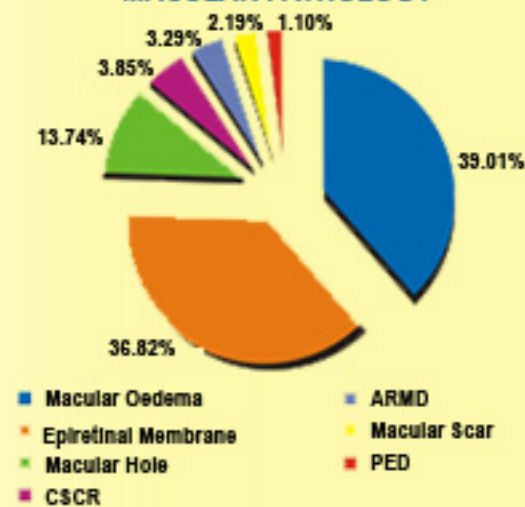
MATERIAL AND METHODS

A prospective, descriptive study was performed from 2nd January 2008 to 31 August 2008. 2450 consecutive patients with dense cataract that were referred to the echography service at the National Institute of Ophthalmology, Peru were evaluated for macular pathology with the 20 MHz High frequency sector probe in addition to the standard evaluation with the 10MHz probe. Each examination was performed with topical anaesthesia with 0.5% proxymethacaine (Alcaïne) and a conduction gel was used with subsequent direct contact of the probe with the globe. The echography equipment used was the CineScan S (Quantel Medical) the high frequency HF 20 MHz probe (Quantel Medical).

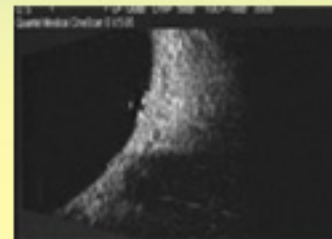
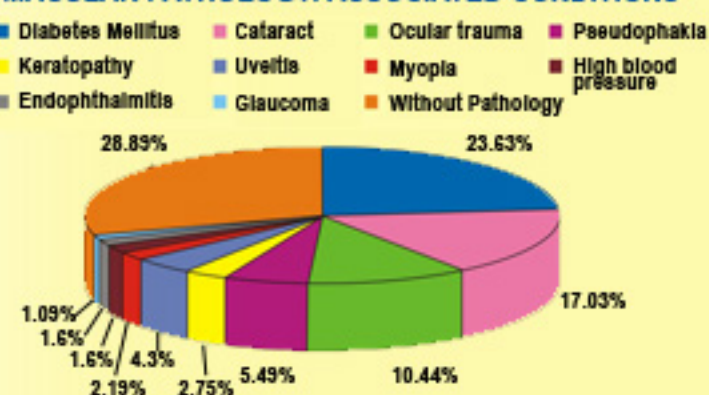
RESULTS

The incidence of macular pathology was 7.48% (n=182).

