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ORIGINAL ARTICLE

Anatomically Abnormal Placement of Placenta and its Under Lying Factors Maternal Tobacco Exposure, History of Cesarean Section and Hypertension among Gravid Females Detected by Sonographically

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ABSTRACT

Aim: To ascertain, placenta previa, acreta and per acreta by ultrasonography during antenatal visit of pregnant mother in 3rd trimester with history of risk factors smoking active passive, hypertension previous history of surgery with consents.
Design: cross sectional.
Duration: December 2020 to May 2022 (one year & Six Months).
Site: Radiology, Gynae & Obstetric department of Pak Red Crescent Medical & Dental College and teaching hospital Dina Nath Multan Road Kasur.
Method: convenient sampling with written consent for participation in study. Pregnant mother in 3rd trimester were examined with ultrasonography and color Doppler.
Keywords: Abnormal placement of placenta, Risk factors, Ultrasonography.

INTRODUCTION

The placenta is formed in 1st trimaster[1] and act as immune, endocrine, and physiological organ[2]. It is 20 cm a sponge, disc like and 3 cm thick.[3] Normally placenta is attached to uterus on back or front (anterior) in body of uterus[4]. In fundus placenta is at top of uterus. It is found in three weeks and can be detected at ultrasonography at 10 week of gestational period and attached to baby by umbilical cord[5]. Placenta transmits nutrition to baby from mother and waste product from baby to mother. It also secrets hormones for maintenance of pregnancy.[6] Placenta normally remains in endometrium (decidua) of uterus. Sometimes placenta is not placed in this position and placed downward or penetrates in deep position then it is called abnormally placed placenta[7]. Placenta previa, when it is placed in cervix[8] and causes many complications, preterm birth, bleeding and needs patient admission for monitoring or cesarean section[9]. In early pregnancy placenta is low lying but it remains there in cervix in 3rd trimester then it is called placenta previa.It may be complete or marginal. The risk factors are age of mother[10] smoking active or passive[11], hypertension, history of previous Cesarean-section or other surgery and multigravida[12]. It is diagnosed during ultrasonography in 3rd trimester with transducer at abdomen[13]. Smoking constricts vessels of placenta and ischemia is there. So, placenta hypertrophy and occupy place of cervix & fix there[14].

Placentas accrete; It is condition of placenta when it is attached deeply in the wall of uterus and not delivered during delivery[15]. Placenta increta. It is most deeply attached than placentas accrete but not pass-through wall of uterus, when it penetrates uterus and passes through the wall of uterus is called placenta per- creta. Female who not bother antenatal care and Placenta per Creta which penetrate through wall of utrus to intestine is life threatening. Proper antenatal care and early diagnosis by sonography and treatment can safe life of mother & fetus. [16] Abnormal placenta diagnosed by ultrasonography is an important tool in gyane & obstrectic which prevent many maternal death.[17] Female with proper antenatal care the dire complication of placenta per creta can be avoided. Early diagnose by USG save the life of baby and mother and mother can be prevented by complication. Avoiding undue cesarean section improve neonatal and maternal consequence in later pregnancy. For future pregnancy mother is counseled to avoid the risk factor at regular prenatal examination.

MATERIAL AND METHODS

This study was conducted at Pak Red Crescent Medical & Dental College/ Teaching hospital from Dec, 2020 to May, 2022. Written consent was taken from all participants who were all gravid mothers in 3rd trimester, took part in this research.

A complete history of maternal age, gestational age, family system, exposure to smoking, history of hypertension and previous history of cesarean section was recorded on prescribed proforma.

It was cross sectional study and total two hundred cases were taken which were pregnant mothers who visited Pak Red Crescent Teaching Hospital Dina Nath for antenatal checkup and ultrasonography in radiology and Gynae & Obs department.

It was convenient random sampling with age group 17-35 year Ultrasound machines with color Doppler was used and only mother in 3rd trimester were included. A horizontal and transvers view of placenta was taken with probe on abdomen inclusion of cervix and urinary bladder.

RESULTS

Mean age group was 23 years. Mothers were in 3rd trimester and women were was in best group of their reproductive age 17-25 mean age and standard daviation was 22.75. +- Age group of 35 and above were less which is 6% this age group in more volunarable to placental anomalies.

Patient visited from gravida 1 to gravida 2 in which most frequency was between graviada 2-4 ranging from 43-45 weeks. In gravdia 1 & 6 frequency was eleven in each and prime were 22 with 11%. Gestational age was 30-33 weeks 33% and 34-37 weeks was 67% respectively.

Frequency of placenta previa was 12 and with 6% of anomalies. It was most common anomaly which was found in this study and confirmed in 3rd trimester as it is changeable in early pregnancy. It was the reason that cases were included with pregnancy of 3rd trimester, frequency of placenta increta was 2 with 1% of total placental anomalies and placenta percreta frequency was 1 with 0.5%.

