During scanning, the pregnant female was made to lie supine with abdomen protruding facing upward. The probe was placed on the skin & a layer of ultrasonic gel was applied to skin over pubic area. Two edges of the placenta were focused in a single ultrasonic fields both in transverse & longitudinal section, the probe was moved all over the localized placenta. A straight line was drawn over the localized placenta at the level of cord insertion up to the maternal surface of placenta in order to measure placental thickness. (as shown in fig.1)

The ultrasonic gestational age is determined by measuring Biparital Diameter(BPD), Head Circumference(HC), Abdominal Circumference(AC) & Femur Length(FL). The mean value of the placental thickness along with the respective standard deviation were calculated for different gestational ages from the 14th to 38th week. The findings were compared and statistically analysed using pearson’s correlation between placental thickness and gestational age. All the data were collected by designed clinical data collection sheets containing all the variables of the study. Pearson’s correlation analysis was used to establish the degree of relationship between placental thickness & gestational age. P values of less than 0.05 were considered statistically significant.

ABSTRACT

The placenta is a sprightliness of fetus in utero, as it function for normal growth & development of fetus. So if the growth of fetus is compromised it can be detected by the measurement of placenta. The purpose of our study was to determine normal range of placental thickness & its correlation with gestational age in second & third trimester. 100 pregnant females between 14th to 38th week of gestation referred from antenatal clinics the department of Radiodiagnosis in association with the department of Anatomy. Females aged below 35 years without any medical complications were included for routine antenatal ultrasound. Study was carried out on seimen Acuson 300 ultrasound machine using 3.5MHz convex probe. The placental thickness was measured at the level of umbilical cord insertion in both longitudinal & transverse direction. The ultrasonic gestational age is determined by measuring the Biparital Diameter, Head Circumference, Abdominal Circumference & Femur Length. The mean value of the placental thickness along with the respective standard deviation were calculated for different gestational weeks & compared with gestational age statistically in order to find its correlation. The maximum mean placental thickness is 19.82±3.42 at 19th week of gestation & 38.9±0.04 at 38th week of gestation with a significant positive correlation between placental thickness and gestational age r=0.82 & r= 0.79 in second and third trimester. Placental thickness can be used as an accurate sonographic indicator in assessment of gestational age due to its linear correlation.

INTRODUCTION - Accurate knowledge of gestational age is essential for both antenatul care & successful deliveries of the baby. The determination of gestation is common clinical problem, ultrasonography is most commonly used to estimate the gestational age by measuring the foetal dimensions. The gestational age is approximately of 280 days which is calculated from last menstrual period so, the dating of pregnancy start even before the fertilization. All the important clinical desicion like cesarean section, elective labour induction etc depend on the knowledge of gestational age. Nyberg & Finberg reported that the placental thickness parallels the gestational age. Thick placenta are seen in hydrops fetalis, perinatal infections, maternal diabetes, maternal anaemias. & thin placenta are seen in intrauterine growth retardation, preeclampsia, fetal infection & chromosomal abnormalities. The studies reported by Mital et al. have confirmed that the placental thickness as an indication of gestational age of fetus, it was observed that the placental thickness gradually increased from 15 mm at 11 weeks of gestation to 37.5mm at 38th week of gestation the placental thickness almost coincide almost exactly with gestational age in week.

Many studies were designed to show relationship between placental parameters like volume, weight, area to assess the fetal growth. The growth of fetus and placenta depends upon amount of nutrient from mother to fetus via utero placental organ. Increased placental thickness is not diagnostic of any specific disorder but may contribute to the management of fetus at risk. The gestational age is frequently over estimated or underestimated as many people are unaware of LMP & irregular menstrual cycle. So the aim of our study was to investigate placental thickness as parameter for estimating gestational age of fetus.

MATERIAL & METHOD - The present study was conducted on 100 pregnant females attending antenatal clinics in collaboration with department of Anatomy & Radio diagnosis from 2016-2017 after taking ethical committee clearance from institutional Ethical committee. All pregnant females aged between 15 and 35 years with known LMP & singleton pregnancy were included for routine antenatal ultrasound after their written informed consent.

Pregnant female more than 35 years, twin pregnancy, diabetes, fetal hydrops with chromosomal anomaly, placenta previa & placenta abruptia were excluded.

TECNIQUE –

During scanning, the pregnant female was made to lie supine with...
correlation value \( r = 0.82 \) & \( r = 0.78 \) in second and third trimester as shown in fig no.2. The mean placental thickness shows statistical significance with ultrasonic gestational age with \( p \) value less than 0.05.

**Table 1** Shows that the mean placental thickness is 19.82 ± 3.42, 26.21 ± 1.03, 27.52 ± 0.35, 35.65 ± 3.28, 38.9 ± 0.04 at 14-19, 19-23, 24-28, 29-33, 34-38 weeks of gestation. The result of our study showed that there was a fairly linear increase in placental thickness with gestational age.

**Table 2** Shows that the maximum mean placental thickness is 20.0 ± 3.89 & 32.5 ± 3.60 in second & third trimester. There was a significant positive correlation between placental thickness and gestational age in second and third trimester with degree of freedom 0.94 & 0.93 & \( p \) value is 0.04 & 0.002. This shows that in our study placental thickness is statistically more correlated with second trimester than third trimester.

**SUMMARY & CONCLUSION**- Placenta is responsible for amount of substance exchanged between fetus & mother, thus it appears as an accurate parameter in the assessment of gestational age due to its linear correlation. We therefore recommended that placental thickness may be used as an additional parameter for correlating gestational age during routine obstetric ultrasound scan in cases where LMP is not known & in detecting patients developing intrauterine growth retardation.

**REFERENCES**