Sudan University of Science and Technology

College of Graduate Studies

Evaluation of First Trimester Vaginal Bleeding Using Ultrasonography

تقويم النزف المهبلي في الثلث الاول من الحمل باستخدام الموجات فوق الصوتية

A thesis Submitted for Partial Fulfillment of the Requirements of (M.SC.) Degree in Medical Diagnostic Ultrasound

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2019

الآية

قال تعالى :

"والذين جاهدوا فينا لنهدينهم سبلنا وان الله لمع المحسنين"

سورة العنكبوت(69)

Dedication

To my

Father
Mother
Brothers
Sisters
Friends and
colleges

Acknowledgement

It would not have been possible to achieves this work without the help of multiple individuals ,my plenty thanks go to my supervisor Dr. Ikhlas Abdelaziz for her assistance, guidance, valuable comments, and constructive criticism.

My thanks also go to My meek brother Ebraheem for his assistance.

My thanks also go to My senior sonographer , Dr Kifah, Aayat Alnour, and Usrea.

Abstract

This study was done in Ombada hospital, in Khartoum state, in the period from august 2018 to December 2018, to evaluate the efficiency of ultrasound as a method of studying and diagnosing vaginal bleeding and its outcome during first trimester.

The study was determine types of miscarriage as a part of vaginal bleeding, during first trimester.

One hundred women patients in age group between 16 and 43 years old, were scanned by real time ultra sound machine (Fukuda with convex prob its frequency 3-4
MHZ), all patients scanned trans abdominaly.

The data were collected by data collecting sheet from patients(age, gravidity, occupation and others)and from sonologist(ultrasound findings and the diagnoses),then data analyzed by spss program ,to detect relationship between variables.

the results of the study was : 39% of cases were incomplete, 27% complete, 15% threatened, 9% missed, inevitable and blighted ovum 5%,and no any cases of ectopic or trophoplastic pregnancy.

The study proved that ultra sound is the method of choose for determining type of miscarriage, in order to chose the suitable type of treatment.

The study conclude that routine early ultrasound scans for pregnant women is very important .

ملخص البحث

أجريت هذه الدراسة في مستشفى أمبدة بولاية الخرطوم , في الفترة بين أغسطس 2018 الى ديسمبر 2018, لتقييم فعالية الموجات فوق الصوتية كوسيلة لدراسة وتشخيص النزف المهبلي و تأثيره على الحمل في فترة الثلث اللأول .
حددت الدراسة أنواع الاجهاض كنتيجة مباشرة للنزف المهبلي في هذه الفترة الحرجة , وقد شملت الدراسة 100 سيدة تتراوح أعمارهن بين 16 و43 سنة , تم مسحهن جميعا باستخدام جهاز فوكودا 4100 , بمسبار محدب يتراوح تردده بين 4 و3 ميقا هيرتز بتقنية الوضع المنبطح, وتحضيرهن جميعا بملأ المثانة.
تم جمع البيانات بواسطة استمارة استبيان بالسوَال عن العمر , عدد مرات الحمل , وغيرها , ومن ثم تدوين النتيجة التي تم التوصل عليها بالمسح بالموجات فوق الصوتية, ومن ثم تم تحليل البياتات بواسطة برنامج الحزم الاحصايية للعلوم الإجتماعية SPSS لمعرفة العلاقة بين المتغيرات.
وكانت نتيجة الدراسة كالاتي:
39% من الحالات كانت اجهاض غير مكتمل, 27% اجهاض مكتمل, 15% حمل مهدد بالاجهاض, 9% اجهاض منسي, ثم كيس الحمل الفارغ والاجهاض الحتمي بنسبة 5%, بينما لم يتم تسجيل اي حالة من الحمل خارج الرحم او الحمل العنبي.
وبذلك برهنت الدراسة ان فحص الموجات فوق الصوتية هو الوسيلة الانجع لتحديد نوع الاجهاض, ومن ثم اختيار طريقة العلاج المناسبة.
واوصت الدراسة باجراء فحص الموجات فوق الصوتية للنساء الحوامل في فترة بداية الحمل .

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CHAPTER ONE

Introduction

Chapter one

1.1 Introduction:

Vaginal bleeding of pregnant women is one of the major health problems in the world, especially in developing countries like Sudan It is the main cause of iron deficiency anemia in women, so it is one of the major causes that increase maternal mortality rate. Vaginal bleeding is common event at all stages of pregnancy, and it is most frequent at early stage (first trimester),The first trimester consist of series of complexes, sequential events , that makes early stage of embryonic development full of interruptions, which may lead to complications in this period (hagen2012).

The most important event of these complexes is vaginal bleeding , which need good ,and quick investigation , to avoid its complications. it complicates 21% of clinically detected pregnancies and 12%_15% are lost (susanna 2014).

Ultrasonography is the primary imaging modality in the evaluation of patient present with vaginal bleeding , it correlate with serum human chorionic gonado tropin level and clinical presentation to differentiate causes of first trimester bleeding , which all may present with bleeding and pain(ACR 2012).

Patient benefit from early sonographic examination is carefully investigation of uterine cavity for the presence of an embryo, heartbeat, yolk sac, or retained products of conception (L hageen2012).

The combination of vaginal bleeding and absence of heartbeat is associated with 100% of embryonic mortality (Rumak 2010).

Using ultra sound in investigation of vaginal bleeding is very important because it does not involve any risk to the mother or fetus, and can be repeated without discomfort, and also it is noninvasive. (Richard 2007)

Ultrasound can differentiate between many causes of first trimester vaginal bleeding like miscarriage (pregnancy loss), and its types , ectopic pregnancy (pregnancy outside the uterus, usually in the fallopian tubes), gestational trophoblastic disease.

(rare condition That may be cancerous in which a grape- like mass of fetal and placental tissue develops), implantation of the embryo in uterus , infection , bleeding between the uterine wall and placental membrane(sub chorionic hemorrhage and hematoma),normal changes in the cells of the cervix due to pregnancy(Richard 2007).

Various authers have evaluated transvaginal sonographic criteria that may be usefull in differentiation between normal and abnormal gestation , while some authors consider the absence or presence of yolk sac as the most reliable prediction of the outcome of the pregnancy , other rely on the presence or absence of an embryo cardiac activity to make accurate decision on viability or non viability .

Medical diagnostic ultra sound is considered to be an essential method in diagnosing the vaginal bleeding and miscarriage events and it is causes, it play an important role in management.

1.2. Problem of study:

Vaginal bleeding have high incident in first trimester , it is seem to be the most causes of fetal death and may can complicate with mother with high morbidity and mortality rate in sudan , so early detection of this problem help to save mother and child , ultra sound gives accurate evaluation of early pregnancy complication (Mustafa 2016).

1.3.objectives of study:

1.3.1. General objectives:

To evaluate first trimester vaginal bleeding , using ultrasonography.

1.3.2.specific objectives:

1.3.2.1.To determine the causes of vaginal bleeding in first trimester, and to figure out the commonest type of miscarriage using ultrasound.

1.3.2.2.to correlate between mother age and causes of vaginal bleeding using ultrasound, and to find the common age incidence.

1.3.2.3.to correlate between gravid and causes of vaginal bleeding using ultrasound.

1.3.2.4.to correlate between any sonographic appearance of any gynecological problem with vaginal bleeding during first trimester.

1.4.over view of study:

This study consists of five chapters, chapter one is an introduction which include general information about vaginal bleeding, problem of study, and objectives of study, Chapter two is a literature review which include anatomy, physiology, pathology, sonography, and previous studies, Chapter three is about research methodology, Chapter four is deals with results of study, Chapter five include discussion, conclusion, recommendations. then references and appendices.

CHAPTER TWO

Theoretical background and Literature Review

Chapter two

Theoretical background and literature review

2.1.theoretical background (anatomy, physiology, and sonography)

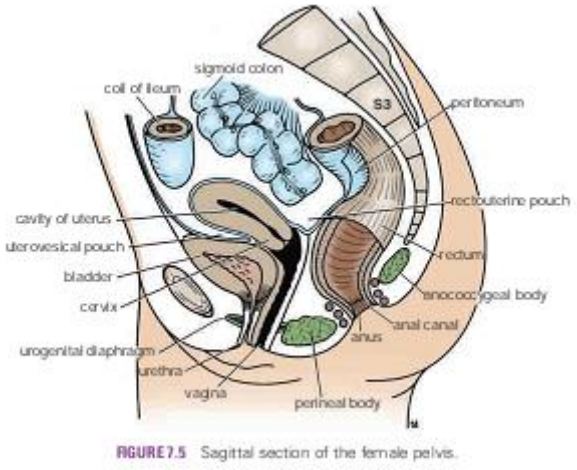


Figure 2-1 sagital section of female pelvis, 9th edition Snell

2.1.1.ovary:

2.1.1.1. Location and description:

Each ovary is oval shaped, measuring (4*2cm), and is attached to the back of the broad ligament by the mesovarium, and to the lateral margin of the uterus by round ligament.

The ovary lies against the lateral wall of the pelvis in a depression called the ovarian fossa.(snell 2012)

Its position is extremely variable, and it is often found hanging in the pouch of douglas, during pregnancy the enlarging uterus pulls the ovary up in to the abdominal cavity.

Before puberty the ovary is smooth, but after puberty the ovary becomes progressively scarred as successive as corpora lutea degenerate, after menopause, the ovary becomes shrunken and its surface is pitted with scars.(Snell 2012)

2.1.1.2.Function:

The ovaries are the organs responsible for the production of the female germ cells(the ova),and the female sex hormones(estrogen and progistrone).(snell 2012)

2.1.1.3.Blood supply:
ovaries supplies with ovarian arteries, and drains in to the ovarian veins.

2.1.1.4.Lymph drainage:
The lymph vessels of the ovary follow the ovarian artery and drain in to the para- aortic nodes .

