# بسم الله الرحمن الرحيم

# **Sudan University of Science and Technology**College of Graduate studies



# Measurement of Placental Thickness by Ultrasound in the third trimester

قياس سُمك المشيمة بالموجات فوق الصوتية في الحمل الثلث الأخير من الحمل

A thesis submitted in Partial fulfillment for the requirements of the award of M.Sc in Medical Diagnostic Ultrasound

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October - 2008

## بسم الله الرحمن الرحيم

# قال تعالى:

((ولاتقف ماليس لك به علم أن السمع والبصر والفؤاد كل أولك كان عنه مسئولا))

(صدق الله العظيم)

سورة الإسراء الآية (35)

# Dedication

To the soul of my mother

To the beloved father

To my brothers and sisters

.To my wife and son

#### **Acknowledgement:**

Praise is to ALLAH, who blessed me with knowledge and enable me to write this study. My sincere gratitude to Dr. Alsafi Ahmed Abdallah, who provide me the most precious advice and appropriate guidance not only for this study as a supervisor, but also through his interesting lectures and practical guidance. I'm thankful to Dr. Abbas Alwasela (consultant obstetrician) for his continuous help and support. I would like to knowledge and thank my friend Mustafa Mohammed Abd almageed for his encouragement and support. I must pay my especial gratitude to my wife for her help during this study. The honorable thanks to my family for their continuous support. My special thanks to Mr. Atif Abdalaziz and Miss Maryam Yousif who participated in typing this study. Finally, I'm of course, thankful to Dr. Mustafa Zuhair and all students in our batch for their assistance.

YOUSIF HAMMAD HAMDEEN HAMMAD – ELNOHOUD September 2008

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#### :Abbreviation

.Abbi eviation	
Abbreviation	Stand for
AC	.Abdominal circumference
APH	.Antepartum Hemorrhage
BPD	Biparietal Diameter
CD	.Color Doppler
CM	.Centimeter
CNS	.central Nervous System
CRL	.Crown Rump Length
C-s	.Cesarean Section
EVS	.Endovaginal Sonography
FL	.Femur Length
FMC	.Focal Myometrial Contraction
GA	.Gestational Age
G	.Gram
HC	.Head Circumference
HCG	.Human Chorionic Gonadotropin
HCS	Human Chorionic Somatomammotropi
IUGR	.Intrauterine Growth Retardation
LMP	.Last Menstrual Period
MFI	.Maternal Floor Infarction
MHz	.Mega Hertz
PD	.Power Doppler
SCH	.Subchorionic Hematoma
TGC	Time Gain Compnasetor
TPS	.Transperineal Sonography
US	.Ultrasound

#### :ABSTRACT

This study was conducted with aim of evaluating placental thickness, measured at the insertion of the umbilical cord, as a parameter for estimating gestational age of the fetus. The study was conducted on 100 women with normal singleton pregnancies in the third trimester at Elnohoud teaching Hospital and Hamdeen's clinic from 25\7\2007 to 13\12\2007, Ultrasound was done by using Toshiba just vision 200 with 3.75 MHz convex probe and Tokimec cs-2020 with 3.5MHz probe. After estimating the fetal age (in weeks) by using biparietal diameter (BPD), femur length (FL), the placental thickness was calculated (in millimeters) during third trimester. It was observed that the placental thickness in millimeters in all patients along with the third trimester has positive linear correlation with gestational age in weeks. We concluded that the measurement of the placental thickness is an important parameter for estimating gestational age in the third trimester in normal singleton pregnancies along with other parameters like BPD, FL, AC & HC where the exact duration of pregnancy is not known.

#### الخلاصة

أجريت هذه الدراسة بغرض قياس سُمك المشيمة، عندما تلة قي بالحبل السُري، كمؤشر لة قدير عمر الحمل بالنسبة للجنين. ل قد أجريت هذه الدراسة على مئة من النساء الحوامل حملاً احاديا طبيعياً في الثلث الثالث من فترة الحمل وذلك بمستشفى النهود التعليمي وعيادة حامدين في الفترة من 25\7\ 2007 إلى 13\12\7000، و قد تم استخدام جهاز توشيبا جست فيشن 200 للكشف بالموجات فوق الصوتية مع مجس (أو مسبار) محدب 3.75 مي قاهيرس. مي قاهيرس وجهاز توكك سي إس 2020 مع مجس 3.5 مي قاهيرس. ل قد حُسب سُمك المشيمة (بالمليمتر) في الثلث الثالث من عمر الحمل بعد ت قدير عمر الجنين (بالأسابيع) باستخدام قطر جانبي الدماغ وطول عظم الفخذ، ولوحظ أن سُمك المشيمة بالملميترات في كل النساء السودانيات اللائي حملن حملا احاديا طبيعيا يتطابق تطاب قا تاما مع عمر الحمل بالأسابيع.

ومن هنا نخلص إلى أن م قياس سُمك المشيمة يُعد مؤشراً هاماً من مؤشرات ت قدير عمر الحمل، هذا بالإضافة إلى مؤشرات أخرى مثل قياس القطر الجانبي للدماغ, طول عظم الفخذ, محيط البطن وغيره من غير أن تكون مدة الحمل معروفة بالضبط.