

Study of Types of Miscarriage in Sudanese Patients during (2022-2023)

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Abstract :

Adescriptive, cross sectional study done in the Khartoum state /Sudan clinic, in the period from January 2022 to January 2023 evaluated the first trimester vaginal bleeding using ultrasound. For the different types of miscarriage as a part of vaginal bleeding during first trimester 200 women patients age group between 16 and 43 years old, , the patients were scanned trans abdominally and other scanned endovaginal, the study variable were (age, gravidity, occupation and parity, pelvic pain, socio-economic status. The study found that there were 40% of cases were incomplete miscarriage, 25% complete miscarriage, 13% threatened miscarriage, 18% missed miscarriage, inevitable miscarriage 4%, and there were no any cases of ectopic & trophoblastic pregnancy or blighted ovum reported. Regarding to history of pelvic pain study revealed that the majority of participants 77% had history of pelvic pain and 23 % of participants had no sign or symptoms of pelvic pain. Also revealed that 83% of participants had pelvic pain and 17% had no history of pelvic pain., study showed that the majority of participants had no history of miscarriage and they represent 71% and about 29% of participants had previous miscarriage .Study revealed that the commonest causes of vaginal bleeding in first trimester were incomplete miscarriage followed by complete miscarriage and the least causes were inevitable miscarriage which formed 5%. association between causes of Bleeding and Occupation the most (78.1%) of incomplete miscarriage cases were house wives, while (21.9%) of them were worker wives, (45.5%) of Threatened cases were house wives, while (54.5%) of them were worker wives, The most (65%) of missed abortion cases were house wives, while (35%) of them were worker Wife's. The study approved that .ultrasound is the method of choice for determining type of miscarriage. Study fund concern the correlation between final diagnoses and history of miscarriage was significant and Pvalue was 0.255 The study concluded that the routine ultrasound scans were very important for follow up for the pregnant women.

Key words: Vaginal bleeding Ultrasound Types of miscarriage Sudanese women

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I. 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, 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.(1). 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.(2) .Ultrasonography is the primary imaging modality in the study 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 vaginal bleeding and pain. (3) 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.(1). The combination of vaginal bleeding and absence of heartbeat is associated with 100% of embryonic mortality.(4). Using ultrasound 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.(5). 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.(5). Medical diagnostic ultrasound is considered to be an essential method in diagnosing the vaginal bleeding and miscarriage events and its causes, it play an important role in management (figure 1).



Figure (1) Female reproductive system

Ultrasound technique

Patient preparation, Full urinary bladder was required to obtain view because it displaces the bowel and bring the pelvic organ in it the field of view. Patient position and technique in to uterine scanning, Subjective were scanned while they were in supine position,no special breathing technique required,long axis image of the ovary measure length (superior to inferior) and Transverse image of the over measure the width (right to left).(6). In Trans vaginal U/S

Longitudinal image of the uterus (long axis) measure uterine length and height. Transverse image of the uterine fundus measure uterine width and Prior to examination history that taken from subjects included the age tribe and residence.(6). In abdominal U/S Long axis image of the uterins include the endometrial cavity measurement the uterine lens (superior to inferior) and height (anterior to posterior) Transverse image of the uterine fundus measure uterine width (right to left) Long axis image of the ovary measure ovarian length and height and Transverse image of the ovary measure ovarian width (left to right).(6).

Transvaginal method (TVS):

Patient should be empty urinary bladder.Ideally, a TVS study is performed with the patient on a gynecological examination table and the patient in a lithotomy position (flat on her back, legs flexed on the thighs, thighs flexed on the abdomen and abducted with stirrups used to support the feet and legs. This setup enables free, unobstructed movement of the probe in both vertical and horizontal directions by the operator, If a regular, flat examination table is used, the patient lies flat on her back with legs bent (approximately shoulder width apart) and feet flat on the table. This setup limits the vertical and horizontal movement of the probe but usually permits complete study of the pelvis, to allow for maximum pooling of small amount of intraperitoneal free fluid, a minor reversed trendelen burg position desirable. If tilting of the examination table is not possible, a sponge block or other convenient objects (pillow, rolled sheet) can be placed behind the patient lower back to tilt the pelvis forward. Tilting the pelvis in this fashion may also be helpful to better visualize the fundus of an anteverted uterus. Elevating the pelvis provides extra space for the transducer handle and makes it easier for transducer tilting in the coronal plane.(6). Trans abdominal method the entire TAS study is generally performed with the patient in a supine or recumbent position.(6). A reasonably full urinary bladder is essential for TAS when it is used as the primary technique. Patients are instructed to arrive with a full bladder by drinking 20 to 30 ounces of water or other liquids about one hour before the scheduled examination. This is a general guideline and some patients will be overfilled and unable to hold on .

