

Evaluation of First Trimester Vaginal Bleeding In Early Pregnancy by Transvaginal Sonography

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Abstract:- Vaginal bleeding in the first trimester is a common obstetric situation ranging from an insignificant episode to a life threatening emergency. The major causes are abortion, ectopic, and molar pregnancy. It occurs in about a one fourth of pregnancies, approximately half of whom will miscarry^[5], while the other half will stop bleeding and complete a normal pregnancy. Ultrasonography is playing an increasing role in the diagnostic process. This study was taken up to evaluate its utility vis-à-vis clinical examination findings. Our study has been done on 50 patients with per-vaginal bleeding in the first trimester of pregnancy who were referred to the department of Radio-diagnosis were studied on TVS after taking consent. In the present study, the most common cause of bleeding in first trimester was missed abortion. The next common cause was Threatened abortion followed by anembryonic pregnancy then Vesicular mole, ectopic pregnancy, incomplete abortion and inevitable abortion. Patient who came with first trimester per vaginal bleeding to obstetrician are difficult to diagnose precisely by clinical and laboratory findings. Therefore Transvaginal sonography is modality of choice to diagnose causes accurately.

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I. Introduction

Ultrasound imaging plays a major role in evaluation of pregnancies especially in the first trimester, as it has not been found to cause any known biological side effects in the fetus at the usual diagnostic frequencies of between 2.5 to 15MHz, even after extensive use in obstetrics for about fifty years⁽¹⁾. Transvaginal ultrasound does not need general anaesthesia and gives immediate information⁽²⁾. First trimester bleeding is vaginal bleeding which occurs during the first 12 weeks of pregnancy and it by default constitutes a threatened abortion^[3, 4] until a non-threatening cause is identified. First trimester per vaginal bleeding is one of the common obstetric problem. It is one of the common reason for ultrasonography examination for the emergency admissions to the obstetric department. It occurs in about a one fourth of pregnancies, approximately half of whom will miscarry^[5], while the other half will stop bleeding and complete a normal pregnancy^[6]. There are several diagnostic possibilities to be considered, for women presenting with first trimester per vaginal bleed. The causes are many and includes many conditions from obstetrics causes to non-obstetric causes. Probable causes of bleeding include obstetric and non-obstetric causes in reproductive age group. Non obstetric causes include cervicitis, vaginitis, trauma, cystitis, cervical cancer or polyps. Obstetric causes include subchorionic hemorrhage, embryonic demise, anembryonic pregnancy, incomplete abortion, ectopic pregnancy and gestational trophoblastic disease^[4,5]. Only clinical examination of such patients cannot give definitive diagnosis. A Patient with poor history is difficult to diagnose to both obstetrician and sonologist. With the availability of patient's history and obstetrician's suspicion, it becomes easy to sonologist to give accurate diagnosis. For this real time transvaginal ultrasound is extremely useful and boon to obstetrician and sonologists both.

II. Materials And Methods

After taking approval from ethical committee, study of per-vaginal bleeding in first trimester of pregnancy was evaluated by transvaginal sonography on 50 patients of Department of Radiology at Dr. Vithalrao Vikhe patil Medical college and hospital , Ahmednagar , Maharashtra from December 2018 to september 2019.

Study Design: Descriptive cross-sectional study.

Study Location: This was a tertiary care teaching rural hospital based study done in Department of Radiology at Dr. Vithalrao Vikhe patil Medical college and hospital , Ahmednagar , Maharashtra.

Study Duration: December 2018 to september 2019.

Sample size: 50 patients.

Subject and selection Method: Patients which were referred to the radiology department of the tertiary care hospital for transvaginal ultrasound and met the inclusion, exclusion criteria were included in the study.

Aims & Objectives:-

1. To evaluate the role of transvaginal ultrasound in the diagnosis of causes of bleeding per vaginum in first trimester.
2. To assess the role of transvaginal ultrasound in the outcome of pregnancy in patients presenting with first trimester per vaginal bleeding.

Inclusion Criteria:-

- 1)Patients presenting anywhere from the first day of the last menstrual cycle to the first twelve weeks of pregnancy .
- 2) Patient who gives consent for examination.