2.1.1.5.Nerve supply:
The nerve supply of the ovary is derived from the aortic plexus.(Snell 2012)

2.1.2.Uterine Tubes:
2.1.2.1.Location and description:
The two uterine tubes are each about 10cm in length and lie in the upper border of broad ligament, each connect the uterine cavity at the level of the ovary, it can be divided in to four ***2.1.2.2.regions:***
a-the infundibulum :the funnel_ shaped lateral end that projects beyond broad ligament and over lies the ovary , its free end is finger like processes known as fimbriae.
2-the ampulla: which is the widest part of the tube.
3-the isthmus: which is the narrowest part of the tube, that lies just lateral to the uterus.
4-the intra mural part: is the segment which pierces the uterine wall (Snell 2012).

2.1.2.3.Function:
The uterine tube receives the ovum from the ovary, then fertilization occurs in it, it provides nourishment to the fertilized ovum and transport it to the uterine cavity.

2.1.2.4.Blood Supply:
Uterine tube supplies with uterine artery and ovarian artery, and drains into uterine vein and ovarian vein.

2.1.2.5.Lymph Drainage:
Internal iliac
and Para-aortic nodes.

2.1.2.6.Nerve Supply:
Sympathetic and Para sympathetic nerves from the inferior hypo gastric plexuses .(Snell 2012)

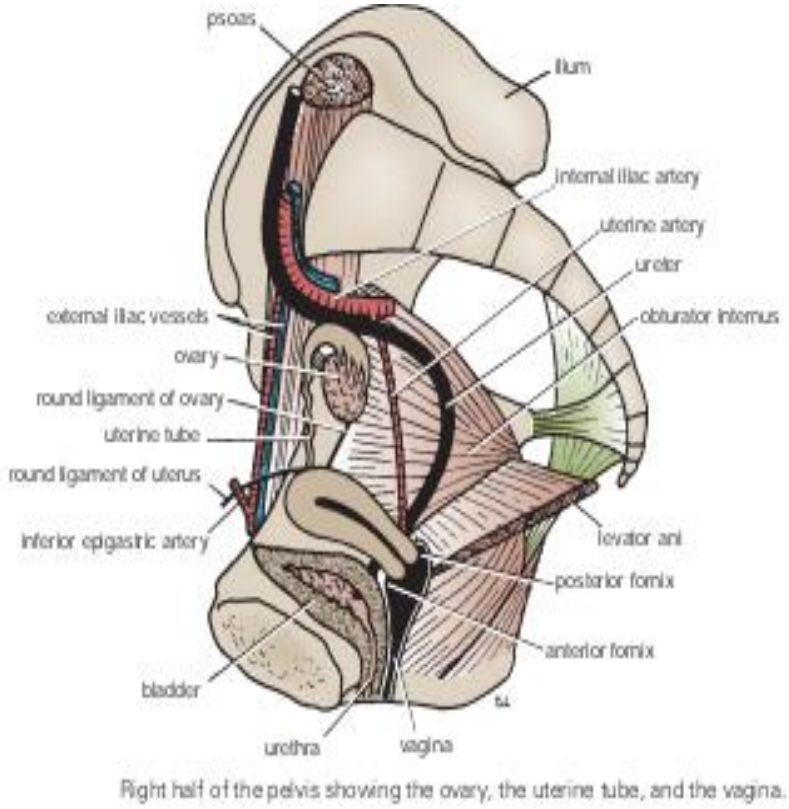


Figure 2 -2 Right half of the pelvis showing the ovary, the uterine tube, and the vagina Snell

2.1.3.The Uterus :

2.1.3.1.Location and Description:

The uterus is a hallow pear-shaped organ, with thick muscular wall, in the young nulliparous it measures 8cm in length, 5cm in width, 2.5cm in thickness, it divides in to :

The Fundus : the part of the uterus that lies above the entrance of uterine tube.

The body: the part of the uterus that lies below the entrance of the uterine tube.

The cervix: the narrow part of the uterus that pierces the anterior wall of the vagina.

the cavity of uterine body is triangular in coronal section , but it is merely a cleft in the sagital plane, the cavity of the cervix (cervical canal) communicate with the cavity of the body through the internal os, and with that of vagina through the external os.(Snell 2012)

2.1.3.2.Relsations:

-Anteriorly: the body of the uterus is related anteriorly to the uterovesical pouch and the superior surface of the urinary bladder, the supra vaginal cervix is related to thesuperior surface of bladder, and the vaginal cervix is related to the anterior fornix of the vagina.

-Posteriorly: the body of the uterus is related posteriorly to the pouch of douglas with coil of ileum or sigmoid colon within it.

-laterally: the body of the uterus is related laterally to the broad ligament, and the uterine artery and vein. The supra vaginal cervix is related to ureter as it passes forward to enter the bladder. The vaginal cervix is related to the lateral fornix of the vagina.(Snell 2012)

2.1.3.4.Function:

The uterus serves as a site for the reception, retention, and nutrition of the fertilized ovum, Snell 2012

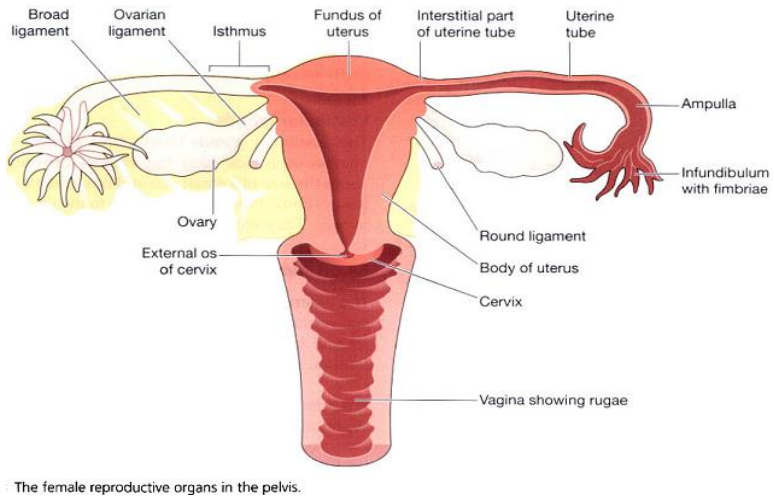


Figure 2-3 the female reproductive organs in the pelvis, Snell

2.1.3.5.Positions of the Uterus:

The normal position of the uterus is considered to be anteversion or anteflexion, anteversion: describes the uterine position in which the body tilts forward forming a 90 degree angle with cervix.

Anteflexion: denote the position in which the uterine body folds forward and comes in contact with cervix, forming an acute angle between the body and cervix.

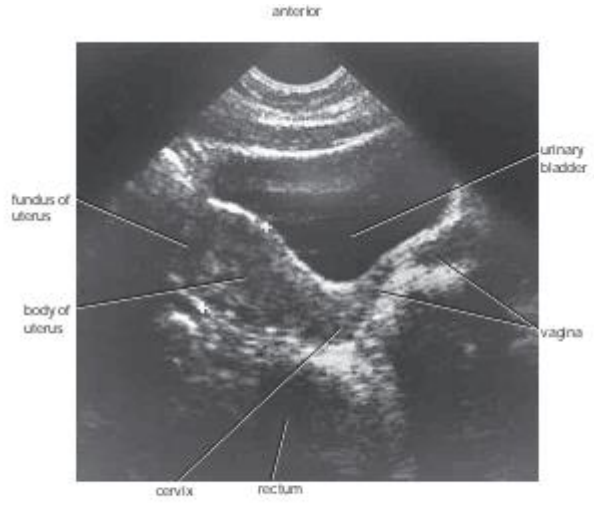
Retroversion: of the uterus is the position in which the uterine body tilts backward, without a bend where the cervix and body meet.

Retroflexion:is the uterine position that result in the uterine body tilting backward and actually coming in contact with the cervix, thus forming an acute angle between body and cervix.(Steven M. Penny2011)
The uterus can also be oriented more to the left or Wright of the mid line resulting in variation between anatomic mid line and the functional mid line.(Seven M. Penny2011)

2.1.3.6. Structure of the uterus:

The uterus is covered by peritoneum except anteriorly, laterally there is also a space
Between the between the attachment of the layers of the broad ligament.

-myometrium: is a thick muscular wall, made up of smooth muscle supported by connective tissue.
-Endometrium: is a mucus membrane lining the body of the uterus, it continuous above with the mucus membrane lining the uterine tube and below with the mucus membrane lining the cervix.
The endometrium undergoes extensive changes during the menstrual cycle in response to the ovarian hormones.
-parametrium: is avisceral pelvic fascia, in which the uterine artery crosses the ureter on each side of the cervix.(Snell 201



Longitudinal sonogram of the female pelvis showing the uterus, the vagina, and the bladder. (Courtesy of M.C. Hill.)

Figure 2-4 longitudinal sonogram of female pelvis showing the uterus, the vagina and the bladder, 9th edition, Snell 2011

2.1.3.7.Blood supply:

The uterus is supplies mainly with uterine artery which running medially, and then end by anastomosing with the ovarian artery which also assists in supplying the uterus.
The uterine vein follows the artery and drains into the internal iliac vein

2.1.3.8.Lymph drainage:

The lymph vessel from the fundus drains into the para-aortic node.
The vessels from the body and cervix drain into the internal and external iliac lymph nodes.
a few lymph vessels follow the round ligament of the uterus throw the inguinal canal and drain into the superficial inguinal lymph nodes.

2.1.3.9.Nerve supply:

Sympathetic and parasympathetic nerves from branches of the inferior hypogastric plexuses.

2.1.3.10.supports of the uterus:

-the Levatores Ani Muscles
- the perineal body
-the transverse cervical ligament
- pubocervical ligament
- and sacrocevical ligaments

2.1.3.11.uterus in the child:

The fundus and body of the uterus remains small until puberty, when they enlarge greatly in response to the estrogen secreted by ovary.

2.1.3.12.Uterus after menopause:

After menopause the uterus atrophies and become smaller and less vascular, because the ovaries no longer produce estrogen and progesterone.

