INCIDENCE, CAUSES AND OUTCOME OF PLACENTA PREVIA

Farhat Nasreen

*Department of Gynaecology and Obstetrics,
Khyber Teaching Hospital,
Peshawar.*

ABSTRACT

Objectives: The incidence of Placenta Previa, associated factors, complications, mode of delivery, fetal and maternal outcomes were evaluated in a one year of hospital based study.

Material and Methods: In a prospective study, 100 cases of pregnancy beyond 28 weeks of gestation, complicated by Placenta Previa were identified. The total number of deliveries were 2828, patients presented with Placenta Previa were 100.

Results: Patients with placenta previa were 100 giving and incidence of 3.5%. Of 3.5% major degree of Placenta previa were 2.3% while 1.2% were type I and II. The maximum number of patients were 35 years and above. There were 7 times as many multipara having Placenta previa as nullipara, repeated myometrial/endometrial damage due to repeated pregnancy being the most common cause. About 60% of patients had at least one or more gynaecol/obstet procedures before the present pregnancy. Incidence of Placenta previa was significantly higher in patients with previous C. Section (5.3%) than overall incidence of 3.5%. However, in our study cases were thrice as likely to have had curettage (46%) than previous C. section (15.9%).

Conclusion: Our data suggests that clinical judgement and skills in the performance of C. section, dilatation and curettage, and other forms of uterine invasive technique may help to keep the subsequent incidence of Placenta previa at a reasonably low rate. Routine curettage after all spontaneous abortions may be avoided unless it is needed.

Key words: Placenta Previa, Caeserian Section.

INTRODUCTION

Placenta previa is a serious complication of pregnancy it refers to a placenta that is situated wholly or partially within the lower uterine segment instead of upper uterine segment. Jaunix and Campbell in 1992[1] classified Placenta previa as

Type I: Low-lying placenta implanted near the internal OS (with in 5cm) but not reaching the OS.

Type II: Marginal Placenta previa located at the margin of the OS.

Type III: Partial Placenta previa partially covering the internals OS.

Type IV: Total Placenta previa; completely covering the OS.

The etiology remains controversial. The major theories focus on endo/myometrial damage in the corpus and defective genetics or placental mechanism. In humans the blastocyst is completely imbedded in the substance of endometrium so abnormalities of endometrial vascularization, delayed ovulation, and prior trauma to the endomet/myometrium appear to influence the site of implantation, therefore contributing to the probability of Placenta Previa.[2] Thus a number of studies have established its association with advanced maternal age, multiparity, previous C/Section and other operations resulting in uterine scarring, dilatation and curettage, smoking, multiple gestation.[3]

Lavery[2] states that data from Eastern Europe shows a 2 to 3 fold increase in the incidence of Placenta previa subsequent to liberalization of abortions law in 1960s. The suggested mechanism is that scarring of the endometrium from vigorous uterine curettage may lead to an abnormal site of placental implantation in subsequent pregnancies. The proposed mechanism by Clark et al[4] in association with previous C. section is failure of differential growth of the lower segment and also due to inability of the lower segment to undergo physiologic extension in the 3rd trimester. Patients with Placenta previa are at an increased risk of spontaneous abortion, 3rd trimester bleeding, abruptio placenta, fetal malpresentation, C. section, increased loss of blood and prolonged hospitalization.

The infants of these patients are also at increased risk of premature delivery, and increased perinatal mortality than in the general population.

The frequency of this condition may be on the rise so we need to identify and target preventive interventions among women at increase risk of Placenta previa.

MATERIAL AND METHODS

This study was conducted in the department of obstet/gyneacology unit "A" of Postgraduate Medical Institute, Lady Reading Hospital, Peshawar form 1st January 1995 to 30th December 1995.

100 cases of pregnancy beyond 28 weeks gestation, complicated by Placenta previa, were identified. All types of Placenta previa were included.

Ultrasound was not available in obstetric department for emergency cases in the study period, so examination under anesthesia was performed in most of our emergency cases for antepartum diagnosis of Placenta previa. The degree of cervical dilatation at the time of diagnosis was variable and classification was made on the basis of the last examination. In 88 cases the diagnosis of Placenta previa was confirmed at caesarian section while in the 12 cases that had a vaginal delivery, digital examination was performed to confirm diagnosis. The following potential risk factors such as maternal age, parity, previous abortions, prior C.

section, and multiple pregnancies were examined.

The association of Placenta previa with fetal malpresentation, abruptio placenta, post partum hemorrhage and maternal and fetal outcome were also evaluated.

RESULTS

The number of deliveries beyond 28 weeks gestation during the study period was 2828 and 100 cases of Placenta previa were seen giving an incidence of 3.5% (1:28) i.e. 35/1000 deliveries. Of the 3.5%, the major degree of Placenta previa was 2.3% while 1.2% was type II and I (Table-1).

Table-2 demonstrates that advancing maternal age is associated with progressively elevated risk of Placenta previa. However, the maximum numbers of patients (39%) were 35+ years old, while 2% of patients were less than 20 years old. Relation to parity showed that a high proportion of patients with Placenta previa were grand-multiparous (45%) occurring in 5 in 11 grand multipara while nulliparous were 12% (3 in 25). Twin pregnancy in two and pre-eclamptic toxemia in one case was found while recurrent Placenta previa was detected at repeat C. section in 2 cases. There was a higher percentage of male (51%) than female fetuses (49%). However a history of maternal smoking cold not be adequately evaluated.

