COMPARATIVE STUDY OF CLINICAL VERSUS USG IN DIAGNOSIS OF EARLY TRIMESTER BLEEDING PV

Gynecology

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ABSTRACT

Background: Threatened abortion is till most common cause of early trimester bleeding PV and can be diagnosed and managed by early USG diagnosis. **Materials and methods:** This was a prospective observational study. Place of the study was Department of Obstetrics and Gynaecology and Department of Radiodiagnosis, Midnapore Medical College and Hospital from January 2019 to June 2020. Eighteen months. **Result:** When the clinical method to diagnose threatened miscarriage was compared to the sonographic method, it was evident that sonographic method was reliable than the clinical method and the difference was statistically significant. **Conclusion:** In case of missed miscarriage and complete miscarriage, although the percentage of discrepancy was 100%, on further statistical analysis, the discrepancy was not statistically significant. And the cause behind this was probably inadequate sampling.

KEYWORDS

EARLY TRIMESTER BLEEDING PV, Clinically, USG

INTRODUCTION

Aronu et al¹ performed a retrospective study to evaluate the accuracy of clinical diagnosis of first trimester vaginal bleeding in comparison with ultrasonography. This study was performed because of the high incidence of bleeding per vaginam in first trimester pregnancy and accurate diagnosis was very necessary to enable the clinician to institute appropriate and prompt treatment. A total of 101 women participated in the study. The mean age was 30.2 years. The most common clinical diagnosis was threatened abortion (65.3%) which was reduced to 34.7% by ultrasonography. The overall concordance was 44.55%. the highest concordance of 66.7% was observed in the ectopic pregnancy group. The authors concluded that ultrasound should be done early in patients with first trimester bleeding as this would lead to early definitive diagnosis and commencement of appropriate therapeutic intervention aimed at reduction of mortality and morbidity, reduced hospital stay and cost.

Kirk² opined that the majority of ectopic pregnancies can be diagnosed on transvaginal scan before treatment. Diagnosis should be based on positive visualization of an ectopic pregnancy rather the inability to visualize an intrauterine pregnancy. The majority of ectopic pregnancies will be visible on the initial transvaginal scan performed. Those who do not have their ectopic pregnancies visualized on the first examination will be initially classified as having a pregnancy of unknown location. They will then need follow-up until a diagnosis of ectopic pregnancy is confirmed.

Al Meymar et al³ published a review paper on the role of ultrasonography in the diagnosis and management of early pregnancy complications and concluded that transvaginal ultrasonography was the cornerstone of the management of women with early pregnancy complications. Furthermore, a clear understanding of the behaviour of serum hCG and progesterone is a requirement for those working in the field of early pregnancy care. The authors also stressed the fact to remember that we treat women and not ultrasound scans, therefore the clinical status of the women was of paramount importance.

Paspulati et al⁴ in their study found that vaginal bleeding was a leading cause of presentation for emergency care during the first trimester of the pregnancy. Clinical assessment of the pregnancy outcome at this stage was less reliable. Ultrasonographic examination, in their opinion, was crucial in establishing intrauterine pregnancy (IUP) and

early pregnancy failure and to exclude other causes of bleeding, such as ectopic pregnancy and molar pregnancy. Diagnosis of a normal IUP at this stage not only assists the physician in an expectant management, but also gives a psychologic boost to the patient. Yadav et al⁵ performed a descriptive study involving 100 low-risk pregnant women between 8 to 12 weeks of gestation with known last menstrual period conducted at Subharti Medical College, Meerut. All the patients were subjected to transabdominalsonography (TAS) and followed by transvaginalsonography (TVS) and were followed till delivery with subsequent scan when necessary. A total of 100 pregnancies were intrauterine of which 3 were anembryonic and 4 had early pregnancy failure, 13 pregnancies were re-dated, one with subchorionic leave separation, 3 physiological herniation of bowel loops, and 1 physiological herniation with single cord cyst were identified only by TVS and had favourable outcome. Two twin pregnancies were identified and managed. The study showed the routine ultrasound in first trimester in low-risk women was helpful in timely identification of complications and re-dating of the pregnancies, thereby reducing the induction rates. This study also gives insight that TVS is superior to TAS in evaluation of foetal structure.