shape and the fundus of the normal, no gravid anteverted uterus is covered by the bladder, If the roof of the bladder appears rounded and extends significantly beyond the fundus of a normal size uterus, the bladder is probably too full. The bladder is likely under distended if the normal uterus is difficult to visualize due to interference from overlying bowel gas. If a patient is restricted from drinking fluid (potential surgical candidate) or is incontinent, the bladder can be filled in a retrograde fashion with a Foley catheter by a qualified individual however this is rarely done since the advent of TVS, Re-evaluation of the pelvis and lower abdominal following complete or partial voiding may be helpful in certain situations, e.g. when it is uncertain that a central pelvic cyst represents the bladder or a cyst of other origin.(6)

II. Material And Methods

Type of the study

The study was a descriptive, cross sectional study to evaluate the causes of vaginal bleeding in first trimester and pregnancy outcome using ultrasound.

Area of study

The study was done at clinic in Khartoum state in Sudan .

Study Duration

The study was conducted during the period from January 2022 to January 2023.

Sample size

The study sample consisted of (200 patients) were undergo ultrasound examination at clinic in Khartoum state.

Inclusion criteria

All Sudanese women with vaginal bleeding in first trimester attending to the ultrasound department during the period of study.

Exclusion criteria

Women with vaginal bleeding in second and third trimester and normal vaginal bleeding (menorrhoea).

Equipment used in the study

Ultrasound machines which used in this study were Mindray and Sonoscape with convex (Range from 2.5 to 3.5MHZ) and TVS probes (Range from 7 to 10 MHZ). Color flow map, power, continuous and pulsed wave Doppler technique.

Variables of the study

Variables like; age, occupation, gravidity, parity, pelvic pain , socio-economic status and ultrasound finding.

Ethical consideration

The ethical approval was granted from the department of radiology which include commitment of no disclosure of any information concerning the patient identification.

Data analysis

Data was analyzed by using SPSS Version 28 -frequencies and percentages.

III. Result

Table (1) Distribution of patients according to their ages

Age/year	Frequency	Percent
Less than 20	28	14%
20 - 25	94	47%
26 - 30	44	22%
More than 30	34	17%
Total	200	100

Table(2)The economic status

Economic status	Frequency	Percent
low	96	48%
mid	86	43%
high	18	9%
Total	200	100

Table (3) Distribution of patients with respect to occupation

Occupation	Frequency	Percent
house wife	136	68%
Worker	64	32%
Total	200	100

Table (4) Distribution of patients with respect to of Gravid

Gravid	Frequency	Percent
prime gravid	40	20%
multi gravid	160	80%

Total	200	100
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Table (5) Frequency distribution of history of pelvic pain

History of pelvic pain	Frequency	Percent
Yes	77	77%
No	23	23%
Total	200	100

Table (6) Frequency distribution of history of abortion

History of abortion	Frequency	Percent
Yes	58	29
No	142	71
Total	200	100

Table (7) Frequency distribution of cause of bleeding

Cause of bleeding	Frequency	Percent
unknown	144	72%
heavy work	36	18%
nutritional deficiency	10	5%
Trauma	10	5%
Total	200	100

Table (8) Distribution of Uterine size among testing group

Uterine size	Frequency	Percent
Enlarged	174	87%
Normal	26	13%
Total	200	100

Table (9) Distribution of uterine fibroid

Uterine fibroid	Frequency	Percent
yes	12	6%
NO	188	94 % Total 100 100%
Total	200	100