2.1.3.13.Uterus in pregnancy:

During pregnancy the uterus becomes greatly enlarged as the result of increasing the production of estrogen and progesterone, first by corpus leuteum of ovary, and later by placenta, the uterus enlarge until the fundus reach the xiphoid process by the ninth month, this enlargement is due to hyper trophy of myometrium, and some hyper plasia.

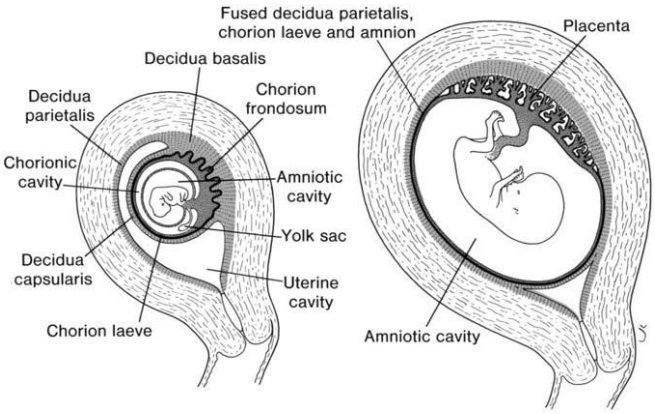


Figure 2-5 relations of fetal membrane to the walls of uterus, 9th edition, Steven M. Penny

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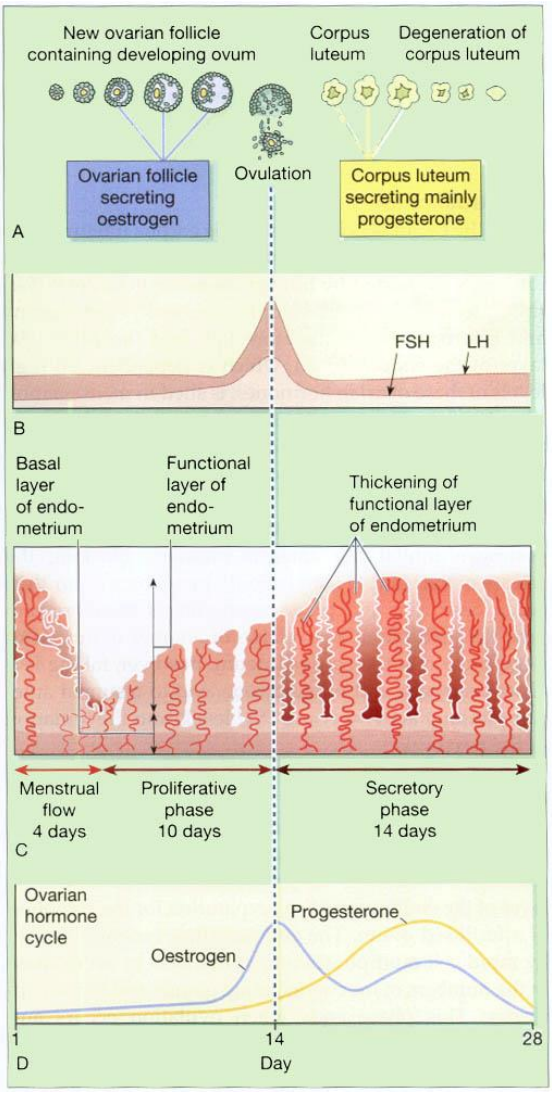


Figure 2-6 Summary of one female menstrual cycle: A. Ovarian cycle; maturation of follicle and development of corpus luteum. B. Anterior pituitary cycle; LH and FSH levels. C. Uterine cycle; menstrual, proliferative and secretory phases. D. Ovarian hormone cycle; oestrogen and progesterone levels .Anny Waugh .Alison Grant 9th edition

2.2. Previous Studies :

An analytic and descriptive study was done by Mustafa Mohammed in Elnohoud city in western kordofan in 2016 to evaluate first trimester pregnancy with vaginal bleeding by using ultra sound , this study had reported that the most frequent Ultrasound findings was miscarriage (93%) , then anembryonic gestational sac (2.98%) , then the least ectopic pregnancy and trophoplastic disease with same percentage (1.49%).

A study done by Motaz Basheer in Khartoum state , revealed that the incomplete miscarriage has highest incident about (32%) , followed by missed miscarriage (14%) , complete miscarriage (13%) , blighted ovum (6%) , molar pregnancy (5%) , ectopic pregnancy (4%) , threatened miscarriage (4%) , inevitable miscarriage (2%) , and IUFD (2%) , and also there are other organic causes like uterine fibroid ,and lastely endometrial hyperplasia .

Bronz and Elysia reveal that evaluation of endometrium by trans vaginal ultrasonography is currently the imaging method of choice in the diagnostic workup for abnormal uterine bleeding (Bronz et al 2007 .Elysia et al 2009).

Many previous studies recommended that ultrasound examination is very important to identify the causes of vaginal bleeding during first trimester in order to prevent the complications .

Aisha alameen had reported that vaginal bleeding in first trimester represent a large number in her study in age group between (27_30) years , were the most ,and constitute 38% this due to reproductive age.

Many of previous study had reported that Doppler ultrasound is very important for more accurate result.

CHAPTER THREE

Materials and Methods

Chapter three
Materials and methods

3.1.Materials :

3.1.1 patients::

This study was conducted on 100 cases of Sudanese women who came to the ultrasound department in the area of the study, selection of participation randomly,we include Pregnant women with vaginal bleeding in first trimester coming to the ultrasound Department , and prepared by full bladder,and exclude non Sudanese women, and non prepared by full bladder.

3.1.2 Equipments:

An ultrasound mashine (tosheeba power version 6oo with probe-convex 3.5
MHZ) , and sonoscope A6 with probe 3.5 MHZ , ultrasound
Imaging system with B mode capabilities is used .
The transducer is phased- array 3.5MHZ , and ultrasound gel is applied to the transducer
To prevent any attenuation or artifacts , and thermal printer paper was used.

3.1.3 the ultra sound gel:

I uses ultra sound gel, which Is a type of conductive medium that enables a tight bond between the skin and probe, letting the wave transmitting directly to the tissue beneath , and to the part that need to be imaged, it is formulated to act as coupling agent and reduce static.

3.2.METHODS:

3.2.1:sacnning technique:

The examination performed with the patient in supine position, the scanning is performed in sagital and transverse plane from anterior approach with transabdominal scanning, with low frequency probe(3.5-5mhz) using bladder as acoustic window, the probe is positions in mid point between line joining two iliac crests and symphisis pupis with small angle caudally.

3.2.2Data collection:

Data was collected by data collecting sheets , using many variables like : age , occupation , gravidity ,parity , pelvic pain and others .

3.2.3 data analyses

All statistical analysis will be performed using Statistical Packed for Sciences (SPSS) software.

.Cross-tabulation and frequency tables. Mean, range, and standard deviation of measured variables was computed, $p>0.05$ is considered significant measure.

3.2.4 ethical considerations:

Data was collected after permission and verbal consent of candidate's, no identifications or individual details were published ,no information or patient details will be disclosed or used for other reasons rather than study

.

CHAPTER FOUR

Results

Chapter four
Results

These results were presented with following tables and figures

Table (4.1) frequency distribution of age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
16-22 years	18	18.0	18.0	18.0
23-29 years	34	34.0	34.0	52.0
30-36 years	26	26.0	26.0	78.0
37-43 years	22	22.0	22.0	100.0
Total	100	100.0	100.0	
Minimum =16,maximum = 43,mean± Std. deviation29.56±6.57 years				

