ULTRASONOGRAPHY FINDINGS IN RETINOPATHY OF PREMATURITY – A PILOT STUDY

BY

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MD (USM)

Dissertation Submitted In Partial Fulfilment Of The Requirement For The Degree Of Master Of Medicine

(OPHTHALMOLOGY)

SCHOOL OF MEDICAL SCIENCES

UNIVERSITI SAINS MALAYSIA

2010

ACKNOWLEDGEMENT

I would like to express my most sincere and deepest appreciation Associate Professor Dr. Wan Hazabbah Wan Hitam, the Head of Department of Ophthalmology, School of Medical Sciences of Universiti Sains Malaysia, for his unlimited support and guidance's throughout the duration of this study. His invaluable advices and constructive remarks have helped to succeed this dissertation.

I would also like to thank to my supervisor, Dr. Raja Azmi Mohd Noor, and our lecturers Dr Zunaina Embong and Dr Shatriah Ismail, for their excellent teaching and guidance throughout my study.

A special thank to Dr. Noramazlan Bin Ramli for his invaluable advice and ultrasound technique teaching and identifying the ROP ultrasound changes. I would like to thank the paediatric doctors and staff nurses that helping me to taking care the babies and giving me a full support in this study.

I would also like thank Dr. Zulkifli Abdul Ghani (the Head of Department of Ophthalmology of Hospital Raja Perempuan Zainab II) and Dr. Joseph Vijaya Alagaratnam (the Head of Department of Ophthalmology of Hospital Kuala Lumpur) and his excellent team (Dr Jamalia Rahmat and Dr Sunder Ramasamy) helping in support, guidance's, recruitment of patients and using the hospital's ultrasound facility.

Finally this dissertation could not be completed without the forbearance and support of my beloved wife, Siow Fam.

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ABSTRAK

Objektif:

1. Penghuraian mengenai tanda-tanda fundus mengikut peringkat ROP yang berlainan.
2. Penentuan tanda-tanda ultrasonographic B-scan di peringkat ROP yang berlainan.
3. Penentuan hubuangan antara tanda-tanda klinikal fundus dan tanda-tanda ultrasonographic B-scan di peringkat ROP yang berlainan.

Bentuk kajian: Kajian berasaskan deskriptif "kajian rentang".

Metodologi:

Sebanyak 90 mata daripada 47 pesakit yang mempunyai pelbagai peringkat ROP telah terpilih dalam kajian ini. Diagnosis ROP telah ditentukan dengan pemeriksaan oftalmoskopi. Selepas ini, pemeriksaan ultrasound akan dijalankan dalam tempoh 2 hari and diagnosis klinikal adalah tidak diketahui. Semasa pemeriksaan, mata subjek adalah tertutup dan diberi setitis ubat anestesia, seterusnya diperiksa dengan alat ultrasound 10 MHz. Dua belas meridian gambar yang mengikuti posisi arah jam telah diambil untuk setiap mata. Gambar-gambar tersebut telah menjalani penganalisaan and pengenalpastian tanda-tanda perubahan ultrasound di setiap peringkat ROP.

Keputusan:

Kajian ini terdapat seramai 37 mata di peringkat 1, 29 mata di peringkat 2, 18 mata di peringkat 3, 3 mata di peringkat 4 dan 5 masing-masing. Semua peringkat ROP telah dikaji dengan menggunakan ultrasound. Terdapat 91.9% mata peringkat 1 mempunyai tanda negatif, 9.1% mata peringkat 1 menunjkkan perubahan ultrasound peringkat 2. Pada peringkat 2, terdapat 58.6% mata menunjukkan perubahan ultrasound "shallow retinal thickening and ridge" , 41.4% mata peringkat 2 mempunyai tanda negative. 66.7% mata peringkat 3 menunjkkan perubahan ultrasound "broad retinal thickening and giant ridge" , 5.5% mata peringkat 3 menunjukkan perubahan ultrasound peringkat 2 dan 27.8% mempunyai tanda negatif. Pengenalpastian ultrasound semua mata pada peringkat 4 dan5 adalah baik. Hubung-kait perubahan klinikal dan perubahan ultrasound adalah kuat untuk semua peringkat ROP (Pearson $R = 0.83, p < 0.001$).

Kesimpulan:

Ciri-ciri ultrasound ROP boleh digunakan untuk mengkenal-pasti peringkat 3 dan ke atas. Peringkat 1 ROP mempunyai tanda ultrasound yang negatif. Hubung-kait yang tinggi antara perubahan klinikal dan perubahan ultrasound pada semua peringkat ROP.

ABSTRACT

Objective:

1. To describe the fundus findings in different stages of ROP.
2. To determine the ultrasonographic B-scan findings in different stages of ROP.
3. To determine the association between clinical fundus findings and ultrasonographic B-scan findings in different stages of ROP.

Design:

Descriptive cross sectional study.

Methodology:

A total of 90 eyes of 47 patients with different stages of ROP were recruited in this study. All patients' clinical diagnosis was established by ophthalmoscopic examination. The ultrasound examinations were performed within 2 days of ophthalmoscopic examination and clinical diagnosis was masked. All eyes were examined with 10 MHz ultrasound system with eye closed with instillation a drop of topical anaesthetic. A total of 12 meridians (position according to clock hour) images of each eye were taken. The images were analyzed and identified of different ultrasonic features indicative of ROP stages.

Results:

In this study, 37 eyes in Stage 1, 29 eyes in Stage 2, 18 eyes in Stage 3 and 3 eyes in Stage 4 and 5 respectively were recruited. All ultrasonography stages of ROP were studied. 91.1% of Stage 1 has negative sign. 3 eyes (9.1%) at stage 1 has stage 2 ultrasound findings. In Stage 2, 58.6% of eyes have ultrasound findings of "shallow retinal thickening and ridge" and 41.4% of eyes have negative sign. 66.7% of eyes at stage 3 showed "broad retinal thickening and giant ridge", 5.5% of stage 3 showed stage 2 ultrasound signs and 27.8% of stage 3 has negative sign. All eyes at stage 4 and 5 have an excellent ultrasonographic detection. The clinical findings were strongly correlated to ultrasound findings of all five stages in our study (Pearson $R = 0.83, p < 0.001$).

Conclusion:

Ultrasonography features in ROP are readily detected and described especially in Stage 3 ROP and above. Stage 1 ROP showed negative sign of ultrasound. There is high degree of correlation between the clinical features and ultrasonography features at all stages.