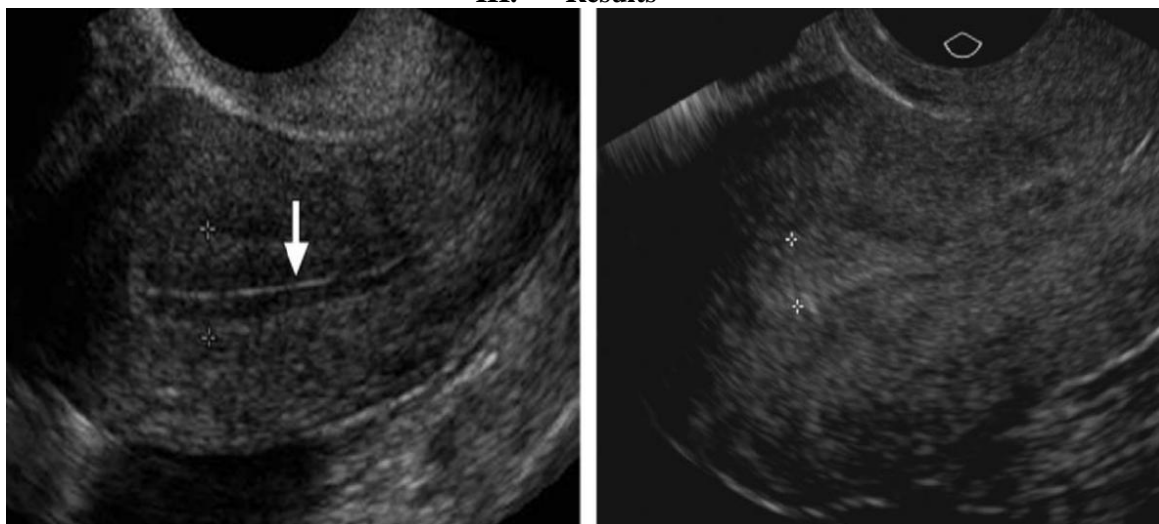
Exclusion criteria:-

- 1)Women of reproductive age with a missed period but a negative urine pregnancy test and patients who refused admission to the hospital were excluded from the study.
- 2)All non-obstetrical causes of vaginal bleeding and All patients with more than 12 completed weeks of gestation are excluded from study.

Machine : USG machines used for scanning were: GE F6 Logiq & Mindray DC-7.

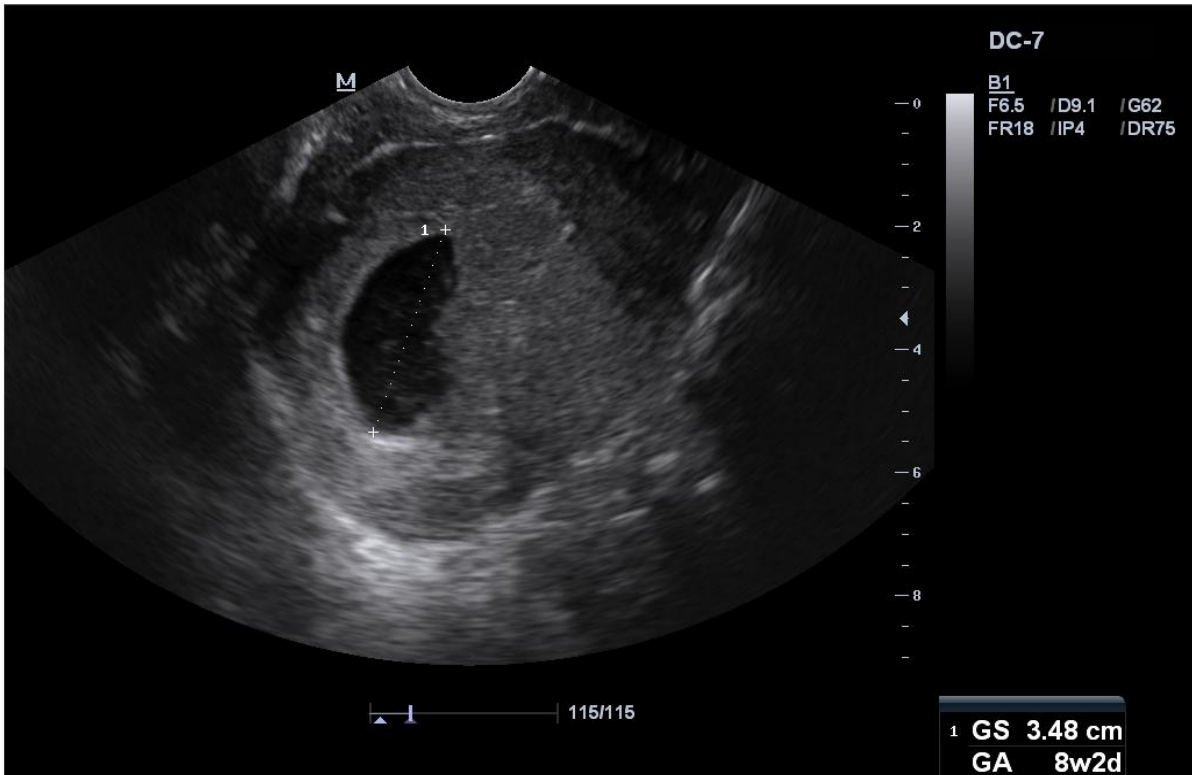
Procedural methodology : Patient who came with complaints of vaginal bleeding in first twelve weeks of pregnancy who were referred to radiology department were taken .Consent from the patient was taken for transvaginal sonography evaluation. Patient was instructed to empty the bladder for better evaluation of uterus and adnexa. Probe was cleaned and condom should be applied to avoid contamination. Patient was put in lithotomy position and probe was inserted in the vagina for evaluation of pathology.

