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A study of maternal and fetal outcome in cases of abruptio placentae

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Abstract
Aims and Objectives:
1. To study maternal and fetal outcome in cases of abruption placenta.
2. To analyse its risk factors.
3. To study its complications.
4. To study mode of delivery in cases of abruption placentae.

Methodology: It is an observational study carried out in Government Medical College And Hospital, Akola from November 2017 to April 2019.Total 140 diagnosed cases of abruption placenta were included in this study. A detailed obstetrics history along with maternal high risk factors were noted. Examination, investigations and complications were studied.

Results: The incidence of abruptio placentae was 1.05% or 1: 94. Majority of cases i.e. 81.4% are from rural areas and belongs to low socioeconomic status. Maximum number of cases seen in primigravida in the age group of 22-25 years. Hypertensive disorders of pregnancy was a risk factor in 65% of cases followed by premature rupture of membranes (6.4%), H/O prior abruption (2.8%), Polyhydraminos (5%).In 20% of cases vaginal delivery occurred and in 80% caesarean section needed. Severe Anaemia was the commonest complication of abruption placentae followed by postpartum haemorrhage (30%), DIC (15%), AKI (12%).Obstetric hysterectomy was performed in 4% of cases. ICU monitoring required in 3% of cases. 1 maternal mortality occurred and perinatal mortality rate was 68.5%, it can be due to late presentation of the patient to the hospital, during which time it progress to an advanced stage.

Conclusion: Abruption placenta is a cause of significant maternal and perinatal mortality. The overall incidence of abruption can be decreased by providing proper antenatal care, early diagnosis, availability of blood transfusion, strict surveillance, prompt action at the time of occurrence.

Keywords: Abruptio placentae, risk factors, complication, maternal mortality, perinatal mortality

Introduction

Obstetrics is a branch which deals with two lives at a time. Antepartum hemorrhage is defined as bleeding from or into the genital tract after the 28th week of pregnancy but before the birth of the baby [1]. Abruptio placentae is one of the causes of antepartum hemorrhage, it is defined as complete or partial separation of normally situated placenta from its uterine site before the delivery of the fetus [2]. This condition is referred to as 'ablatio placentae' and 'accidental hemorrhage'. In Latin, abruption placentae means 'rending asunder of the placenta', which denotes a sudden accident that is a clinical characteristics of most cases [2].

The incidence of abruption placentae is 1-1.2% in pregnancies overall and 0.3% in pregnancy at term [3]. Placental abruption is caused by bleeding into decidua basalis, resulting in placental separation. Hematoma formation further separates the placenta from uterine wall and causes compression of other structures and compromise blood supply to the fetus. Some of the bleeding of placental abruption insinuates between membranes and uterus, escaping through cervix to cause 'external hemorrhage' and some bleeding is retained between the detached placenta and uterus resulting in 'concealed hemorrhage' [2].

Exact etiology is not known but there are several risk factors such as [4]. Preeclampsia, Multiparity, Polyhydramnios, Trauma, Multiple pregnancy, Premature rupture of membranes, High birth order (Parity above 4).

Its occurrence can neither be predicted nor prevented. High degree of suspicion is needed for prompt diagnosis and treatment. The classic symptoms are vaginal bleeding (70%-80%), pain in abdomen and tender uterus with increased resting tone, forms main diagnostic criteria [4]

From the mother point of view, abruption placentae causes bleeding of varying severity which lead to serious sequeale that include disseminated intravascular coagulopathy, renal failure,

transfusion, hysterectomy, shock and death [2]. Abruptio placentae causes fetal complications such as non-reassurring fetal status and increased perinatal morbidity and mortality [2]. The present study was planned to study the problem of abruption placentae as it presents clinically and to study the clinical correlation as it relates to the maternal and perinatal outcome.

Material and methods

This present study was conducted at Department of Obstetrics and Gynecology in Government Medical College and Hospital, Akola from November 2017 to April 2019. It was an observational study conducted on 140 pregnant women with 28 weeks of gestation and more, and diagnosed as abruption.

Inclusion criteria

1. Gestational age equal to or more than 28 weeks. 2. Abdominal pain usually present. 3. Presence of uterine irritability and tenderness in most of the cases. 4. Evidence of fetal distress or fetal demise may be present. 5. Cases showing presence of retroplacental clots and areas of infarction on the placenta. 6. Revealed or concealed hemorrhage.

Exclusion criteria

1. All pregnant women over 28 weeks of gestation who were admitted with c/o bleeding p/v diagnosed as a. Placenta previa b. Genital tract trauma c. Lesions of genital tract. 2. All pregnant women below 28 weeks of gestation.