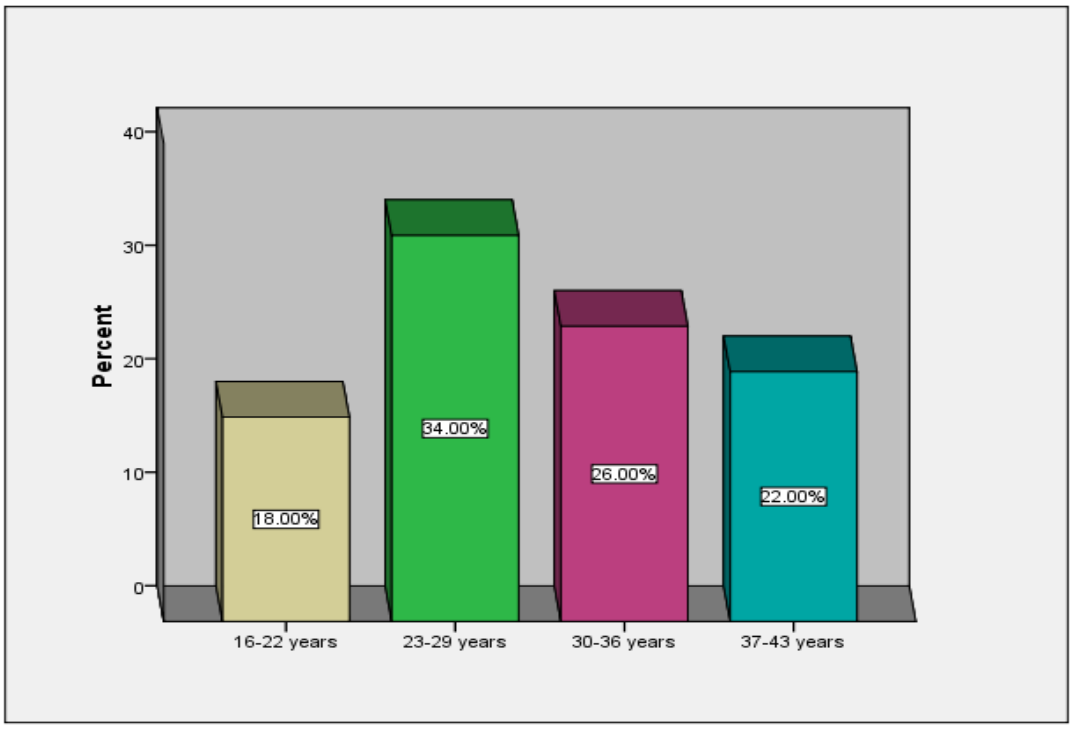
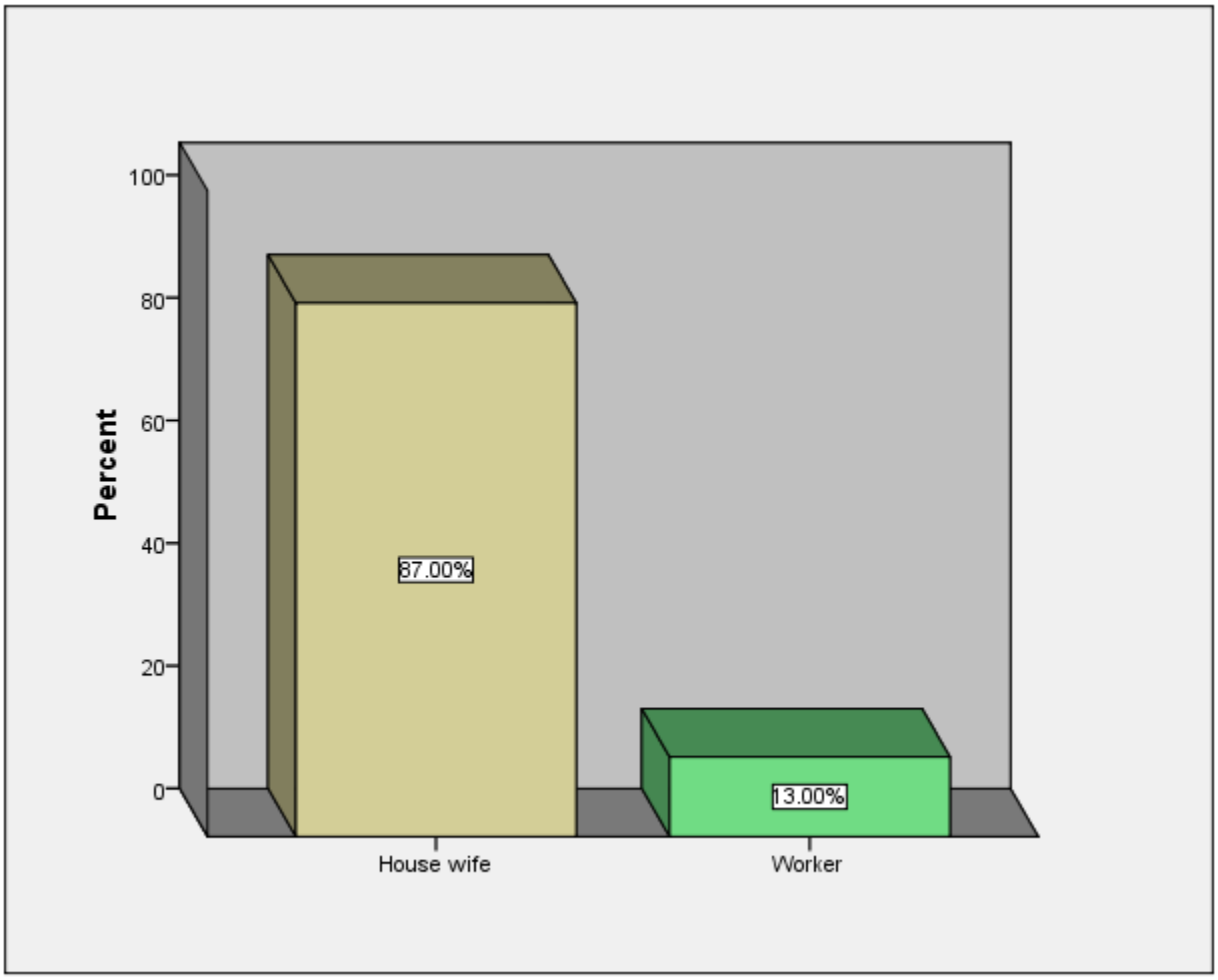


Figure (4.1) frequency distribution of age

Table (4.2) frequency distribution of occupation

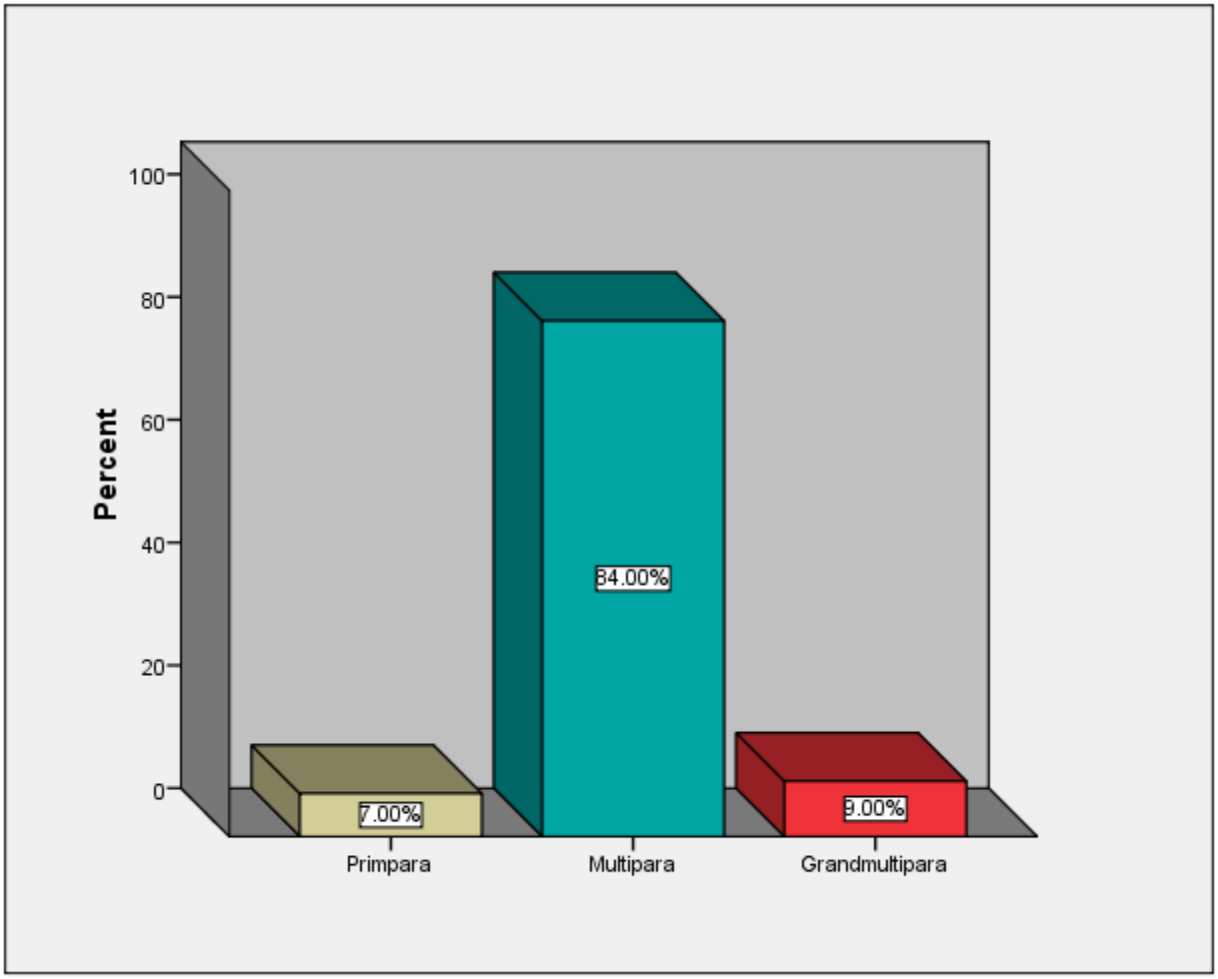
Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
House wife	87	87.0	87.0	87.0
Worker	13	13.0	13.0	100.0
Total	100	100.0	100.0	



Figure(4.2) frequency distribution of occupation

Table (4.3) frequency distribution of parity

Parity	Frequency	Percent	Valid Percent	Cumulative Percent
Prim-para	7	7.0	7.0	7.0
Multipara	84	84.0	84.0	91.0
Grand-multipara	9	9.0	9.0	100.0
Total	100	100.0	100.0	



Figure(4.3) frequency distribution of parity

Table (4.4) frequency distribution of history of abortion

History of abortion	Frequency	Percent	Valid Percent	Cumulative Percent
no	58	58.0	58.0	58.0
yes	42	42.0	42.0	100.0
Total	100	100.0	100.0	