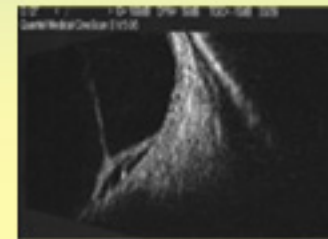
MACULAR PATHOLOGY



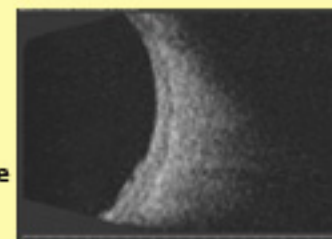
MACULAR PATHOLOGY: ASSOCIATED CONDITIONS



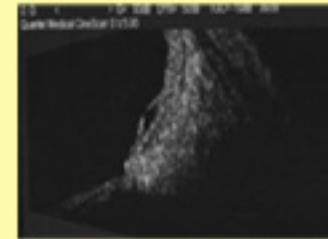
MACULAR HOLE WITH OPERCULUM



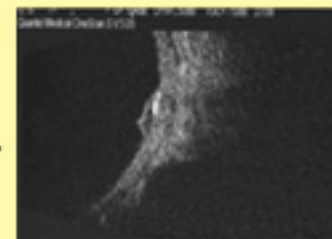
MACULAR OEDEMA WITH MEMBRANE TRACTION



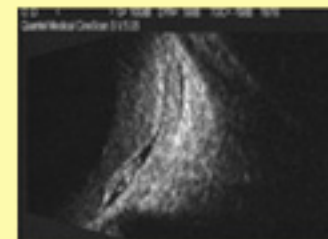
MACULAR HOLE



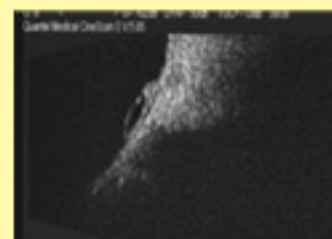
MACULAR HOLE WITH DETACHMENT



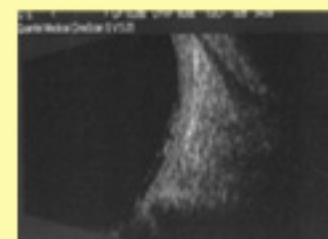
PIGMENT EPITHELIUM DETACHMENT



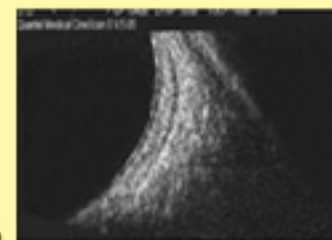
SUBMACULAR HAEMORRHAGE



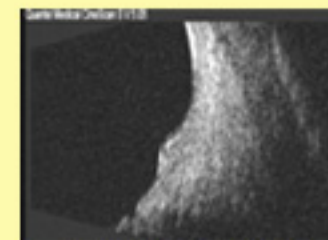
SUBMACULAR HAEMORRHAGE AND MACULAR OEDEMA



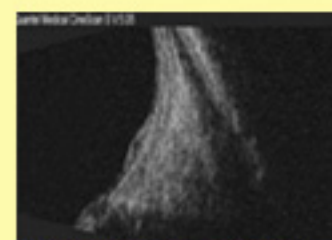
MACULAR HOLE AND EPIRETINAL MEMBRANE



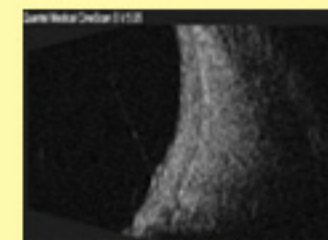
EPIRETINAL MEMBRANE



AGE RELATED MACULAR DEGENERATION



CISTOID MACULAR OEDEMA



MACULAR HOLE 1A

CONCLUSION

2450 consecutive patients that had routine echography performed had the macula evaluated with 20 MHz long focus probe. All examinations were performed without complications. Unlike other methods of examination, media opacities do not preclude echography. In our series the percentage of patients with macular pathology diagnosed on routine examination was 7.43%, which is higher than that reported in Latin America. We suspect that the reason for this is under-diagnosis as most studies have been performed with the 10MHz probe which is less sensitive in detecting macular pathology.

Macular oedema was the most frequent diagnosis and was seen in 39.01% with macular pathology. Of these, 42.42% were known to have Diabetes Mellitus. We believe that in this group of patients, careful evaluation of the macula is of particular importance and has implications for visual prognosis.

Epiretinal membrane was found in 36.82% of patients. This was a frequent finding in patients with no significant past medical or ocular history, suggesting that epiretinal membrane is not always associated with previous ocular inflammation or surgery as described in the literature.

Macular holes were identified in 13.74% of patients, including those at stage Ia. This in addition the detection of other posterior pole pathology, such as epiretinal membrane, vitreoretinal traction syndrome were also identified without difficulty, confirming that the 20MHz probe is an important diagnostic tool.

RECOMMENDATIONS

We highly recommend that the high frequency 20MHz probe should be used routinely in the evaluation of patients with dense cataract and no or limited fundal view and feel that this may be invaluable in the early diagnosis of macular pathology;