Patients were triage according to their clinical condition. First, Per speculum examination of the patient done to rule out causes of bleeding such as placenta praevia or genital trauma. A detailed obstetrics history was taken and age, gravida status, gestational age, maternal risk factors and past history were noted. Routine investigations and specific investigations such as PTINR were carried out. Mode of delivery was decided depending upon maternal and fetal condition. Maternal complications and fetal outcome were recorded.

Results

There were 13244 total deliveries and cases of abruption were 140 therefore incidence of abruption placentae in present study is 1.05%.

Table 1: Distribution according to demographic profile

SR. No.	Parameters		Number of patients	Percentage
1	ANC registration	Booked	16	11.40%
		Unbooked	124	88.60%
2	Residence	Rural	114	81.40%
		Urban	26	18.60%
3	Age	18-21	25	17.60%
		22-25	50	35.70%
		26-29	35	25%
		30-33	15	11%
		34-37	11	8%
		>37	4	2.70%
4	Parity	Primigravida	49	35%
		Second gravida	41	30%
		Third gravida	28	20%
		Fourth gravida and above	22	15%
5	Gestational age	28-31 weeks	17	12%
		32-36 weeks	71	51%
		37-40 weeks	48	35%
		Unknown	4	2%

Majority of patients were unbooked and all cases which we encountered were emergency cases at tertiary center. Majority of patients belong to rural areas. None of the cases were booked at the center itself. Maximum number of cases were seen in primigravida patients and in the age group of 22-25 years. 32-36 weeks of gestation is the most vulnerable period for abruption.

Table 2: Distribution of risk factors for abruptio placentae

SR.No.	Risk factors	Number of patients	Percentage
1	Hypertension	91	65.00%
2	Trauma	2	1.50%
3	H/O prior abruption	4	2.80%
4	Multiple pregnancy	2	1.50%
5	PROM	9	6.40%
6	Polyhydraminos	7	5%
7	Advanced age	5	3.50%
8	High birth order	8	5.70%
9	Unknown	15	10.80%

Hypertensive disorders of pregnancy accounts for 91 cases (65%). There were 2 (1.5%) cases of blunt abdominal trauma resulting in abruption. Premature rupture of membranes 9 (6.4%), H/o of prior abruption 4 (2.8%), Polyhydraminos 7 (5%), Advanced age 5 (3.5%), High birth order 8 (5.7%) and multiple pregnancy 2 (1.5%) constitute other conditions. Unknown causes contribute to 15 (10.8%) of cases.

Table 3: Mode of delivery

SR.No.	Mode of delivery	Number of patients	Percentage
1	Cesarean section	112	80%
2	Vaginal delivery	25	18%
3	Spontaneous	3	2%

Majority of cases like about 80% underwent emergency cesarean section and 18% vaginal delivery occurred. 2% were delivered spontaneously.

Commonest indication for LSCS is fetal distress 45 (32.1%). Associated obstetrics complications include eclampsia, impending eclampsia, breech, transverse lie, previous 1 LSCS and previous 2 LSCS and these were indications for 36 cases. In cases of intrauterine death, we needed to perform LSCS for indications like failure to progress 16 (11.4%) and poor bishop's score (unfavourable cervix) 15 (10.7%).

Table 4: Distribution of maternal complication

SR.No.	Maternal Complications	Number of patients	Percentage
1	Postpartum haemorrhage	42	30%
2	Severe Anaemia	48	34.20%
3	Shock	40	28.50%
4	Obstetrics hysterectomy	6	4.30%
5	Acute renal failure	17	12.10%
6	Deranged coagulation profile	21	15%
7	ICU admission	4	2.70%
8	Death	1	0.70%

Severe anaemia are the most common maternal complications found in 48(34.2%) cases. Postpartum haemorrhage is found in 42 (30%) patients followed by deranged coagulation profile in 21 (15%) cases and acute renal failure in 17 (12.1%) cases. Obstetric hysterectomies performed in 6 (4.3%) patients and ICU admission required in 4 (2.8%) patients. 1 (0.7%) maternal death noted.

Table 5: Distribution of Fetal Outcome

SR.No.	Fetal Outcome	Number of patients	Percentage
1	Stillbirth	39	27.90%
2	Intrauterine death	50	35.70%
3	Neonatal death	9	6.40%
4	Live	42	30%

30% women delivered live babies while 27.9% were stillborn. Out of 42 live babies 9 died in early neonatal period due to prematurity. 35.7% were intrauterine deaths.

Discussion

In present study the incidence of abruption placentae was found to be 1:94 and It is comparable with the incidence found in other studies by various authors. In present study, higher incidence is noted as our institute is a main referral center. Many cases are from rural area reported in this study. Reasons for higher incidence are low socioeconomic status, illiteracy, lack of proper antenatal check-up, malnutrition and ignorance, and these factors are faced by the majority of the Indian population. Unbooked cases 88.6% are mainly from rural areas from lower socioeconomic strata of the population. All the cases which were encountered in present study, were emergency cases at tertiary center. None of the cases were booked at the center itself.