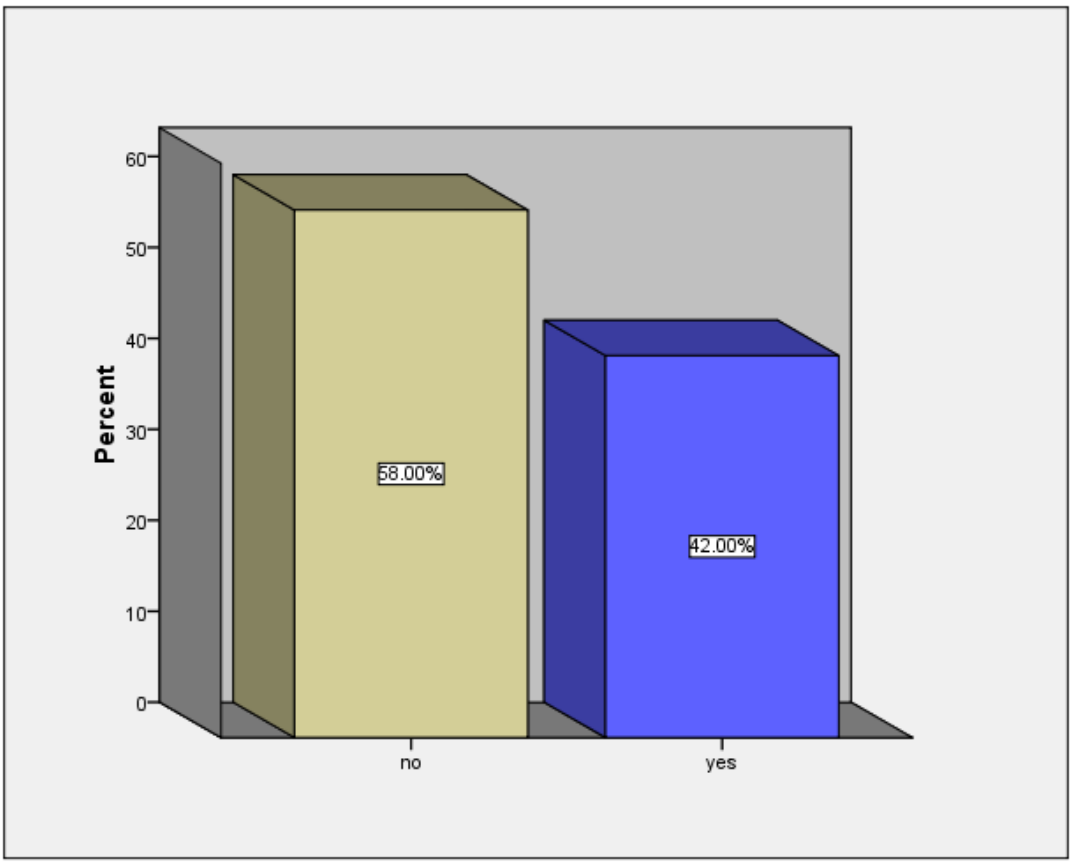
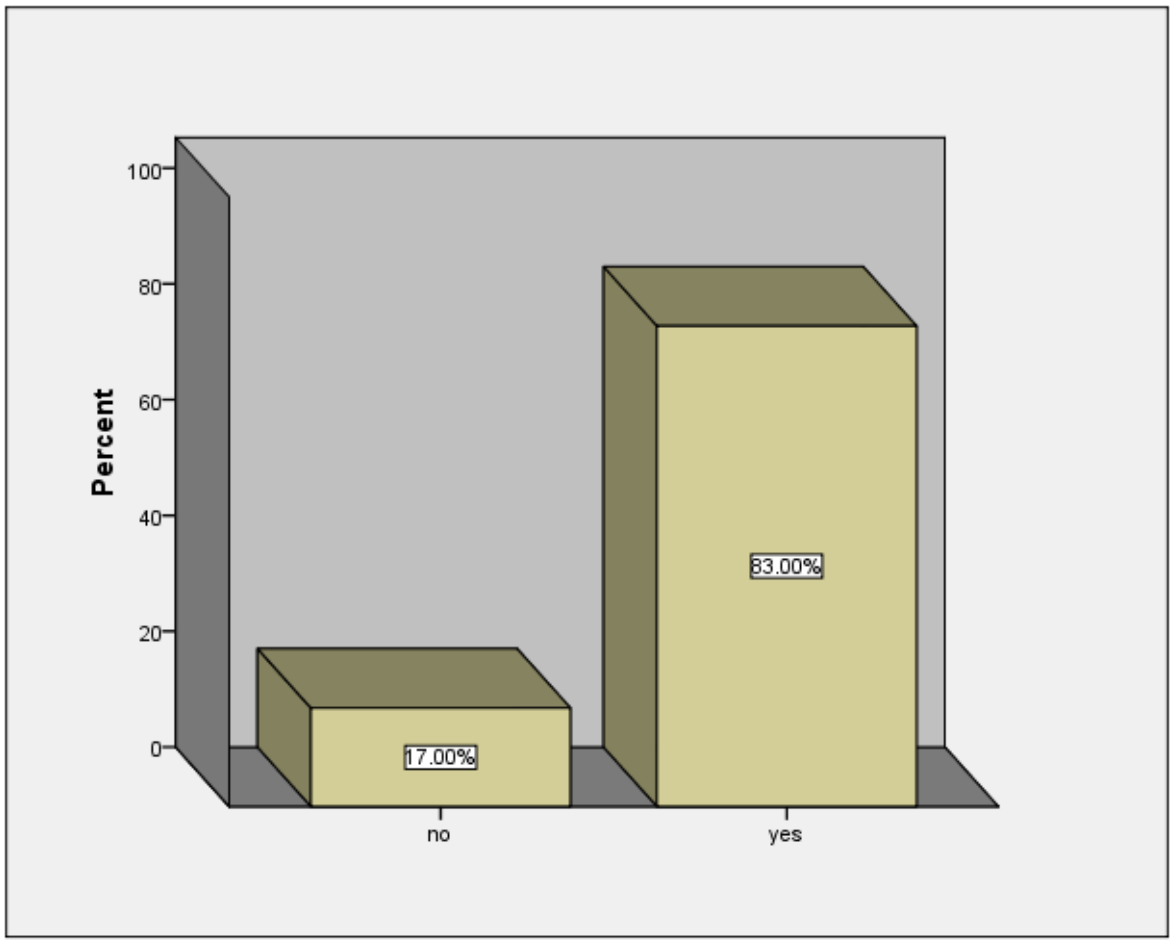


Figure (4.4) frequency distribution of history of miscarriage

Table (4.5) frequency distribution of history of pelvic pain

Pelvic pain	Frequency	Percent	Valid Percent	Cumulative Percent
No	17	17.0	17.0	17.0
Yes	83	83.0	83.0	100.0
Total	100	100.0	100.0	



Figure(4.5) frequency distribution of history of pelvic pain

Table (4.6) frequency distribution of history of part of product

Causes	Frequency	Percent	Valid Percent	Cumulative Percent
Falling down	1	1.0	1.0	1.0
Heavy work	36	36.0	36.0	37.0
Infection	1	1.0	1.0	38.0
Trauma	1	1.0	1.0	39.0
Traveling	1	1.0	1.0	40.0
Unknown	60	60.0	60.0	100.0
Total	100	100.0	100.0	

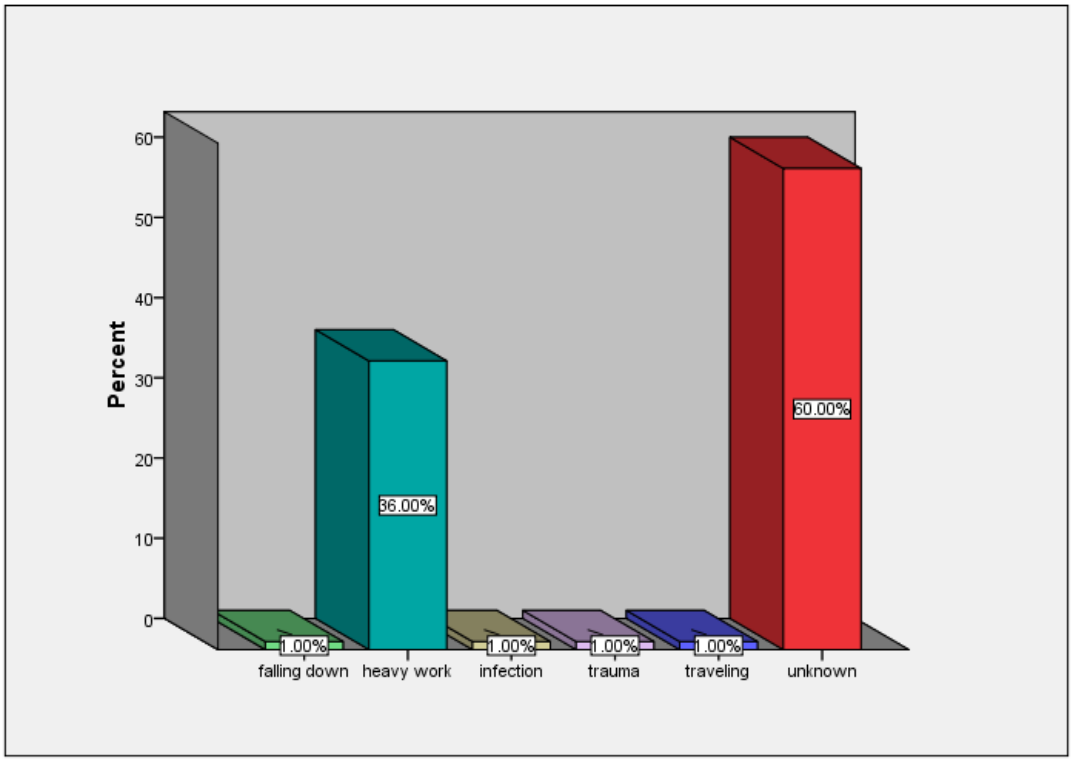


Figure (4.6) frequency distribution of causes of bleeding

Table (4.7) frequency distribution of history of other findings

Other finding	Frequency	Percent	Valid Percent	Cumulative Percent
Fibroid	4	4.0	4.0	4.0
No	79	79.0	79.0	83.0
Ovarian simple cyst	4	4.0	4.0	87.0
PCO	2	2.0	2.0	89.0
PID	6	6.0	6.0	95.0
yes	5	5.0	5.0	100.0
Total	100	100.0	100.0	

