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Clinical outcome of the vaginal bleeding observed in first trimester of pregnancy diagnosed by ultrasonography

Dr. Shalini Kumari[1], Dr. Pallawi Singh[2*], Dr. Ajeet Kumar[3]

[1] Senior Resident, Department of Obstetrics & Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar, India
[2] Associate Professor, Department of Obstetrics & Gynaecology, Sri Krishna Medical College and Hospital, Muzaffarpur, Bihar, India
[3] Senior Resident, Department of Pathology, Indira Gandhi Institute of Medical Sciences, Patna, Bihar, India
[*] Corresponding Author: Dr. Pallawi Singh

Abstract
Sonography plays important role in determining that a normal foetus is present, alive and to exclude other causes of bleeding such as ectopic pregnancy, molar pregnancy and risk of miscarriages which are associated with heavy bleeding during first trimester of pregnancy.
Hence based on above reported findings the present study was planned to assess the role of ultrasound in the accurate diagnosis of causes of first trimester bleeding in pregnancy and the management of the condition.
50 pregnant females referred to Department of Obstetrics & Gynaecology in Sri Krishna Medical College and Hospital, Muzaffarpur were enrolled in the present study. The pregnant women having vaginal bleeding were considered in the present study. Ultrasonographic examination was done. Trans abdominal and Trans vaginal examination was done to observe the position of the gestational sac. Cardiac activity and Crown-rump length (CRL) of the fetus also noted. Clinical examination was done in the doubtful cases.
Ultrasound is a very valuable tool in the diagnosis of various causes of bleeding per vagina in first trimester of pregnancy. Ultrasound positively helps in assessing the safe continuation of pregnancy, timely intervention for abnormal pregnancy and avoiding unnecessary intervention in those cases who do not need them.

Keywords: first trimester bleeding, ultrasound examination, clinical examination, vaginal bleeding

Introduction
Vaginal bleeding in the first trimester occurs in about one fourth of pregnancies. About one half of those who bleed will have miscarriage. Guarded reassurance and watchful waiting are appropriate if fetal heart sounds are detected, if the patient is medically stable, and if there is no adnexal mass or clinical sign of intraperitoneal bleeding. Discriminatory criteria using transvaginal ultrasonography and beta subunit of human chorionic gonadotropin testing aid in distinguishing among the many conditions of first trimester bleeding. Possible causes of bleeding include subchorionic hemorrhage, embryonic demise, anembryonic pregnancy, incomplete abortion, ectopic pregnancy, and gestational trophoblastic disease. When beta subunit of human chorionic gonadotropin reaches levels of 1,500 to 2,000 mIU per mL (1,500 to 2,000 IU per L), a normal pregnancy should exhibit a gestational sac by transvaginal ultrasonography. When the gestational sac is greater than 10 mm in diameter, a yolk sac must be present. A live embryo must exhibit cardiac activity when the crown-rump length is greater than 5 mm. In a normal pregnancy, beta subunit of human chorionic gonadotropin levels increase by 80 percent every 48 hours. The absence of any normal discriminatory findings is consistent with early pregnancy failure, but does not distinguish between ectopic pregnancy and failed intrauterine pregnancy. The presence of an adnexal mass or free pelvic fluid represents ectopic pregnancy until proven otherwise. Medical management with misoprostol is highly effective for early intrauterine pregnancy failure with the exception of gestational trophoblastic disease, which must be surgically evacuated. Expectant treatment is effective for many patients with incomplete abortion. Medical management with methotrexate is highly effective for properly selected patients with ectopic pregnancy. Follow-up after early pregnancy loss should include attention to future pregnancy planning, contraception, and psychological aspects of care [1].
An ectopic pregnancy occurs when the fertilized egg does not implant in the uterus but instead implants somewhere else, usually in one of the *fallopian tubes*. If the fallopian tube ruptures, internal bleeding can occur. Blood loss may cause weakness, fainting, pain, shock, or even death.
Sometimes vaginal bleeding is the only sign of an ectopic pregnancy. Other symptoms may include abdominal, pelvic, or shoulder pain. These symptoms can occur before you even know you are pregnant. If you have these symptoms, call your ob-gyn or other health care professional. The pregnancy will not survive, and it must be removed with medication or surgery [2].
Several problems with the placenta later in pregnancy can cause bleeding:

- **Placental abruption:** In placental abruption, the placenta detaches from the wall of the uterus before or during birth. The most common signs and symptoms are vaginal

bleeding and abdominal or back pain. Placental abruption can cause serious complications if it is not found early. The baby may not get enough oxygen, and the pregnant woman can lose a large amount of blood.

