

(وَيَسْأَلُونَكَ عَنِ الرُّوحِ قُلِ  
الرُّوحُ مِنْ أَمْرِ رَبِّي وَمَا  
أُوتِيتُمْ مِنَ الْعِلْمِ إِلَّا قَلِيلًا )

صدق الله العظيم  
(الإسراء : 85 )

## Dedication

**To all who I love**

**And respect**

**My family**

**My friends**

**To all those who supporting  
me from the moment  
of idea to the moment of birth of this  
research.**

# Acknowledgement

First of all, my thanks and grace for the Allah for guiding and helping me finishing this research.

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# Abstract

This descriptive case study (practical study) was carried out at Ribat University Hospital in ultrasound department and labour room, in the period from October 2006 to February 2007.

The study aimed at assessing the performance of head circumference (HC) measurement in predicting gestational age as a predictor of menstrual age, and analysis of HC as an accurate indicator of gestational age (GA) assessment in relation to Bi parietal diameter (BPD) measurement.

The study included sixty Sudanese healthy pregnant women, aged between 17 and 40 years old, with different parity from primigravida to Para IX. All investigated as normal single fetus pregnancy, during GA from 38 - 40 weeks.

Using Germany siemens sonoline G20 real time U/S machine with convex transducer multi frequency using 3.5 or 5.0 MHz.

The study identified that HC measurement is essential method in determining GA in term pregnancy, it is more accurate than BPD measurement in cephalic presentation and in breech presentation. Also the study found that the parity of pregnancy and age of pregnant women had no effect in predicting GA.

The study recommended that the uses of HC measurement in third trimester and in cephalic and breech presentation is essential method in determining the GA.

# ملخص الأطروحة

هذه الدراسة الوصفية (دراسة عملية) أجريت بمستشفى الرباط الجامعى فى قسم الموجات الصوتية وغرفة الولادة، فى الفترة من أكتوبر 2006 إلى فبراير 2007 .

هدفت الدراسة لتقييم مدى دقة استعمال قياس محيط رأس الجنين لتحديد عمره بالرجوع الى تاريخ أول يوم من نزول أبردورة شهرية، وتحليل قياسات محيط رأس الجنين كطريقة فعالة فى تحديد عمره مقارنة بقياس قطر العظمين الجداريين .

شملت الدراسة عدد ستين امرأة سودانية حامل بصحة تامة، فى الفئة العمرية ما بين 17 الى 40 سنة، فى حالات حمل مختلفة شملت من هن بكريات الي ذوات الحمل التاسع . جميع الحوامل كن ذوات حمل صحيح واحد خالي من التشوهات والعيوب الخلقية وتفاوتت فترة أحمالهن من 38إلى 40إسبوع.

تم استخدام جهاز موجات صوتية من شركة سيمنز الالمانية نموذج ج 20 ، بإستعمال مبدل طاقة مخروطي الشكل متعدد الترددات، تم استعمال 3.5 أو 5 ميغاهيرز.

أوجدت الدراسة أن قياس محيط رأس الجنين يعتبر طريقة أساسية فى تحديد عمره فى فترة الحمل الأخيرة، وهى أكثر دقة من قياس قطر العظمين الجداريين عند إستعمالها عند وضع الجنين الرأسي ووضع الجنين المقعدّ المقعد. أيضا أوجدت الدراسة أن عدد مرات الحمل وعمر المرأة الحامل ليس له تأثير فى تحديد عمر الجنين.

أوصت الدراسة بإستعمال قياس محيط رأس الجنين لتحديد عمره كطريقة أساسية فى تحديد عمره فى فترة الحمل

الاحيرة و عند وضع الجنين الرأسي والمقعد كطريقة أساسية في  
تحديد عمره.

## Abbreviations

- 1- ABS : Amniotic band syndrome.
- 2- AC : Abdominal circumference.
- 3- ACC : Agenesis of the corpus callosum.
- 4- AS : Aqueduct of sylvius.
- 5- BPD : Biparietal diameter.
- 6- CB : Cerebrum.
- 7- CC : Corpus callosum.
- 8- CD : Continuous wave Doppler.
- 9- CMV : Cytomegalovirus.
- 10- CNS : Central nervous system.
- 11- CP : Choroid plexus.
- 12- CPC : Choroid plexus cysts.
- 13- CRL : Crown rum length.
- 14- CSF : Cerebrospinal fluid.
- 15- CSP : Cavum septi pellucidi.
- 16- DWM: Dandy Walker Malformation.
- 17- FL : Femur length.
- 18- GA : Gestational age.
- 19- HC : Head circumference.
- 20- IUGR : Intera uterine growth retardation.

- 21- LBWC : Limbo body-wall complex.
- 22- LFD : Large for date.
- 23- LMP : Last menstrual period.
- 24- Me : Medulla.
- 25- MHz : Mega hertz.
- 26- MI : Massa intermedia.
- 27- NTD's: Neural tube defects.
- 28- OFD : Occipito frontal diameter.
- 29- Po : Pons.
- 30- SD : Stander deviation.
- 31- SFD : Small for date.
- 32- Su : Sulcus.
- 33- U/S : Ultrasound.
- 34- VC : Vermis cerebellum.
- 35- 3V : Third ventricle.
- 36- 4V : Fourth ventricle.

# Contents

## **Subject**

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