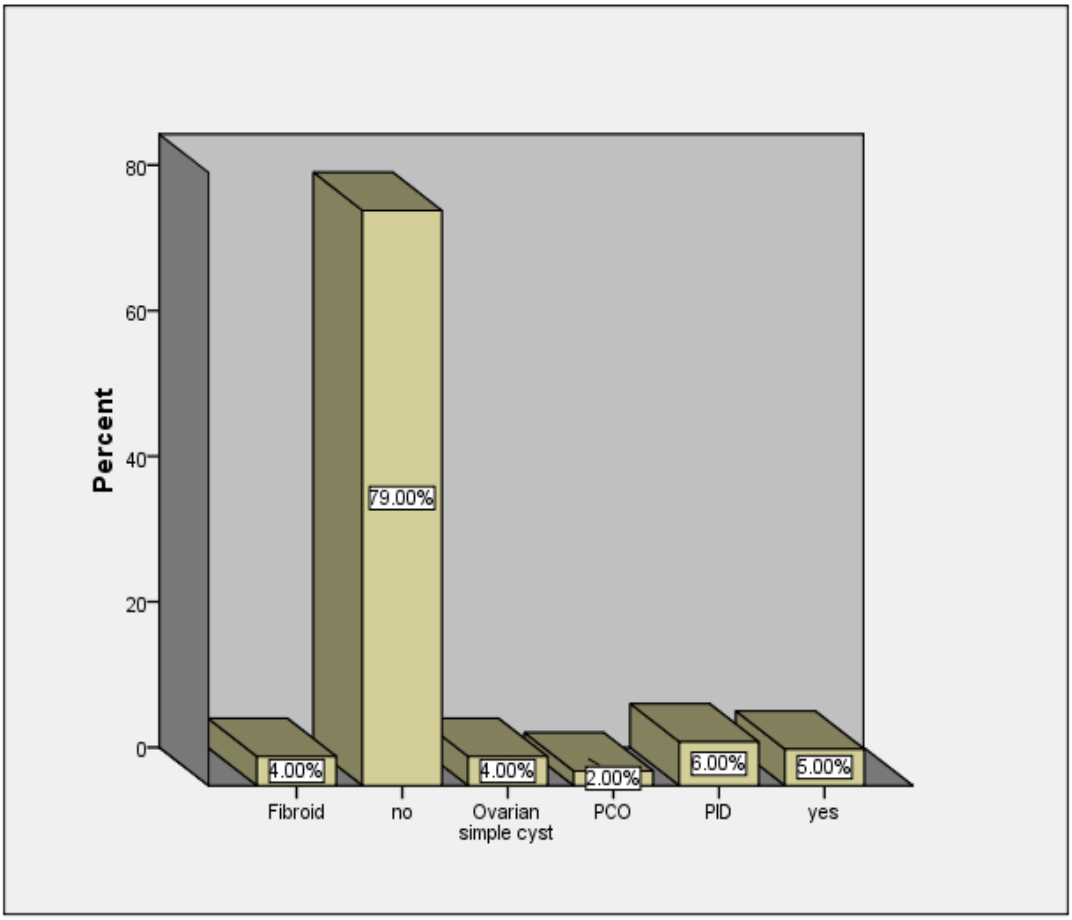


Figure (4.7) frequency distribution of history of other findings

Table (4.8) frequency distribution of diagnosis

Diagnosis	Frequency	Percent	Valid Percent	Cumulative Percent
Incomplete abortion	39	39.0	39.0	39.0
Complete abortion	27	27.0	27.0	66.0
Missed abortion	9	9.0	9.0	75.0
Inevitable abortion	5	5.0	5.0	80.0
Blighted ovum	5	5.0	5.0	85.0
Threatened abortion	15	15.0	15.0	100.0
Total	100	100.0	100.0	

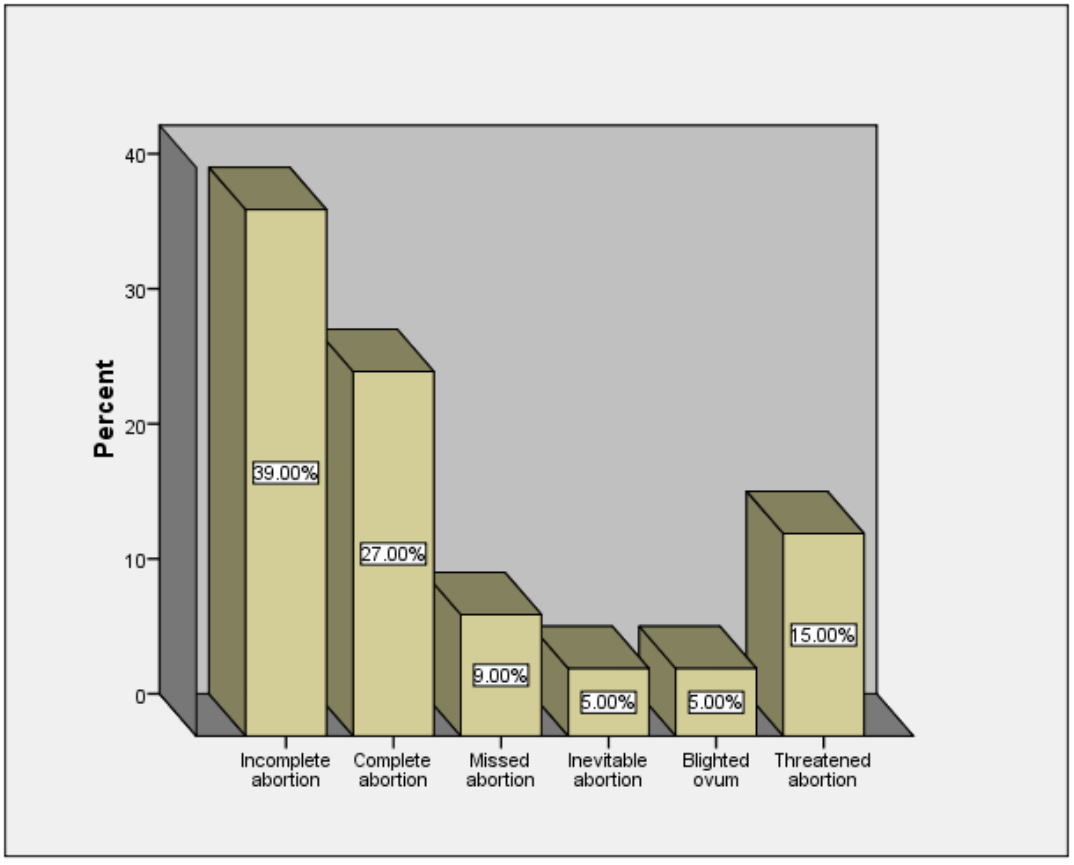


Figure (4.8) frequency distribution of diagnosis

Table (4.9) cross tabulation diagnosis and age

Diagnosis	Age				Total
	16-22 years	23-29 years	30-36 years	37-43 years	
Incomplete abortion	8	15	6	10	39
Complete abortion	5	5	10	7	27
Missed abortion	2	2	3	2	9
Inevitable abortion	0	2	2	1	5
Blighted ovum	0	3	1	1	5
Threatened abortion	3	7	4	1	15
Total	18	34	26	22	100
>0.05					

Table (4.10) cross tabulation diagnosis and size of uterus

Diagnosis	Size		Total
	Enlarged	Normal	
Incomplete abortion	37	2	39
Complete abortion	22	5	27
Missed abortion	9	0	9
Inevitable abortion	5	0	5
Blighted ovum	5	0	5
Threatened abortion	14	1	15
Total	92	8	100
>0.05			

Table (4.11) cross tabulation diagnosis and contents

Diagnosis	Contents							Total
	RPOC	empty GS	GS	Viable embryo	empty uterus (thin endometrium)	Fluid	dead fetus	
Incomplete abortion	37	0	1	0	0	1	0	39
Complete abortion	0	0	0	0	25	2	0	27
Missed abortion	0	0	2	0	0	0	7	9
Inevitable abortion	0	0	5	0	0	0	0	5
Blighted ovum	0	1	4	0	0	0	0	5
Threatened abortion	0	0	3	12	0	0	0	15
Total	37	1	15	12	25	3	7	100
p<0.01								

Table (4.12) cross tabulation diagnosis and history abortion

Diagnosis	History of abortion		Total
	no	yes	
Incomplete abortion	24	15	39
Complete abortion	14	13	27
Missed abortion	6	3	9
Inevitable abortion	2	3	5
Blighted ovum	1	4	5
Threatened abortion	11	4	15
Total	58	42	100
>0.05			

Table (4.13) cross tabulation diagnosis and causes of bleeding

Diagnosis	Causes of bleeding						Total
	Falling down	heavy work	infection	trauma	traveling	unknown	
Incomplete abortion	0	15	0	0	1	23	39
Complete abortion	0	8	1	1	0	17	27
Missed abortion	0	3	0	0	0	6	9
Inevitable abortion	0	3	0	0	0	2	5
Blighted ovum	0	1	0	0	0	4	5
Threatened abortion	1	6	0	0	0	8	15
Total	1	36	1	1	1	60	100
>0.05							

CHAPTER FIVE

Discussion, Conclusion, and Recommendations

Chapter five
Discussion, Conclusion and Recommendations

5.1. Discussion

This study done over 100 pregnant Sudanese ladies , who undergo vaginal bleeding during first trimester, their mean age was 29.56±6.57years ,table(4- 1)

According to age group data arranged and divided in to four groups (16-22year old),(23-29years old) ,(30-36 years old), and (37-43years old),the high frequency of vaginal bleeding was at age group of (23-29) years 34%,followed by (30-36)years (26%),and the lowest frequency was at age group of (16-22) years 18%.

Table (4-1) showed that the commonest age group that exposed to vaginal bleeding is 23-29 years old which represented by 34% of participants, this result corresponds to the result of study done by Dr. Kalyani Singh, in may 2016 which revealed that the most age group that exposed to vaginal bleeding is from 20 years old to 30 years old, this may be due to reproductive age.

Table (4-2) showed the participants According to occupations most of participants were house wife with proportion of 87%,and the worker was just 13%, this result agree with the study of vaginal bleeding in niala ciyy wich done by Abobakr Ali at 2007 in wich 75% of participants were house wifes. This high ratio explain that the occupation is not a reason for bleeding.

According to parity table(4-3) showed that most of participants were multi parous with rate of 84%,versus 16% of prime gravid ladies, which means the risk of undergoing bleeding is increases with parity, this result agree with the study of Abobakr Adam at 2007 in Abogibaiha city.

Pelvic pain is the commonest factor between most of participant whereas it takes proportion of 83%table(4_5).

Table (4-4) showed that 48% of participants have history of vaginal bleeding, most of them suffering from it one time ago with percentage of 59.5%.and the rest undergo bleeding more than one time (2,3,4,5,6 times ago),this result correspond to the result of Aisha Alameen 2012.

Table (4-7) showed that 79% of participants has no other abnormal findings in pelvic area, and 60% of them said that they undergo the bleeding spontaneously without known reason, theses high percent confirm that the main reason of bleeding is chromosomal insufficiency, which agree with the result of Abobkr Adam 2007.