- **Placenta previa:** When the placenta lies low in the uterus, it may partly or completely cover the cervix. This is called placenta previa. It may cause vaginal bleeding. This type of bleeding often occurs without pain. Some types of placenta previa resolve on their own by 32–35 weeks of pregnancy as the lower part of the uterus stretches and thins out. Labor and delivery then can happen normally. If placenta previa does not resolve, you may need to have the baby early by cesarean delivery.
- **Placenta accrete:** When the placenta (or part of the placenta) invades and is inseparable from the uterine wall, it is called placenta accreta. Placenta accreta can cause bleeding during the third trimester and severe blood loss during delivery. Most cases can be found during pregnancy with a routine ultrasound exam. Sometimes, though, it is not discovered until after the baby is born. If you have placenta accreta, you are at risk of life-threatening blood loss during delivery. Your ob-gyn will plan your delivery carefully and make sure that all needed resources are available. You may need to have your baby at a hospital that specializes in this complication. Hysterectomy often needs to be done right after delivery to prevent life-threatening blood loss.

A miscarriage is a pregnancy that ends before the 20th week of gestation. Some estimates suggest that up to 20 percent of known pregnancies end in miscarriage, and even more pregnancies result in miscarriage before a woman realizes she's pregnant.

Vaginal bleeding, especially if accompanied by abdominal cramps, may be a sign of miscarriage, and is classified as a "threatened miscarriage" or an "inevitable miscarriage." If your cervix is closed and vaginal bleeding is the only symptom you're experiencing, you are likely experiencing a threatened miscarriage. This means that the pregnancy has not ended, despite vaginal bleeding, and it may or may not end in the future. A miscarriage is inevitable if the cervix is dilated, bleeding is increasing, and cramps are present.For about half of women who experience a threatened miscarriage in the first trimester, the bleeding resolves and the pregnancy continues as normal. In the other 50 percent, the bleeding becomes heavier and a miscarriage occurs [3].

Sonography plays important role in determining a normal foetus is present, alive and to exclude other causes of bleeding such as ectopic pregnancy, molar pregnancy and risk of miscarriages which are associated with heavy bleeding during first trimester of pregnancy.

Hence based on above reported findings the present study was planned to assess the role of ultrasound in the accurate diagnosis of causes of first trimester bleeding in pregnancy and the management of the condition.

Materials & Methodology

50 pregnant females referred to Department of Obstetrics & Gynaecology in Sri Krishna Medical College and Hospital, Muzaffarpur were enrolled in the present study. The pregnant women having vaginal bleeding were considered in the present study. Ultrasonographic examination was done. Trans abdominal and Trans vaginal examination was done to observe the position of the gestational sac. Cardiac activity and Crown-rump length (CRL) of the fetus also noted. Clinical examination was done in the doubtful cases.

The Inclusion Criteria includes the females with Positive Pregnancy Test, having Amenorrhoea for 3 months and observed bleeding from minimal flow to heavy flow.

Results & Discussion

50 females observed with the abnormal vaginal bleeding were evaluated in the present study. The data was collected, presented and discussed as below.

