Research Article

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Ultrasonographic Assessment of Retroverted Gravid Uterus and First Trimester Pregnancy loss of women in a semi-urban area of Dhaka, Bangladesh

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ABSTRACT

Ultrasonography is a safe and effective method of diagnosing early pregnancy and determining the position of the gravid uterus. In our study, 2080 pregnant women with amenorrhea for three months and a positive pregnancy test were chosen. The study was conducted in the Radiology & Imaging department of Failaria & General Hospital from Jan 2016 to Dec 2019. Descriptive statistics were used to compute percentages and averages. Results were presented in tables and charts and expressed as percentages/proportions, means and average. The objective of our study is to investigate the Sonographic findings of first trimester pregnancies detecting the retroverted gravid uterus, normal, abnormal and complicated pregnancies. In the present study out of 2080 pregnancies, we found uterus retroverted in about 7% of women and only one case of acute retention of urine due to retroverted gravid uterus. Here, the majority of pregnant women were 20-24 years of age, which is 980 (47.12%) and 150 (7.21%) women pregnant at the age of over 35 years. In our study, 190 (9.13%) of the 2080 pregnancies with sonographic diagnosis were fetal losses. The diagnosis of early normal intrauterine pregnancy (IUP) was 1890 (90.87%), Incomplete abortion 95 (4.57%), Missed abortion 35 (1.68%), Blighted ovum 39 (1.88%), ectopic pregnancy 14 (0.67%) and Hydatiform mole 7 (0.34%) cases. If urinary retention due to retroverted gravid uterus, abnormal and complicated pregnancies are diagnosed early and treated properly, it can reduce maternal morbidity and mortality.

Keywords: USG, Retroversion, Urinary Retention and Pregnancy Loss

INTRODUCTION

Ultrasound is a safe and valuable screening investigation for first-trimester pregnant women which are essential for a series of reasons, including:

- Confirm the location where the baby is growing within intrauterine pregnancy (IUP) or another site of the abdomen(ectopic pregnancy).^{[1]-[3]}
- Estimate the size of the fetus & the nature of the gestational sac.^{[1]-[2]}
- Evaluate the presence of twin pregnancies & their type of twins that can be identified during the scan.²
- Identify the cardiac movement and heartbeat of the fetus.^{[1]-[2]}
- Diagnosis of pregnancy loss like missed abortion or presence of any abnormalities.^{[2],[4]}
- Evaluate the pelvic organ especially the uterus and ovaries for abnormalities.^[2]
- Used as an effective tool for lower abdominal pain or P/V (per vaginal) bleeding.^{[1]-[2]}

Ultrasound is also a very effective diagnostic tool for the identification of the position of the gravid uterus either anteverted or retroverted. The uterus is retroverted in about 11% of women in early pregnancy.^[5] Acute urinary retention due to retroverted gravid uterus is a rare disorder

that is seen in approximately 1 in 3000 pregnancies.^[6] It can occur in all trimesters of pregnancy, but most commonly occurs between the 10th and 16th weeks of gestation.^{[7]-[10]} Retroverted gravid uterus can cause non-specific and generally urinary symptoms resembling dysuria, frequency, urinary incontinence, and urinary infection in early pregnancy. But if it is undiagnosed and pregnancy advances, it can cause severe complications like intrauterine growth retardation (IUGR), oligohydramnios, rupture of the uterus, incision of bladder, cervix, vagina, posterior or anterior uterine wall during caesarean section, urinary retention, renal failure and sepsis.^[7] An early diagnosis of the retroverted gravid uterus by pelvic examination and ultrasonographic examination is very important for the treatment of a patient in the early stage and the reduction of late complications in pregnancy.^{[7], [11]-[12]} Most common complication of pregnant women is an early pregnancy loss in 10% of pregnancies.^[13] About 80% of cases of pregnancy loss occur within the first trimester.^{[13]-[14]} Ultrasonography is helpful to diagnose early pregnancy and pregnancy loss.^[15] The aims were our study to investigate the sonographic findings of first trimester pregnancies detecting the retroverted gravid uterus, normal, abnormal and complicated pregnancies.

Figure 1. Showing Anteverted Uterus and Retroverted Uterus during USG scanning

MATERIALS AND METHODS

This is a hospital-based prospective type of study on pregnant women attending the Outpatient Department (OPD) of Falaria & General Hospital. The study was conducted by the Radiology & Imaging department of this hospital with duration of 4 years (Jan 2016 to Dec 2019). All pregnant women in their first trimester who have amenorrhea for three (3) months and a positive pregnancy test are included in the study. Descriptive statistics were

used to compute percentages and averages. Results were presented in tables and charts and expressed as percentages/proportions, means and average.