Previous surgery is a well known risk factor for placental anomalies and in this study maximum mother given history of cesarean section the frequency was 99 with 49.5% of total cases.

History with other surgery cases were 22 with percentage of 11. There were valuable number of cases with history of cesarean section and other surgery their frequency was 79 with 39.5%. To explore the effect of smoking active and passive smoking. A

column was made in questionnaire about family system because in joint family system risk of passive smoking is increased as more number of people live in family and any one may smoke. In this study 178 mothers reported to live in joint family system, tradition of our culture with 89% . Only 22 mothers reported about single living with 11%. In our society and study site in Hospital which drain most of rural area only 33 number with 10.5 percentage. Passive smoking by husband was maximum number with frequency of 110 and 55%. It was more dangerous as women got effect unwillingly. Effect of passive smoking 5.5%. Forty seven mothers gave history of no smoking. Active and passive with 23% .

In one and half year 200 cases were registered, and USG was done in 3rd trimester among which 61 % mother were in age group 17-25 year and 33% mother were in age group 26-34 year and 6% were 35 years and above 35-year.

Table 1. Frequency of smoking history during pregnancy active & Passive.

S /No	History	Frequency	Percentage
1	Active smoking	33	16.5 %
2	Passive smoking (Husband)	110	55 %
3	No smoking	47	23 %
4	Other family members	11	5.5 %

Table 2. Family System

S /N	Family System	Frequency	Percentage
1	Joint	178	89 %
2	Single	22	11 %

Table 3. Previous History of Surgery

S/ No	History type of surgery	Frequency	Percentage
1	Cesarean Section	99	49.5
2	Other	22	11
3	No Surgery	79	39.5

Table 4. Frequency of abnormal placement of placenta.

S /N	Types of placenta anomaly	Frequency	Percentage
1	Placenta Previa	12	6
2	Placenta increta	2	1
3	Per Creta	1	0.5

Table 5. Age group of pregnant women with percentage

S/No	Age Group	Frequency	%age
1	17-25	122	61
2	26-34	66	33
3	35 and above	12	6
4	Mean+SD	22.75 +	5.0

Table 6. Gravid

S/No	Gravida	Frequency	% age
1	G1	11	5.5
2	G2	44	22
3	G3	43	21.5
4	G4	45	22.5
5	G5	23	11.5
6	G6	11	5.5
7	Prime	22	11

Table 7. Gestation age Frequency.

S/N	Gestation age	Frequency	Percentage
1	30-33	66	33%
2	34-37	134	67%

Table 8. Frequency of Hypertension

S/N	H/O Hypertension	Frequency	Percentage
1	BP +4	50	25 %

DISCUSSION

Duration of this study was one and half year from Dec 2020 to May 2022 at Pak Red Crescent Medical & Dental College and teaching hospital in Radiology, Gynae & obs department.

Two hundred pregnant mothers in 3rd trimester were included and abnormal placental position was diagnosed by ultrasonography. 94% women were in good reproductive age group.

At this rural area 89% people live in joint family system and 11% single family 16.5% women gave history of active smoking while 55% were exposed by passive smoking due to their husband, while 5.5% were exposed by smoking of their family members. Previous history of uterine surgery was 49.5% C-section & 11% other surgery most of women were from gravida 2 to gravida 4, 66%. 5.5% were in G6 while 11% were in G1 and prime were also 11% & 33% women were in 30–33-week gestation age and 66% in 34-37% gestation age. History of hypertensive mother was 25%. 6% cases were found of placenta previa1 % placenta increta and 0.5% placenta per Creta.

There is strong association of placenta previa and smoking of mothers during placenta previa and smoking of mother during pregnancy active or passive compared with study of Fatemah SH [18], 2017, Dec and maternal cigarette smoking and risk factor for placenta abruption, placenta previa & uterine bleeding in pregnancy by cande V in 1996 was 1.36% enanth etal[19]. Incidence of abnormal placement of placenta (accreta) is alarming[20].

In a study of huijun L 2022 hypertension is not independently cause of abnormal placement of placenta compatible with our study.[21]

In a study of velegraskis A, 2017, 30% cases were between age group of 26-30 years compatible with our study in which 33% cases were between age group of 26-34 years. In similar study of velegraskis A, 66% cases with cesarean section had strong correlation with placenta previa and cessarian section which is compatible in our study in which 60.5% cases with cessarian section and other surgery got abnormal placement of placenta.[22]

CONCLUSION

There is correlation between risk factors, maternal tobacco exposure, history of cesarean section and hypertension among gravid female and abnormal placement of placenta detected by ultrasonography in 3rd trimester.

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