Maximum cases in this study were in 22 – 25 age group. This is because they formed the largest set of women who delivered at tertiary center. Dyer-Mccaughey [5], Kapadiya *et al.* [6], G.S. [7] *et al.* and Mondal G S [8] *et al.* showed age group of 21-30 years, 20-24 years and 21-25 years has maximum cases. In this study, abruption placentae found in 49 (35%) cases of primigravida followed by 41 cases of second and 28 cases of third gravida and 21 cases of gravida 4 and above. In study of Kapadiya *et al.* [6], 32 cases were primigravida followed by 18, 14 and 12 cases respectively of second, third and fourth and above gravida. Choudhary V *et al.* [9] showed 73 cases of primigavida and 51 cases of multigravida had abruption. This high incidence can be accounted for by the fact that primigravida are more prone to develop toxemia. In present study, 32 -36 weeks group is found to be the time of gestational age group where the incidences of abruption placentae are common and it is correlating with the finding of other author's study. In the study of Choudhary V *et al.* [9], it was 32-36 weeks, Maurya *et al.* [10] it was 34-36 weeks and Purandare [11] it was 34-36 weeks.

In the present study, hypertensive disorders of pregnancy such as pre-eclampsia, eclampsia account for 60% of cases and chronic hypertension accounted for 5%. Paintin 12, Abdella13 and Blair14 reported as following; 54.7% and 10.9%, 20.4% and 10.9%, 14.8% and 4.8% respectively. There were 6.4% cases of premature rupture of membranes causing abruption in present study while Vintzeileous15 and Irgens16 reported incidence of 6.3% and 7.5% respectively. Incidence of trauma in present study is 1.5% while Kapadiya 6 and Choudhary9 reported incidence of 4% and 1% respectively. In present study, there were 4 cases where there is history of abruption in previous pregnancy was present. It is comparable with studies of Karegard and Genner17 where 3 cases with previous history of abruption were found. 5% abruption were due to polyhydraminos and Choudhary9 reported 21.7% while Ashar L 18 reported 0.47% of cases were due to polyhydraminos. In this study, 1.5% of cases with multiple pregnancy presented with abruption while in Kapadiya6 and Ananth CV19 reported the incidence of 1% and 1.22% in their studies.

At our institute, patients came in such a state that termination of pregnancy with caesarean section is necessary for maternal interest. In most of patients caesarean section was performed for maternal interest in spite of intrauterine fetal death. As in our set up, patients came to hospital quite late, when there is already fetal death. Thus, faster termination of pregnancy helped us to avoid further complications. Thus, by performing caesarean section further deterioration was avoided. Cesarean delivery incidence is 80% in this study.

Severe anaemia (34.3%), postpartum haemorrhage (30%) and shock (28.6%) were the common maternal complications. In the study of Kapadiya [6] and Choudhary [9], incidence of postpartum haemorrhage is reported as 22.5% and 11% respectively. Disseminated intravascular coagulation (15%) and acute renal failure (12%) are also significant complications. Kapadiya [6], Choudhary [9] and Blair [14] found incidence of disseminated intravascular coagulopathy as follows: 20.16%, 16% and 15.3%. Incidence of renal failure was 10.5% and 6% in the study of Kapadiya [6] and Choudhary [9] respectively. 4.3% of patients underwent obstetrics hysterectomy. There was one maternal death noted and it was due to complications of eclampsia and abruption, patient was in shock and DIC. In the study of Choudhary [9], there was no maternal mortality and Kapadiya [6] and Blair [14] found incidence of 4% and 0.53% respectively. Overall, maternal outcome was good in present study due to proper obstetrics care, availability of wide range of antibiotics and blood component transfusion at our institute.

Abruption of placenta is associated with higher incidence of perinatal mortality**.** In this study, perinatal mortality rate was 68.5%. It is comparable with the incidence reported by Kapadiya [6] and Choudhary [9], as follows 52.4% and 72%.

Conclusion

In this study there was high incidence of abruption placentae associated with high maternal and perinatal mortality. This is mainly because of low socioeconomic status, lack of awareness of health education, unawareness of antenatal care, poor transportation and appreciable short comings in health facilities.

Abruptio placentae is an obstetric emergency and it is truly accidental with few warning signs. Though it's incidence cannot be eliminated, care should be taken to decrease the overall incidence and severity of the condition by avoiding high parity by timely sterilization, improving socio economic status, proper antenatal care, antecepation of abruption in high risk cases, timely admission, strict surveliance, prompt action at the time of occurrence. All this can go a long way in bringing better results in dealing with this grave condition.

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