RESULT

Figure 1 depicts the positions of the uterus during USG scanning. Figure 2 shows that sonographic findings of Retroverted Uterus were 138 (7%) out of 2080 pregnant women and the remaining 1942 (93%) are Anteverted Uterus in

the present study. Table 1 shows demographic and sonographic data of three (3) pregnant women with a complaint of urinary retention. In the present study, we found only 1 (one) case of acute retention of urine due to retroverted gravid uterus.

According to Figure 3, the majority of pregnant women were 20-24 years old (980 (47.12%), 25-29 years old 520 (25%), 15-19 years old 230 (11.06%), 30-34 years old 200 (9.62%), and 35-39 years old 150 (7.21%).

Table 2 shows the distribution of cases according to ultrasonographic diagnosis. Normal intrauterine pregnancy (IUP) was diagnosed in 1890 cases (90.87%), incomplete abortion in 95 cases (4.57%), missed abortion in 35 cases (1.68%), blighted ovum in 39 cases (1.88%), ectopic pregnancy in 14 cases (0.67%), and hydatiform mole in 7 cases (0.34%). In our study, the commonest sonographic diagnosis was 1890 (90.87%) early normal pregnancy and the incidence of fetal loss was 190 (9.13%).

Figure 2. Position of the gravid uterus by ultrasonographic examination

Table 1. Demographic and Sonographic Data of Pregnant women with a complaint of urinary retention

Patient No.	Age of pt(Years)	Gravidity/Parity	Gestational age	Position of Uterus in USG	Timing of necessitating catheterization	History of the previous retention of urine
1	32	2/1	13+ weeks	Anteverted	Early Morning	No
2	28	1/0	10+ weeks	Retroverted	Midnight	No
3	25	1/0	12+ weeks	Anteverted	Midnight	Yes

Figure 2. Age group distribution of study Population

Table 2 Distribution of cases according to ultrasonography diagnosis

USG Findings	Status of Fetus	No. of cases	Presentence (%)
Early intrauterine pregnancies(IUP)	Early normal pregnancy	1890	90.87
Incomplete abortion	Fetal loss	95	4.57
Missed abortion	Fetal loss	35	1.68
Hydatiform mole	Fetal loss	7	0.34
Ectopic pregnancy	Fetal loss	14	0.67
Blighted ovum	Fetal loss	39	1.88
Total		2080	100.00
90.87% of cases were early normal pregnancy. 9.13% of cases were pregnancy losses.			

DISCUSSION

In early pregnancy, approximately 11% of pregnancies may be retroverted uterus but urinary retention due to particularly retroverted gravid uterus is a rare condition. [5]-[6], [16]-[17] Generally, the incidence of acute urinary retention due to retroverted gravid uterus before gestational age of 20 weeks. It occurs when the cervix of the uterus is displaced inferiorly and compression to the urethra and bladder neck of pregnant women. [18] In our study, 7% of pregnancies involve retroverted uterus and only one case was acute urinary retention due to retroverted gravid uterus at 9+ weeks. Similarities were discovered in studies conducted by Silva et al. [11] and Yohannes et al. [19]

In this present study, 47.12% of pregnant women belonged to the age group of 20-24 years. A similar study found in Rozliza et al. found the majority of women (46.2%). [20] In Bangladesh, a study conducted by Shadia et al, the majority of mothers (42.59%) were 20-25 years of age. [21]

In our study, 7.21% of women were pregnant at the age of over 35 years. Similarly, a study conducted by Cunningham et al. [22] and Newcomb et al. [23] reported almost 10% of women were at the age of over 35.

In our study, the incidence of fetal loss was 9.13%. A study conducted by Makrydimas et al. [24] found 7.5% fetal loss, which is higher than the present study. Our study is similar to another study where early pregnancy loss occurs in 10% of pregnancies. [13], [14]

A molar pregnancy occurs in 1 in 1,000 pregnancies in the United States, [25] However, it is higher in Asia, as shown in a different study, with Indonesia [25] accounting for up to 1% and India accounting for 2%. [15] A study conducted by Jauniaux et al. found 11 (0.12%) molar pregnancies. [26] In our study, we found only 7 cases (0.34%) of Molar pregnancy, which is similar to a study conducted by Uduma et al. found 0.3% [27]. In the present study, the Blighted

ovum was 1.88% and Uduma et al. found 6.5%. [27]

CONCLUSION

From the findings of our present study, the commonest ultrasonographic findings in the present study are normal early pregnancy and peak reproductive-age women were 20-24 years old. We also found uterus retroverted in about 7% of women in early pregnancy and found only 1 (one) case of acute retention of urine due to retroverted gravid uterus. Women presenting with Urinary retention during pregnancy should have a pelvic examination and ultrasonographic examination performed to exclude uterine incarceration. But if it is not diagnosed early and treated properly, it can cause severe complications. USG is also helpful in the diagnosis of normal early pregnancy, abnormal and complicated pregnancies. That's why early diagnosis is the basis of successful treatment and reduces maternal morbidity and mortality.

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