#### بسم الله الرحمن الرحيم

# Sudan University of Science and Technology College of Graduate Studies

# Ultrasound Findings Of Threatened Abortion in Sudan

نتائج الموجات فوق الصوتية للاجهاض المهدد في السودان

A thesis Submitted for the Fulfillment of the Requirements for the MSc Degree in Medical Diagnostic Ultrasound

:Prepared By

Ali Mohammed Eltohami Babiker

:Supervisor

Dr. Mona Ahmed Mohammed

B.Sc (Diagnostic Radiology S.U), M.Sc (Medical Diagnostic Ultrasound S.U), PhD (Medical Diagnostic .(Ultrasound S.U)

### 2015



قال تعالى:

) يَا أَيُّهَا النَّاسُ إِنْ كُنْتُمْ فِي رَيْبٍ مِنَ الْبَعْثِ فَإِنَّا خَلَقْنَاكُمْ مِنْ تُرَابِ ثُمَّ مِنْ نُطْفَةٍ ثُمَّ مِنْ عَلَقَةٍ ثُمَّ مِنْ مُضْغَةٍ مُخَلَّقَةٍ وَغَيْرِ مُخَلَّقَةٍ لِنُبَيِّنَ لَكُمْ وَنُقِرُّ فِي الْأَرْحَامِ مَا نَشَاءُ إِلَى أَجَلِ مُسَمَّى ثُمَّ نُخْرِجُكُمْ طِفْلًا ثُمَّ لِتَبْلُغُوا أَشُدَّكُمْ وَمِنْكُمْ مَنْ يُتَوَفَّى وَمِنْكُمْ مَنْ يُرَدُّ إِلَى أَرْذَلِ الْعُمْرِ لِكَيْلًا يَعْلَمَ مِنْ بَعْدِ عِلْمِ شَيْئًا وَتَرَى الْأَرْضَ هَامِدَةً فَإِذَا أَنْزَلْنَا عَلَيْهَا الْمَاءَ اهْتَزَتْ وَرَبَتْ وَأَنْبِتَتْ مِنْ كُلِّ زَوْجٍ بَهِيجٍ (5) ذَلِكَ بِأَنَّ اللَّهَ هُوَ الْحَقُّ وَأَنَّهُ يُحْيِي الْمَوْتَى وَ أَنَّهُ عَلَى كُلِّ شَيْءٍ قَدِيرٌ ( ((6

صدق الله

العظيم

سورةالحج

، الآية (5-

(6

#### **Abstract**

This study was conducted in khartoum state, Sudan, in the ultrasound departments of Elsheikh Mohemmed Ali Faduol - Omdurman. The problem of the study was the Abortion is the most common complication in the early pregnancy and threatened abortion had been shown to be associated with increased incidence of antepartum hemorrhage, preterm labour and intra uterine growth retardation. The importance of the study was to asses the role of ultrasound in threatened abortion to prevent spontaneous pregnancy loss. The aim of the study was to . characterize the threatened abortion by ultrasound

This is a cross section , descriptive study carried out during the period from 2014 to 2015. the clinical data were collected from 50 pregnant patients who were hospitalized with clinical diagnosis of threatened abortion (with vaginal bleeding, lower abdominal pain , cramping and closed os)., and ultrasound exam was done. The data classified and analyzed by using SPSS and Ecxel programs.

The analysis of the results showed that the most Ultrasound finding of threatened abortion are sub chorionic hematoma among maternal age (36-45) and gestational age (5-7 weeks) which is 76%, abnormal gestational sac 10%, abnormal heart beats 10% and

.abnormal yolk sac 4%

Gray scale images are specific for detecting threatened abortion and presence of heart beats was the key for .diagnosis

Subchorionic hematoma is common to be present in most cases of threatened abortion . The study recommended that real time ultrasound imaging should be the first choice modality for quick diagnosis of threatened abortion and to complement laboratory investigation . US request should include brief clinical background and .patient history

#### ملخص الدراسة

أجريت هذه الدراسة في ولاية الخرطوم-السودان بقسم الموجات فوق الصوتية لستشفي محمد علي فضل بامدرمان. .تكمن مشكلة البحث في صعوبة التشخيص السريع والدقيق لحالات الاجهاض المهدد و قلة البحوث التي أجريت بخصوص هذا الموضوع في السودان. أهمية هذه الدراسة هي ان الاجهاض المبكر من اكبر المضاعفات في النصف الاول من الحمل مما يودي الي حدوث نزيف مهبلي قبل الولادة ، الولادة المبكرة وتاخر نمو الجنين. الهدف من هذه الدراسة هو معرفة دور الموجات فوق

الصوتية التشخيصية في تمييز الأسباب المؤدية للاجهاض المبكر ومحاولة منع حدوث المضاعفات والاجهاض التلقائي

هذه الدراسة دراسة وصفية, تحليلية, أجريت في الفترة من 2014 - 2015. جمعت المعلومات السريرية وتم عمل فحص الموجات فوق الصوتية للمرضي الحوامل اللائي ادخلن المستشفي وشخصن سريريا بالإجهاض المهدد(نزيف مهبلي, الم اسفل البطن مع قفل عمق الرحم). تم جمع البيانات من 50 مريضة وتم تصنيفها وتحليلها بواسطة برنامج التحليل الإحصائي. وجدت الدراسة أن وجود ورم دموي هو العلامة الأكثر شيوعا في صورة الموجات الصوتية, بنسبة (76%) كيس الحمل غير الطبيعي بنسبة شيوعا في صورة الموجات الصوتية, بنسبة (76%) كيس الحمل غير الطبيعي بنسبة مثر شيوعا في صورة المؤجات الصوتية (10%) و وجود الكيس المحي غير الطبيعي مثل نسبة (40%),

الموجات الصوتية العادية ذو خصوصية عالية في تحديد الاجهاض المهدد ووجود ضربات القلب هو المفتاح في التشخيص مع وجود ورم دموي تحت المشيمة غالبا.