Table (4-8) confirmed that incomplete miscarriage has highest frequency in causing of vaginal bleeding with percent of 39%, followed by complete miscarriage with 27%, then threatened miscarriage with15%, then missed, inevitable, blighted ovum ,9%, 5%, 5% in concequetively,man

previous studies agree with this study in the highest frequency of incomplete miscarriage.(Manal Alnoor(2015), Monzir Abdoalrahman(2016) and Abobakr Adam(2007).

Taple (4-6) showed that 60% of participants undergo bleeding without known causes, this result corresponds to the study that done by Omer algaily 2003 ,which summated that Most miscarriages (65%) occur without a clear cause, for the reason of The development of a baby is a complex process, If something goes wrong, the pregnancy usually fails.

5.2 Conclusion

Regarding the tables of data analysis we observed that:

60% of cases were in age group 23-36 which is the child bearing age, and 84% of cases were multi parous.

The incomplete miscarriage is record highest number with 39 cases, most of them in age group 23-29 years old, the 37 cases were having retained products of conception, and 24 were have history of miscarriage, and 23 of them were undergo the bleeding spontaneously.

27 cases were with complete miscarriage, 22 of them showed still bulky uterus, and just 5 casa showed normal size of uterus.

no any cases of ectopic or trophoplastic pregnancy.

In this study no any detection of congenital anomalies, and just 11% of participants was had other abnormal findings in pelvic region.

5.3 Recommendations:

Ultrasound is very important procedure in the investigation of vaginal bleeding causes during first trimester, in order to prevent the severe complications which might occur due to its presence.

All health care centers and clinics must be provided by ultrasound units.

The community, especially ladies, must be conversant with the complications of vaginal bleeding.

Any lady come with Amenorrhea should be examined by ultra sound, some cases of missed miscarriage and blighted ovum discovers by ultra sound suddenly, without any symptoms.

More studies should be conducted using Doppler ultrasound and endovaginal probe for more accurate results.

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Appendices

Appendices(a)

بسم الله الرحمن الرحيم

Sudan University of Science and Technology

College of graduate study

EVALUATION OF FIRST TRIMESTER VAGINAL BLEEDING USING ULTRASOUND

DATA COLLECTION SHEET

Basic information's:

1-date .....

2-patient ID .....

3-PATIENT AGE .....

4-SOCIO ECONOMIC STATUS: **a-low** ☐ **b-mid** ☐ **c-high** ☐

5-OCCUPATION: **a-house wife** ☐ **b-worker** ☐

6-parity: **a-prime gravid** ☐ **b-multi gravid** ☐ **c-grand multi gravid** ☐

7-date of LMp ☐

Patient medical status:

1-History of vaginal bleeding or miscarriage: **a-yes** ☐ **b-no** ☐

If yes number ☐

2-signs and symptoms:

i. **pelvic pain :** **a-yes** ☐ **b-no** ☐

ii. **part of products of conception expelled :** **a- yes** ☐ **b- no** ☐

Causes of bleeding:

a-un known ☐ **b-heavy work** ☐ **c-nutritional deficiency** ☐

d- trauma ☐ **e-infection** ☐ **f-alcohol** ☐

ultrasound findings :

1-Uterus size: **a- bulky** ☐ **b- normal** ☐

2-Abnormal findings in pelvis: **a-fibroid** ☐ **b- adenexeal mass** ☐ **c-incompetent cervix** ☐

Uterine cavity content: **a-viable embry** ☐ **b- gestational sac** ☐

c-retained products ☐ **d-dead embryo** ☐ **e-empty** ☐

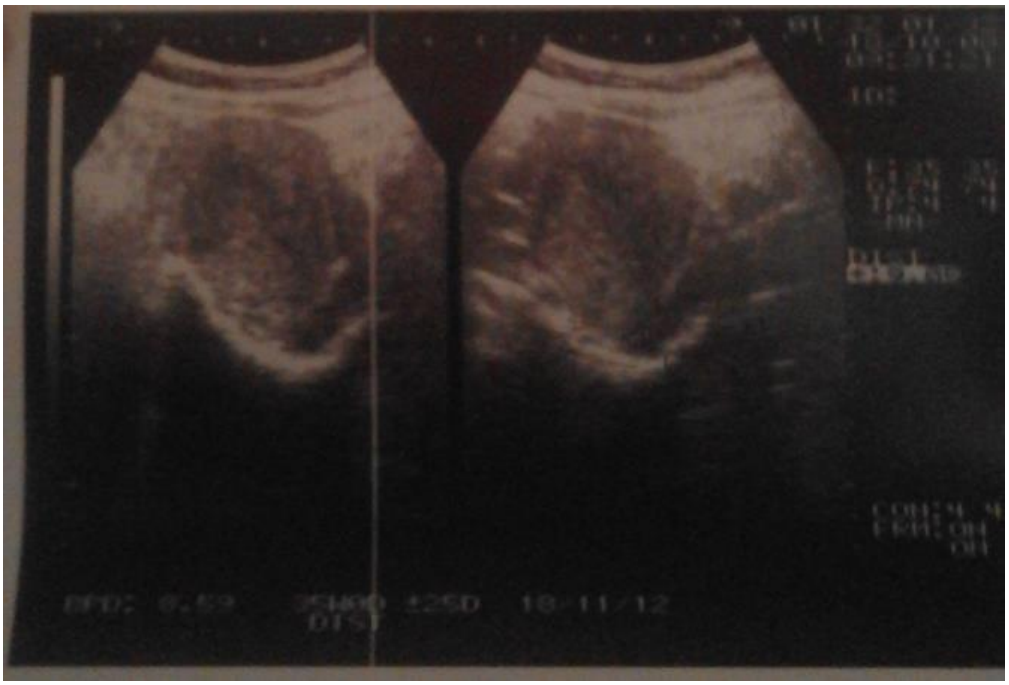
final diagnoses:

a- threatened miscarriag ☐ **b-complete miscarriag** ☐

b- in complete miscarria ☐ **d-missed miscarriage** ☐

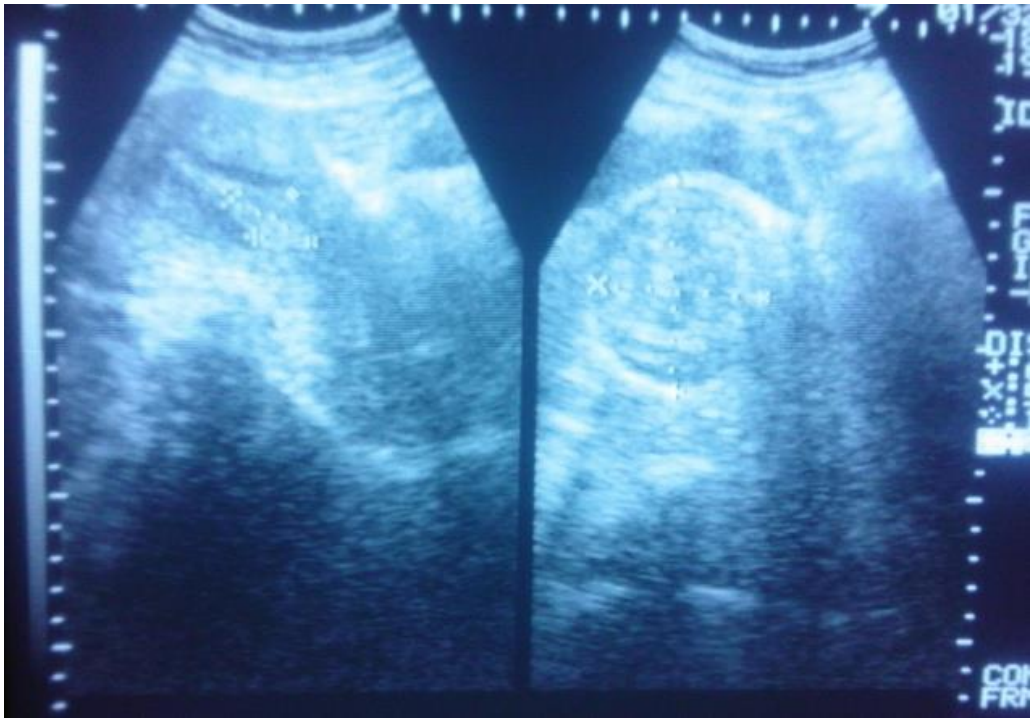
e- inevitable miscarriage ☐ **f- blighted ovum** ☐

Appendices(b)