III. Results

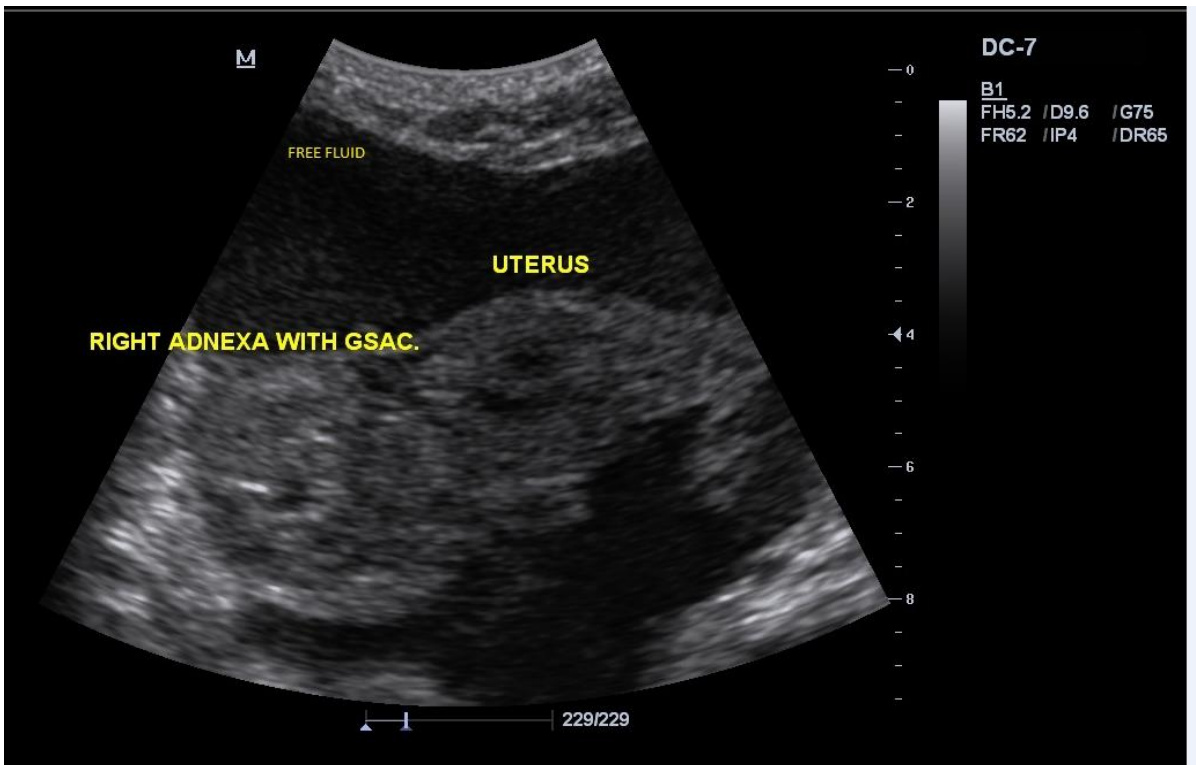


TVS

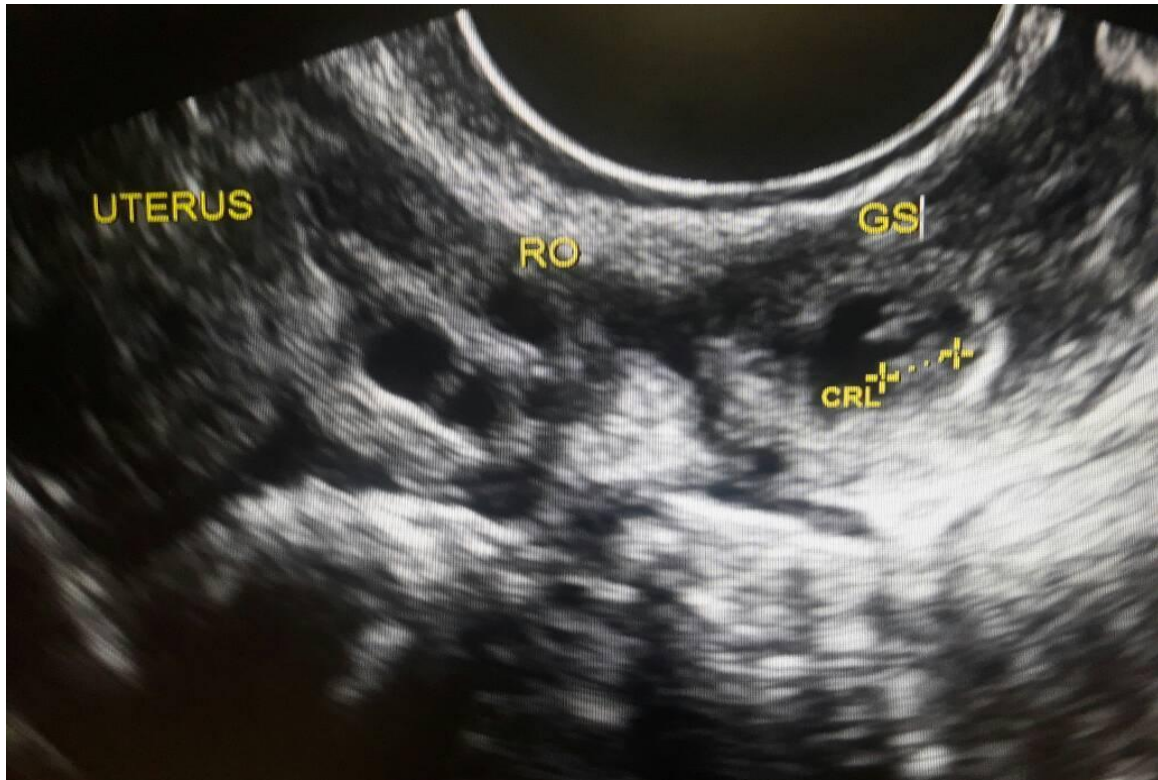
[Figure No. 1]Normal endometrium in the middle to late phases of the menstrual cycle.



[Figure No. 2]TVS of an irregular shaped and empty gestational sac of mean sac diameter to 8w 2 d without any fetal pole – Anembryonic Pregnancy



[Figure No. 3]TVS of the uterus and adnexa showing a gestational sac in the right adnexa with empty uterus and free fluid with echoes in pelvis – Ruptured Ectopic Pregnancy .



[Figure No. 4] TVS showing a gestational sac with a fetal pole but with absent fetal cardiac activity indicating a Missed Abortion