Kurmi et al⁶ performed that a total of 100 women were enrolled in the study. The authors concluded that, bleeding per vaginam in the first trimester was one of the most common causes for emergency admission to the obstetric department. Ultrasonographic examination was a non-invasive, no-ionizing and easily available method to assess patients with first trimester bleeding. Ultrasonography was highly accurate in diagnosing actual causes of bleeding and guiding the clinician to choose the appropriate line of management.

Dr. M Ayub Hassan⁷ concluded in his review article that, ultrasound was the best modality to evaluate the first trimester pregnancy complications especially when was done trans-vaginally.

Condous et al⁸ in their study concluded that the majority of women with a miscarriage can be offered expectant management with a reasonable prospect of success and with no increase in the complication rate. Approximately 90% of incomplete miscarriages and 50% of missed miscarriages and anembryonic pregnancies could be expected to miscarry within 2 weeks. The odds of a woman completing her miscarriage with each subsequent week diminished with time. Most women would opt for surgical intervention if they had

not completed their miscarriage within the 2-week window. The data suggested that the ultrasound appearances of the endometrial cavity contents bore no relation to the outcome of expectant management. The antero-posterior diameter of the endometrial cavity did not relate to the odds of successful completion. The authors concluded that, there was little sense in repeating ultrasound scans as part of follow-up protocols as the endometrial cavity does not relate to the odds of successful completion. On this basis there seemed little sense in repeating ultrasound scans as part of follow-up protocols as the endometrial cavity contents do not reflect the likelihood of success. Resources for follow-up might be better orientated towards counselling for early pregnancy loss rather than medical intervention. The need for surgery can be based on the presence or absence of pain and bleeding as well as clinical evidence of infection. The success of expectant management for missed and anembryonic pregnancies was significantly less than for incomplete miscarriage. Medical management was more likely to play a role in those women.

Murugan et al.⁹ concluded in their review article that, trans-vaginal ultrasound was the modality of choice for establishing the presence of an intrauterine pregnancy, evaluating pregnancy viability, gestational age and multiplicity; detecting pregnancy related complications and diagnosing ectopic pregnancy.

MATERIALS AND METHODS

PLACE OF STUDY: Department of Obstetrics and Gynaecology and Department of Radiodiagnosis, Midnapore Medical College and Hospital from January 2019 to June 2020. Eighteen months.

STUDY POPULATION: All pregnant women admitted in our hospital with early pregnancy complications (less than 13 weeks' gestation).

SAMPLE SIZE: The sample size was 100.

INCLUSION CRITERIA: Any pregnant woman with less than 13 weeks' gestation admitted with vaginal bleeding and/or pain abdomen.

EXCLUSION CRITERIA:

- Pregnancy beyond 13 weeks.
- Non-obstetric vaginal bleeding.
- Bleeding following medical/ surgical termination of pregnancy.

RESULT AND ANALYSIS

The women recruited in the study were divided in 3 groups according to age. Group 1 (16 to 20 years) consisted of 73 (73%) mothers, group 2 (21-25 years) consisted of 23 (23%) mothers and group 3 (26 to 30 years) consisted of 4 (4%) mothers. As expected, majority of the study population belonged to rural area (63%). Only 37 (37%) women belonged to urban area. Majority of the mothers enrolled in the study were literate. Sixty-five women of the total 100 women enrolled in the study were primary school pass outs. Rest were secondary school (16) and college (9) educated. Ninety-seven (97.0%) patients were housewives and 3 (3.0%) patients were teachers.