أوصت الدراسة بان تكون الموجات الصوتية العادية هي الخيار الأول للتشخيص المبكر للاجهاض المهدد والمكملة للفحوصات المعملية كما لابد أن يتضمن طلب فحص الموجات وصف مبسط لحالة المريض السريرية والتاريخ المرضي.

#### **Dedication**

:I dedicate this simple work to
Soule's of my father and my mother (Allah mercy
(them
My wife, sister and brother
My supervisor, Dr /mona ahmed
My teachers along my education levels
My friends and my colleagues
With my love and appreciation

# **Ali Mahammed**

# **Eltohami**

## Acknowledgment

My acknowledgement and great fullness at the .beginning and end to Allah

My special gratitude to my supervisor Dr: Mona Ahmed .who do her best helping and guiding me to this thesis

I express my respect and acknowledgement to all teachers those I learned on their hands along my life and my education levels, especial thanks for my teachers Dr:

.Ahmed El Mustafa

My great thanks to my colleagues in Elsheikh Mohamed Ali .hospital

.Finally, I do thank everyone who helped me

# **Table of Content**

Page	Торіс		
II	Qurar		
III	Abstract		
IV	ملخص البحث		
V	Dedication		
VI	Acknowledgment		
	Chapter One		
2	Introduction 1-1		
3	Statement of problem 1-2		
3	Objective of the study 1-3		
3	Overview of study 1-4		
	Chapter Two		
5	Embryology of the female reproductive 2-1 tract		
13	Anatomy 2-5		
19	Reproductive physiology 2.6		
22	Pathology 2.7		
26	(Subchorionic Hesmatoma (SCH 2.8		
27	Other types of miscarriages 2.9		
31	Anatomic Structure of the Early 2.10		

	Pregna	incy
33	Physical and Technical Princi	pals 2.11
37	Early ultrasound findings in norm	nal 2.11.3 egnancy
42	Previous Studi	es 2.11.4
	Chapter Three	
46	Methodo	logy 3.1
47	Instrumentations and equipm	ents 3.2
48	Scanning techr	nique 3.5
48	Ethical consider	ation 3.8
	Chapter Four	
50		Result 4
50	Chapter Five	Result 4
50	Chapter Five  Discussion 5-1	Result 4
50	•	
50	Discussion 5-1	60
50	Discussion 5-1  Conclusion 5-2	60 61

# The list of tables and figures

Table	Content	Pag e s
Table 4-1	show the Maternal Age distribution	49
Table 4-2	Show the distribution among the gestational .age for 50 patients	51
Table 4-3	Show the gestational sac shape for 50 patients	52
Table 4-4	Show the gestational sac position for 50 patients	52
Table 4-5	Show the Ultrasound Findings in 50 patients	53

Table 4-6	Show the correlation	54
	between Maternal Age and Ultrasound Findings in 50 patients	
Table 4-7	Show the correlation between Maternal Age and gestational Sac Shape	56
Table 4-8	Show the Correlation between Maternal Age and gestational Sac .Position	57
Table 4-9	Show the Correlation between Gestational Age and Ultrasound .Findings	58

Figures	contents	Pag e
( <b>Figure( 2.1</b>	Transverse section of the ovary at the seventh week, showing degeneration of the primitive (medullary) sex cords and formation of the cortical cords	6
( <b>Figure 2.2</b> )	Genital ducts in the sixth week in the male A and female	7

(Figure 2.3)	Genital ducts in the female at the end of the second month.  Note the paramesonephric (müllerian) tubercle and formation of the uterine canal	8
(Figure 2.4)	Transverse sections through the urogenital ridge at progressively lower levels. A,B. The paramesonephric ducts approach each other in the midline and fuse	10
( <b>Figure 2.5</b> )	Formation of the uterus and vagina. A. 9 weeks. Note the disappearance of the uterine septum. B. At the end of the third month. Note the tissue of the sinovaginal bulbs	10
( <b>Figure 2.6</b> )	Sagittal sections showing formation of the uterus and vagina at various stages of development. A. 9 weeks.B. End of third month	12
figure 2.7	shows the anatomy of utrus ovaries and fallopian	15

Figure 2.9	shows the physiological change In ovarian and	22
	.endometrial cycles	
FIGURE 2.10	The moderate subchorionic bleed is seen adjacent to the gestational sac	27
FIGURE 2.11	Retained products of conception. A, Sagittal transvaginal scan of a 22	29
FIGURE 2.12	Normal 9-week	32
	.embryo/amnion	32
	Normal separation of amnion (arrow) and chorionic sacs at 9	
	weeks	