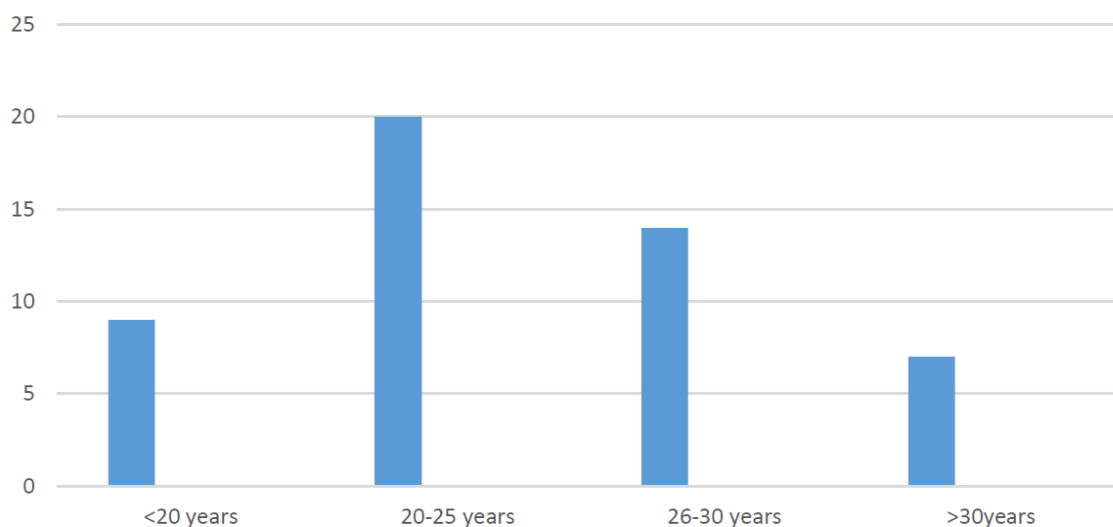
[Figure No. 5] Complete hydatidiform mole. Transabdominal sonography in transverse section image of the uterus shows distension of the uterine cavity by hyperechoic material with numerous small, irregular cystic spaces within (arrowheads). The normal hypoechoic myometrium can be seen stretched at the periphery. There is no recognizable fetal tissue.

RESULTS:-

AGE WISE DISTRIBUTION OF CASES IN PRESENT STUDY

AGE GROUP	NO. OF CASES	PERCENTAGE
< 20 Years	9	18
20 – 25 Years	20	40
26 – 30 Years	14	28
> 30 Years	07	14
TOTAL	50	100

GRAPH 1 : AGE WISE DISTRIBUTION OF CASES IN PRESENT STUDY

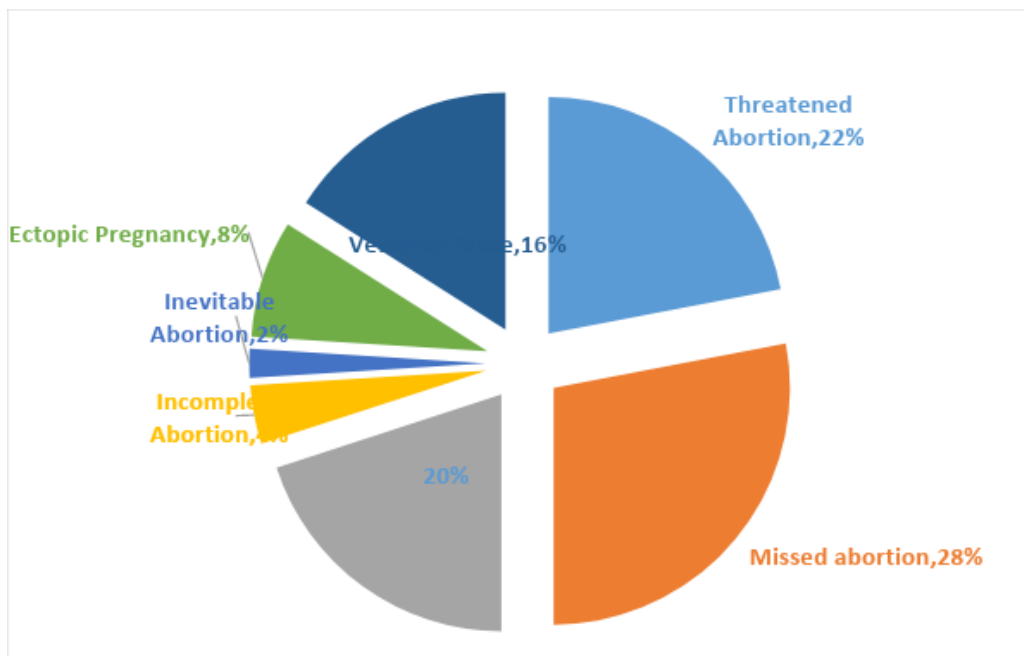


In the present study, the majority of patients were from the age group of 20 – 25 years, totaling 20 (40%), 14 patients (28%), were from the age group 26 – 30 years, 9 patients (20%), were less than 20 years and 7 patients (10%) were more than 30 years. Of the women more than 30 years, 2 were threatened abortion and 2 were ectopic pregnancies and 3 were blighted ovum.