We found that eighty-nine (89%) patients were from low socio-economic status and 11 (11%) patients belonged to middle socio-economic status. Among the 100 women enrolled in the study, 74 (74%) women were of normal BMI. Twenty-one (21%) women were underweight, 2 (2%) were overweight and 3 (3%) were obese. Majority of the mothers (61%) enrolled in the study were un-booked to ante-natal care at the time of presentation to the emergency department. Forty-four (44%) patients had P0+0 parity, 14 (14%) patients had P0+1 parity, 3 (3%) patients had P0+2 parity, 6 (6%) patients had P0+1 parity, 6 (6%) patients had P1+0 parity, 12 (12%) patients had P1+1 parity, 9 (9%) patients had P2+0 parity and 6 (6%) patients had P3+1 parity.

Our study showed that three (3%) patients had 5 weeks of gestational age, 5 (5%) patients had 6 weeks of gestational age, 24 (24%) patients had 7 weeks of gestational age, 36 (36%) patients had 8 weeks of gestational age, 15 (15%) patients had 9 weeks of gestational age, 1 (1%) patient had 10 weeks of gestational age, 8 (8%) patients had 11 weeks of gestational age, 5 (5%) patients had 12 weeks of gestational age and 3 (3%) patients had 13 weeks of gestational age. Sixty-six (66%) patients presented with bleeding per vaginum and 34 (34%) patients presented with abdominal pain. Eighty-two (82%) patients had threatened abortion as the clinical diagnosis. Only one mother was clinically diagnosed to be a case of missed abortion. Clinically 9 (9%)

mothers were diagnosed as cases of incomplete miscarriage. Complete miscarriage was the clinical diagnosis in 4 (4%) mothers.

We found that ectopic pregnancy was clinically diagnosed in 3 mothers (3%) among the study population. On sonographic examination, 45 (45%) women were diagnosed as cases of threatened miscarriage. Sonographically, missed miscarriage was diagnosed in 22 (22%) women. Incomplete miscarriage was the sonographic diagnosis in 10 (10%) women. Complete miscarriage was the sonographic diagnosis in 11 (11%) women. Sonographically, 7 (7%) mothers were diagnosed as cases of molar pregnancy. Sonographically, 5 (5%) mothers were diagnosed as cases of ectopic pregnancy. When the 82 mothers diagnosed clinically to be suffering from threatened abortion were examined sonographically, only 45 (54.88%) women were confirmed to be cases of threatened miscarriage. Rest of them were cases of missed miscarriage [17 (20.73%)], incomplete miscarriage [4 (4.88%)], complete miscarriage [9 (10.98%)], molar pregnancy [5 (6.09%)] and ectopic pregnancy [2 (2.44%)].

The only mother who was diagnosed to be having missed miscarriage clinically was sonographically confirmed to be a case of complete miscarriage. Among the 9 cases of incomplete miscarriage as clinical diagnosis, only 5 (11.11%) were confirmed to be cases of incomplete miscarriage sonographically. Rest were cases of, missed miscarriage [2 (22.22%)], complete miscarriage [1 (11.11%)] and molar pregnancy [1 (11.11%)]. Complete miscarriage was the clinical diagnosis in 4 women. On sonographic examination, none of them were cases of complete miscarriage. Three mothers (75%) were diagnosed to be cases of missed miscarriage and 1 (25%) was diagnosed to be suffering from incomplete miscarriage. Molar pregnancy was the clinical diagnosis in only one mother and on sonographic examination she was confirmed to be a case of molar pregnancy. The three cases of ectopic pregnancy diagnosed clinically were confirmed sonographically to be cases of ectopic pregnancy. Among the 100 women recruited in the study, clinically 82 women were diagnosed to be cases of threatened miscarriage. But, when subjected to sonographic examination, only 45 women were confirmed to be cases of threatened miscarriage. So, the accuracy of clinical method was 54.88% and discrepancy was 45.12%. Our study showed that in one case diagnosed clinically as missed miscarriage was refuted by sonographic examination and was diagnosed as complete miscarriage. Out of the 9 cases diagnosed clinically to be cases of incomplete miscarriage, 5 cases were confirmed by sonography. So, the accuracy of clinical examination to diagnose incomplete miscarriage was 55.55%. The accuracy of clinical method to diagnose ectopic pregnancy and molar pregnancy was 100% in our study. When the clinical method to diagnose threatened miscarriage was compared to the sonographic method, it was evident that sonographic method was reliable than the clinical method and the difference was statistically significant. When the clinical method to diagnose missed miscarriage was compared with the sonographic method, the difference was not statistically significant. This might be due to inadequate sample size. As far as the diagnosis of incomplete miscarriage was concerned, sonographic method was expectedly superior to clinical method.