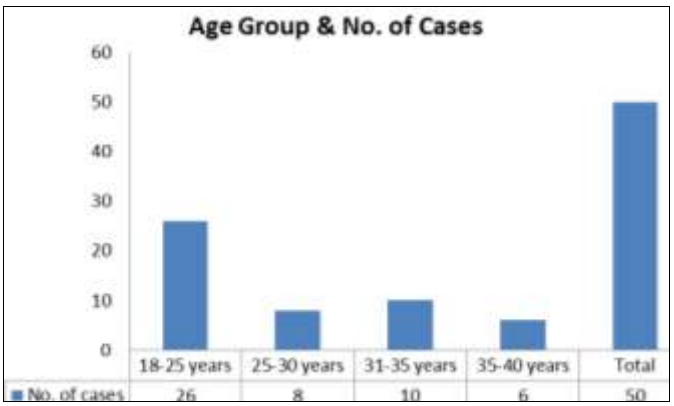

Fig 1: Age & No. of cases

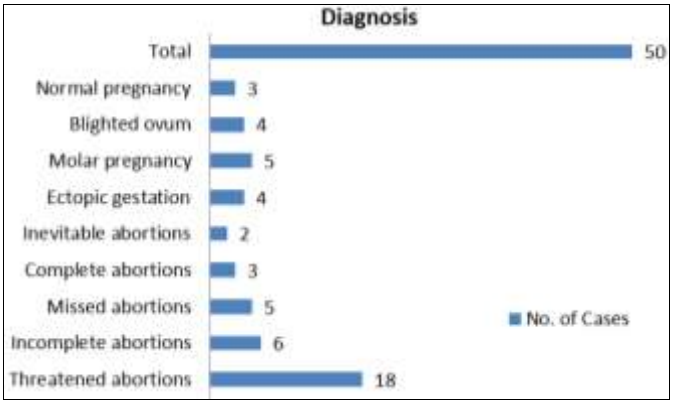

Fig 2: indicates Ultrasonographic diagnosis seen in the selected population.

Ultrasonography is one of the most important and useful diagnostic tool in the field of modern medicine. Being non-invasive, safe and without hazards of radiation, it has gained wide acceptability, as an integral part of basic investigative procedures. The convenience, high portability, rapidity, and accuracy are few of the advantages of ultrasound over the other procedures. In the last two decades, ultrasound has become an essential diagnostic imaging modality in the field of obstetrics and is being extensively used for evaluation of pregnancy. Obstetrical ultrasound enables the clinician to evaluate the development, growth, and wellbeing of the fetus. The ability to study the fetus in the intrauterine environment has been notably enhanced by dramatic improvement in imaging. Recent improvements in transvaginal ultrasound

permit the extremely detailed observation of the morphology of the early conceptus in utero [4].

First-trimester bleeding is not only associated with miscarriage but also with a higher rate of pregnancy complications. First trimester bleeding is often a sign of threatened abortion and as such worrisome for both patient and doctor. If on ultrasound a vital foetus is observed and there is a blood collection or clot around the foetal sac, it seems worthwhile to advice the patient to take bed rest; however, there is no evidence that any conservative or medical management is beneficial. Neither progesterone nor HCG injections have demonstrated to be beneficial in improving pregnancy outcome. Bleeding during first trimester was associated with increased risk of preterm delivery [5]. Because of impaired implantation and invasive trophoblasts, spontaneous abortion may occur in early pregnancy while preterm delivery, PPROM, placental ablation and preeclampsia may happen in later period. Ultrasound examination was considered an important investigation for the diagnosis of the cause of bleeding. The studies of Deutchman *et al*. and Thorstensen *et al*. it was seen that in pregnancies with first trimester vaginal bleeding the most important diagnostic actions were transvaginal ultrasound and evaluating the rising of serum level of βHCG [6, 7].

Beginning with Nielsen and Hahlin in 1995, a number of authors have advocated for expectant management of some inevitable abortions [8]. 3-8 Hurd *et al*. [9] and Luise *et al*, [10] both demonstrated rates of successful miscarriage of 70% with expectant management, whereas Jurkovic *et al*, [11] reported only 25% successful spontaneous abortion.3,4,9 In our population of patients who were managed expectantly, approximately 1 in 8 underwent an emergency curettage.

Conclusion

Ultrasound is a very valuable tool in the diagnosis of various causes of bleeding per vagina in first trimester of pregnancy. Ultrasound positively helps in accessing the safe continuation of pregnancy, timely intervention for abnormal pregnancy and avoiding unnecessary intervention in those cases who do not need them.

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