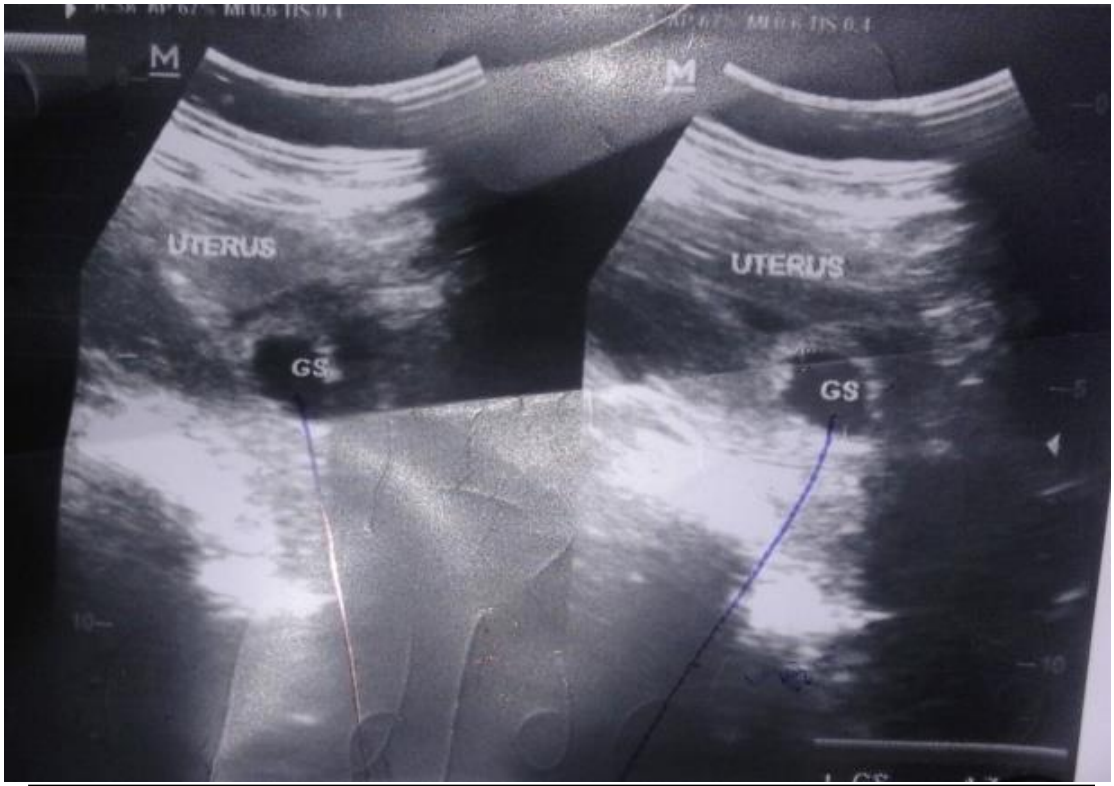


a.Female of 28 years old Incomplete miscarriage

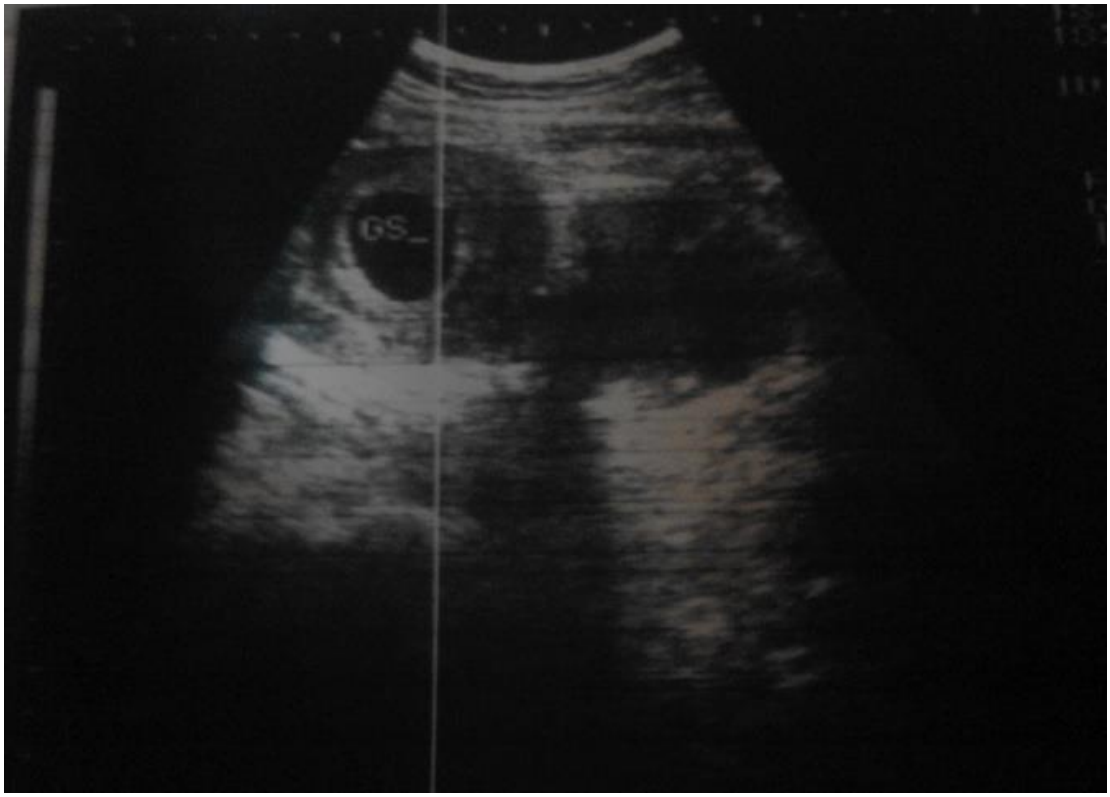
b-Femle of 30 years old missed miscarriage



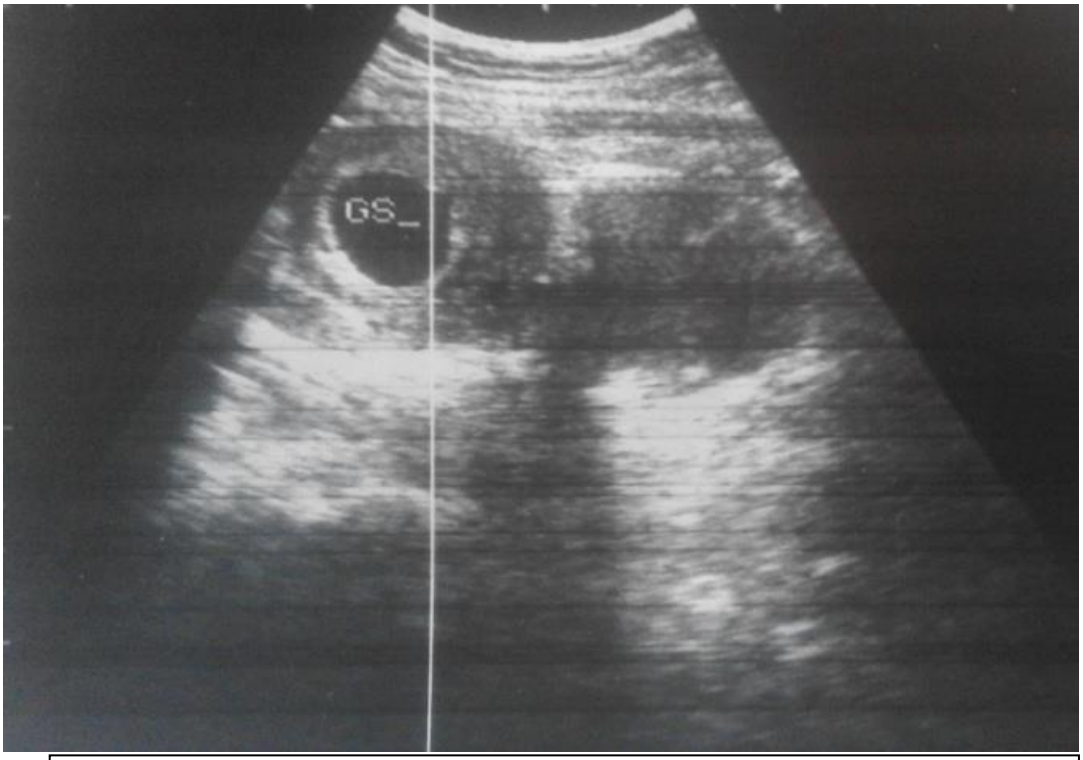
c-female of 25 years old incomplete miscarriage



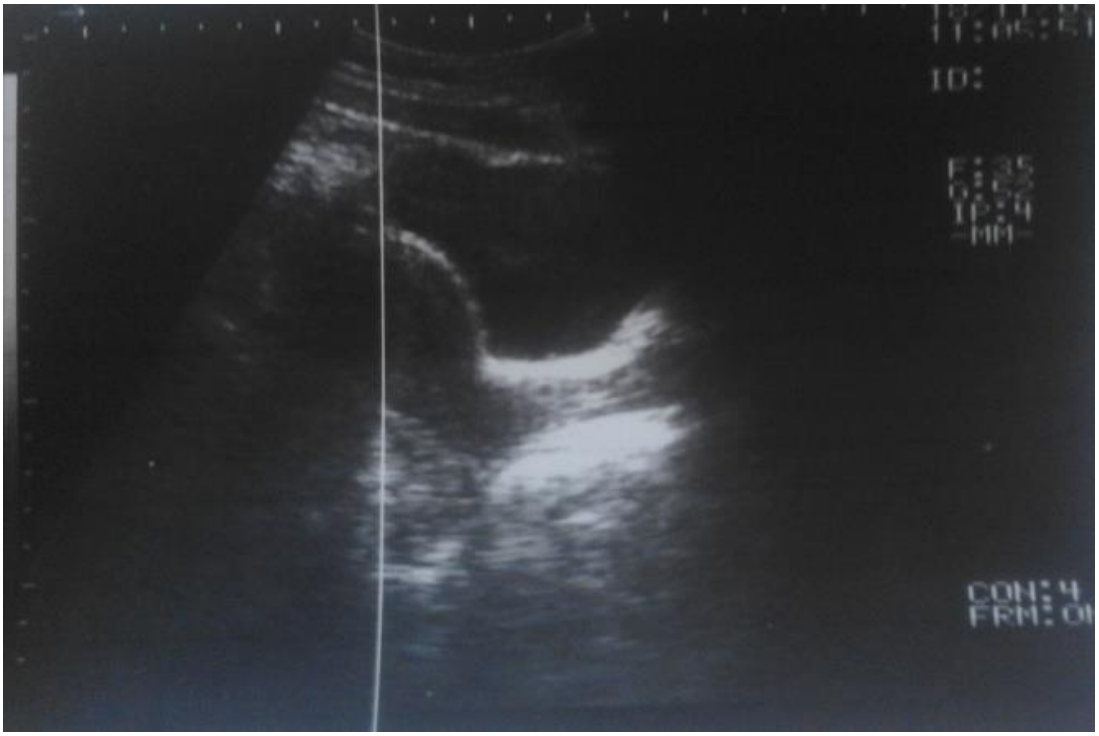
d-female of 20 years old in evitable miscarriage (low lying)



e-female of 40 years old blighted ovum (empty G S =3.5mm)



f- female of 27 years old ,blighted ovum



Female of 25 years old, complete miscarriage