Table (10) Distribution of type of miscarriage among cases presented in this study

Type of miscarriage	Frequency	Percent
threatened miscarriage	26	13%
complete miscarriage	50	25%
incomplete miscarriage	80	40%
missed miscarriage	36	18%
inevitable miscarriage	8	4%
Total	200	100

Table (11) Correlation between final diagnoses and history of miscarriage

final diagnoses	history of miscarriage-yes	history of miscarriage-No	Total
threatened miscarriage	46.2%(12)	53.8%(14)	26
complete miscarriage	40.0%(20)	60.0%(30)	50
in complete miscarriage	20.0% (16)	80.0%(64)	80
in complete miscarriage	22.2% (8)	77.8%(28)	36
inevitable miscarriage	25.0% (2)	75.0%(6)	8
Total			200

P value=.255

IV. Discussion

This study had been conducted in Khartoum state to evaluate first trimester vaginal bleeding, attended to ultrasound clinic at area of study in the clinic, there were 200 cases in this study, all cases were suffering from first trimester vaginal bleeding and their ages were range from (16-43)years. The largest group with vaginal bleeding came for scanning were (20-25) years old and represent about 94 patients forming 47%, (26-30) years were 44 patients forming 22%, (more than 30) years were 34 patients forming 17% and less than 20 years were 28 patients forming 14% . Table (1) showed that the commonest age group that exposed to vaginal bleeding was 20-25 years old which represented by 47% of participants this result corresponds to result of study done the role of ultrasound in diagnosis of vaginal bleeding during pregnancy found that the range of group accumulation for vaginal bleeding is (20-30) years). According to economic status Table 2 showed that most of participants had low economic status and they forming 48% of participants and 43% of participants had mid

economic status and only 9% of participants had high economic status as shown in (table - 1). Regarding to patients occupation it just was two categories house wives and worker with frequency 136 (68 %) as house wives and 64 (32%) as worker respectively as shown in (Table 3) and (fig 2), this result agree with the study of vaginal bleeding in niala city wich done by (7) in which 75% of participants were house wives, this high ratio explain that the occupation is not a reason for bleeding. Concerning distribution of patients with respect to number of gravid, the study found that most patients with vaginal bleeding were grand multipara 80% and least were primigravida 20%, as shown in (table 4) and, which means 30 the risk of undergoing bleeding is increases with parity, this result agree with the study of (7). Regarding to history of pelvic pain study revealed that the majority of participants 77% had history of pelvic pain and 23 % of participants had no sign or symptoms of pelvic pain as shown in (table 4-5) this agree with study done by (8) Also revealed that 83% of participants had pelvic pain and 17% had no history of pelvic pain. Table (4-6) showed that the majority of participants had no history of miscarriage and they represent 71% and about 29% of participants had previous miscarriage as shown in table (4-5), this result correspond to the result of (9). as shown in (table 4-10) this also agree with study done by (8) (study of first trimester vaginal bleeding using ultrasonography) which revealed that the commonest causes of vaginal bleeding in first trimester were incomplete miscarriage followed by complete miscarriage and the least causes were inevitable miscarriage which formed 5%.Notes from the table (8) and table (6) association between causes of Bleeding and Occupation the most (78.1%) of incomplete miscarriage cases were house wives, while (21.9%) of them were worker wives, (45.5%) of Threatened cases were house wives, while (54.5%) of them were worker wives, The most (65%) of missed abortion cases were house wives, while (35%) of them were worker Wives. From these point above our study agreed with (7,10) .

V. Conclusion

Study concluded that first trimester vaginal bleeding using Ultrasound provided good diagnosis in the complication of early pregnancy. The study showed that the common problems in age between 20-25 years in house wife. In missed abortion higher were multipara, and least primigravida 30% with age 20-25years and least aged were less than 20 years 14%.From this study the most causes of vaginal bleeding in first trimester of the patients were incomplete miscarriage and complete miscarriage, where the least common causes were missed miscarriage, threatened miscarriage and inevitable miscarriage.

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