DISTRIBUTION OF PROVED CASES OF CAUSES OF BLEEDING IN FIRST TRIMESTER^[5]

DISTRIBUTION OF PROVED CASES OF CAUSES OF BLEEDING IN FIRST TRIMESTER, IN PRESENT STUDY. CAUSE OF BLEEDING	NO. OF CASES	PERCENTAGE
Threatened Abortion	11	22
Missed Abortion	14	28
Anembryonic Pregnancy	10	20
Incomplete Abortion	02	04
Inevitable Abortion	01	02
Complete Abortion	00	00
Ectopic Pregnancy	04	08
Vesicular Mole	08	16
Total	50	100

In the present study, the most common cause of bleeding in first trimester was missed abortion. 14 patients (28%) were Missed abortions. The next common cause was Threatened abortion in 11 cases (22%) followed by anembryonic pregnancy in 10 cases (20%), followed by Vesicular mole 8 cases (16%), 4 cases (8%) of ectopic pregnancy, 02 cases (4%) of incomplete abortion and 01 case (2%) of inevitable abortion.



CORRELATION OF NUMBER OF CASES BASED ON ULTRASOUND AND CLINICAL DIAGNOSIS

CORRELATION OF NUMBER OF CASES BASED ON ULTRASOUND AND CLINICAL DIAGNOSIS Cases	Clinical Diagnosis	TVS Diagnosis	Disparity
Threatened abortion	30	11	19
Missed abortion	13	14	01
Anembryonic Pregnancy	00	10	10
Incomplete Abortion	04	02	02
Inevitable Abortion	00	01	01
Ectopic Pregnancy	02	04	02
Vesicular Mole	01	08	07
Total	50	50	42

In the present study, clinically 30 cases (60%) were diagnosed as threatened abortion, 13 cases (26% as missed abortion), 4 patients (8%) were clinically diagnosed as incomplete abortion. In 2 patients (4%) diagnosis of Ectopic pregnancy was made. In 1 patient (2%) a clinical diagnosis of vesicular mole was made. Total percentage of disparity – 84%.

COMPARISON OF CLINICAL AND ULTRASOUND DIAGNOSTIC ACCURACY

COMPARISON OF CLINICAL AND ULTRASOUND DIAGNOSTIC ACCURACY No. of Cases	Clinical accuracy	TVS accuracy rate
Threatened Abortion	22%	100
Missed Abortion	98%	100
Incomplete Abortion	50%	100
Ectopic Pregnancy	50%	100
Vesicular Mole	16%	100
Inevitable abortion	-	100
Anembryonic Pregnancy	-	100

IV. Discussion

The majority of the cases were of missed abortion, followed by threatened abortion. 10 cases were diagnosed as anembryonic pregnancy and none of these cases could be diagnosed clinically as blighted ovum. This holds true with the studies available. Of the 4 cases of ectopic pregnancy in the study, all were correctly diagnosed by ultrasound, and were proved to be ectopic pregnancy in laparotomy. The results of my study correlate well with rama sofath^[11] et.al , neelam bhardwaj et.al^[12].and mamatha shivnagappa etal^[13]. Dr.Vishwanath et.al ^[14]. In study done by mamatha shivanagappa et.al the total number of disparities between clinical and

ultrasound diagnosis of the causes of bleeding in first trimester was 118 and the percentage of disparity 71% while in my study total percentage of disparity was 84%. the disparity was more for threatened abortion, anembryonic pregnancy and vesicular mole. It was impossible to diagnose anembryonic pregnancy, molar pregnancy clinically. so, TVS has an advantage over clinical speculation and is boon for obstetricians.

V. Conclusion

Patients who come with the chief complaint of bleeding per vaginum in the first trimester to the obstetrics department are at high risk of abnormal pregnancy. They are subjected to various clinical examinations and laboratory examinations, but still obstetricians cannot come to final diagnosis. Here, transvaginal ultrasound helps them. TVS helps to come to an accurate diagnosis.

It helps in emergency management and prevents mismanagement of the cases. In my present study, TVS has helped in establishing diagnosis of clinically misdiagnosed patients.

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