While diagnosing complete miscarriage, clinical method was comparable to sonographic method. The association of complete miscarriage clinical diagnosis versus complete miscarriage USG diagnosis was not statistically significant ($p=0.3610$). This might be due to inadequate sampling. While diagnosing molar pregnancy, ultrasonography was expectedly superior to clinical method. The association of molar pregnancy clinical diagnosis vs molar pregnancy USG diagnosis was statistically significant ($p=0.0002$). The association of ectopic pregnancy clinical diagnosis vs ectopic pregnancy USG diagnosis was statistically significant ($p<0.0001$). Management of the women enrolled to the study was based on the sonographic diagnosis. The women with sonographic diagnosis of threatened abortion were followed up by routine antenatal care. Cases of incomplete miscarriage were managed by dilatation and evacuation. Cases of molar pregnancy were managed by suction-evacuation. Ectopic pregnancy was managed by laparotomy followed by salpingectomy.

DISCUSSION AND CONCLUSION

BACKGROUND DEMOGRAPHIC FEATURES:

The mothers with early pregnancy complications enrolled in the study were evaluated regarding their demographic features.

Majority of the women (60%) enrolled in the study were below 20 years of age. Most of them, i.e. 63% of the mothers, were from rural areas. Sixty five percent of the mothers received primary level of school education. Ninety seven percent of the mothers were housewives and 89% of the mothers belonged to the low socio-economic status. As far as ANC status was concerned, 61% of the mothers were not yet booked for ANC at the time of their enrolment in the study and it was quite expected as in rural areas it is not very common to get booked for ANC in the first trimester.

PRESENTING COMPLAINTS:

The most common complaint the mothers were admitted with was bleeding per vaginum. Sixty-five mothers (65%) presented with bleeding per vaginum and the rest with pain abdomen (35%).

CLINICAL DIAGNOSES AND SONOGRAPHIC DIAGNOSES:

The most common clinical diagnosis was threatened abortion among the women enrolled in the study. A total of 82 (82%) women were diagnosed clinically to be cases of threatened miscarriage. When those women were subjected to sonographic examination to confirm the clinical diagnosis, only 45 women (54.88%) were diagnosed with threatened miscarriage. Rest were diagnosed as follows- missed miscarriage 17 (20.73%), incomplete miscarriage 4 (4.88%), complete miscarriage 9 (10.98%), molar pregnancy 5 (6.09%) and ectopic pregnancy 2 (2.44%).

The second most common clinical diagnosis was incomplete miscarriage. A total of 9 women were diagnosed with incomplete miscarriage clinically. However, when sonographic confirmation was done, 5 (55.55%) women were diagnosed to be suffering from incomplete miscarriage and the rest were diagnosed with missed miscarriage [2 (22.22%)], complete miscarriage [1 (11.11%)], molar pregnancy [1 (11.11%)].

Clinically, complete miscarriage was diagnosed in 4 mothers (4%). And after sonographic confirmation, the diagnoses were as follows, missed miscarriage [3 (75%)] and incomplete miscarriage [1 (25%)].

Clinically 3 women were diagnosed with ectopic pregnancy and all three were confirmed to be cases of ectopic pregnancy on ultrasonography.

Molar pregnancy was clinically diagnosed in 1 woman and the diagnosis was confirmed by ultrasonography.

Missed miscarriage was diagnosed in 1 woman and when she was subjected to ultrasonographic examination she was diagnosed to be a case of complete miscarriage.

When the overall clinical and sonographic diagnoses were put to further statistical analysis, the following information were obtained. In our study we found out that, among the women enrolled in the study, ultrasonography was superior to clinical methods to diagnose threatened miscarriage, incomplete miscarriage, molar pregnancy, ectopic pregnancy.

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