# Diagnosis of Ocular disease in Ibadan by Ultrasound

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**Summary**

**15 patients with ocular disease, in whom views of posterior segment of the eyes could not be obtained underwent ultrasonography of the eyes to aid in the diagnosis and further management of the patients. In some cases the ultrasound was then compared with the histological diagnosis when the eye was removed and in other cases to the ophthalmoscopic examination when a better view of the posterior segment could be obtained. This was done as a pilot study to ascertain the level of accuracy of our ultrasonic diagnosis and how much it could be depended upon for the very important decision of removal of the eye when indicated.**

**Key Words:** ***Ultrasonography , Eye diseases.***

**Résumé**

15 patients atteints de la maladie oculaire dans laquelle les vues du segment postérieur de l'oeil ne pouvaient être obtenues sous l'ultra Sonographie de L'oeil afin d'aider la diagnose et d'autres renseignements Complé mentaires des patients.

Dans Certains Cas, l'ultrason était alors Comparé á la diagnose histologie quand l'oeil était enlevé et dans d'autres cas á l'intérieur de l'oeil avec l'opthalmoscope quand une meilleure vue du segment postérieur pouvait être obtenue. Cela était fait comme une étude pilote pour S'assurer du niveau de la Correction de notre diagnose ultrasonique et combien cela pouvait être dépendu de la décision importante de la Suppression de l'oeil quand cela réclame un certain traitment.

## Introduction

Ophthalmic ultrasonography has been in existence for many years in the developed world but in developing countries like ours, it is only in the last few years that it has become increasingly useful for diagnosis and management of ocular diseases. When ophthalmic ultrasonography was first started in this unit of a tertiary institution, it was decided to correlate diagnosis from ultrasound with histological diagnosis or ophthalmoscopic diagnosis when a better view of the posterior segment of the eye could be obtained. This was to ascertain the level of accuracy of our ultrasonic diagnosis and how much it could be depended upon for that very important decision, "To remove or not to remove the eye". Following this study, ophthalmic ultrasound has become more widely used in this unit for both ocular and orbital diseases.

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## Materials and Methods

15 patients who either had histological diagnosis of the eye which was removed for suspected malignancy or in whom at a later date it was possible to view the posterior segment were included in the study. They were part of the group of patients who had ultrasonography performed on their eyes, at the initial stage in which this unit commenced ultrasonography in collaboration with a clinic outside this tertiary hospital, where the doctor had a special interest in ophthalmic ultrasonography. Because a high frequency transducer used in developed countries was not available, a 5MHz transducer was used.

**Table I Age Distribution**

| Age (years) | Number of patients |
|---|---|
| 1 – 10 | 6 |
| 10 – 20 | 6 |
| 20 – 30 | 2 |
| 40 – 50 | 1 |

## Results

15 patients were included in the study. They comprised 8 females and 7 males showing no sex predilection. The age range was 1-50 years, the youngest being 1 year old. Table I shows the age distribution. Table II shows the summary of correlating the diagnosis between ultrasound and histological/ophthalmoscopic diagnosis. 11 out of the 15 cases (73%) had accurate ultrasound diagnosis which correlated exactly with the histology on the eye removed or ophthalmoscopy of the posterior segment when a better view was obtained. The patient with the intumescent cataract and secondary glaucoma had the cataract extracted by the intercapsular method but did not

**Table 2 Correlating Diagnosis**

| Age (years) | Ultrasound diagnosis | Histological diagnosis | Ophthalmoscopic diagnosis |
|---|---|---|---|
| 1 | Retinoblastoma | Retinoblastoma | — |
| 11 | Cystic mass in orbit? Mucocoele | Mucocoele | – |
| 25 | Intraocular neoplasm | Panophthalmitis | – |
| 25 | Vitreous haemorrhage | – | Vitreous haemorrhage |
| 16 | Organised vitreous haemorrhage | – | Endophthalmitis |
| 10 | Bilateral retinal detachment | – | Bilateral retinal detachment |
| 8 | Debris in vitreous | – | Panophthalmitis |
| 18 | Complete retinal detachment | – | Total exudate retinal detachment |
| 50 | Thick lens | – | Intumescent cataract |
| 15 | Retinal detachment | – | Retinal detachment |
| 5 | Retinoblastoma | Retinoblastoma | – |
| 14 | Retinocular mass | – | Orbital cellulitis |
| 9 | Thick membrane on anterior vitreous | – | Total retinal detachment with cilliary membrane |
| 20 | Vitreous debris | – | Endophthalmitis |
| 1 | Miscrophthalmos | – | Microphthalmos |

regain good vision due to prolonged glaucoma. Figure 1 and 2 show ultrasonic photographs of two of the patients, one with vitreous haemorrhage and the other with an orbital extension of a mucocoele.

## Discussion

The use of ultrasound in the diagnosis and management of ocular disease is becoming more essential[1-4] especially in developing countries where CT Scanning and MRI are still difficult to come by.[5] The increasing use of ultrasound in ophthalmology in our unit prompted this study to find out the correlation between ultrasound diagnosis and the final diagnosis obtained at histology or at ophthalmology, when a better view of the posterior segment was obtained. From this study, there was 73% correlation between the two diagnosis. Only 4 patients (27%) did not have an accurate diagnosis at ultrasound. Out of the 4 patients, only one had an enucleation for an ultrasound diagnosis of an intraocular neoplasm, as no view of the posterior pole could be obtained. Histology later revealed a panophthalmitis. In this case, removal of the eye was not a regret as it could have been necessary anyway for a painful blind eye. Another patient was diagnosed as having organised vitreous haemorrhage which could be difficult to differentiate from debris of endophthalmitis. The other two patients had poor correlation between the ultrasound diagnosis and final diagnosis.

In our view, ophthalmic ultrasonography is becoming increasingly useful both for diagnosis and follow up management of our patients. In good hands, there is a high degree of correlation between ultrasound diagnosis and histological or ophthalmoscopic diagnosis when a better view of the posterior pole could be obtained.

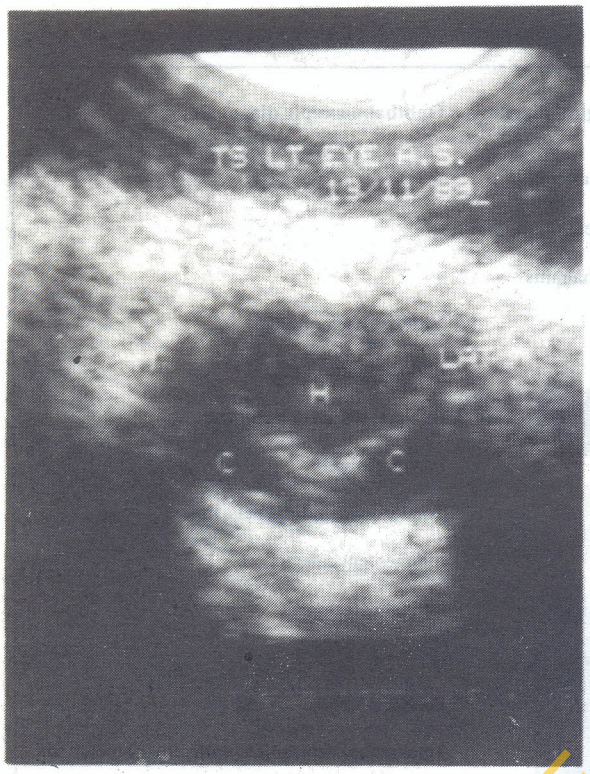

*Figure 1: Vitreous Haemorrhage*

*Figure 2: Orbital Extension of Mucocoele*



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