CHARACTERISTICS OF PATIENTS

	No.	%age
Maternal Age	2	
<20 yrs	2	2%
20-24	3	3%
25-29	19	19%
30-34	37	37%
35 +	39	39%
Parity		
0	12	12%
1-4	43	43%
≥5	45	45%

TABLE – 2

Review of the past Obst/Gynaecolgical procedures (Table-3) revealed that dilatation and curettage (unrelated to pregnancy) had been performed in 10 cases, previous abortions had occurred in 36 cases and a history of lower segment C. section was found in 14 cases. Analysis of the above results showed that majority (60%) of patients had at least one or more gyneco-logical procedures performed before the present pregnancy.

The total number of deliveries with history of previous C. Section in the study period was 263 (Table-4). Of the 263 cases, Placenta previa was diagnosed in 14 cases giving an incidence of 5.3% (Table-4). It

RELATIVE FREQUENCY

Types of Placenta Previa	Number	Percent-age
Type I Placenta previa	7	7%
Type II Placenta previa	29	29%
Type III Placenta previa	27	27%
Type IV Placenta previa	37	37%
Total No.	100	

TABLE – 1

PREVIOUS OPERATIVE PROCEDURE

Procedure	Percentage
Dilatation and curettage (Unrelated to pregnancy)	10%
Evacuation and curettage (Prior abortions)	36%
Lower segment C. section	14%
Other uterine scar	0%
Total	60%

TABLE – 3

ASSOCIATION WITH PREVIOUS C. SECTION

	No. of cases	Percent-age
Placenta previa (over all incidence)	100/2828	3.5%
Placenta previa with previous C. section	14/263	5.3%

TABLE – 4

showed that the incidence of Placenta previa was significantly higher in patients with previous C. section (5.3%) than overall incidence, i.e. 3.5%.

Table-5 showed that mode of delivery was C. section in 82% of cases while vaginal delivery was possible in only 12% of cases. Fetal malpresentation (39%) at time of delivery was common in our study as well, (Breech in 31%, transverse lie 6% and oblique lie 2%). This malpresentation also contribute to the increase is C. section deliveries even is cases where Placenta previa is marginal. There was evidence of abruptio placenta in the form of retroplacental clots in 3% of patients while 10% of patients with Placenta previa had post partum hemorrhage. 5 patients underwent C. hystrectomy, an incidence of 1 in 20. Among these, 4 patients had partial Placenta previa

RELATED COMPLICATIONS

Complication	Percent-age
Fetal malpresentation	39%
Caesarian section	82%
Post partum hemorrhage	10%
Abruptio placenta	3%
C. section with internal iliac ligation	1%
Caesarian hysterectomy	5%
Placenta accrete	6%
Maternal mortality	0

TABLE – 5

RISK OF PLACENTA PREVIA/ACCRETA WITH PREVIOUS SCAR

Prior C. section	Patients with P. previa	P. previa/accreta	Percent-age
Unscarred uterus	86	4	4.6%
Scarred uterus	14	2	14.2%
Total	100	6	

TABLE – 6

and Placenta accreta while the 5th one had type-II Placenta previa and post partum hemorrhage. 6 women had Placenta accreta, of these, 2 had a history of previous C. section (Table-6) while 4 women had no such history, thus raising the risk of Placenta accreta from 4.6% in patients with Placenta previa and unscarred uterus to 14.2% in patients with scarred uterus and Placenta previa (Table-6). 56 babies were born in a healthy state while 11 neonatal death and 33 stillbirths occurred, for an over all perinatal death of 44% (Table-7). The mean birth weight of still born babies was 2.693 kg and mean gestational age was 35.8 weeks while the mean birth weight of neonatal death was 2.272 kg and mean gestational age was 34 weeks.

The total number of premature babies was 28. Out of 44 perinatal deaths, 27 were due to prematurity, giving an overall incidence of 61.3% due to prematurity.

STATE OF BABIES

	No.	Mean age	Man birth wt.
Alive	56	37.4 wks	3.933 kg
Neonatal death	11	34 wks	2.272 kg
Still birth	33	35.8wks	2.693 kg
Total	100		

TABLE – 7

DISCUSSION

The incidence of Placenta previa in our study was 3.5% (1 in 28) i.e. 35/1000 deliveries, it is much higher than the reported incidence which is 1:200, average 0.5%[5]. The reason being that this is a tertiary hospital and most of the normal deliveries take place outside the hospital.

From our study it appears that implantation over the internal OS is not just a chance happening. A high incidence of Placenta previa would be expected if implantation were random rather than preferentially in the fundus. Only patients with large placentas would be expected to have higher frequencies of Placenta previa rather than older grand multiparous patients and women with previous abortions, previous C. section and fetuses with congenital abnormalities. In our study analysis of age showed that the frequency of Placenta previa increases across the entire maternal age which is consistent with the study done by Zhang and Savitz D. 1993.[3]

The usual association with multiparity was also present in our study i.e. 7.3 times as many multipara (45+43=88) having Placenta previa as nullipara (N=12). This is higher than that reported by Cotton et al[6] which is 4.9 times as many multipara as nullipara. This is perhaps the result of a decline in the number of women of high parity, which is most likely related to more readily available mean of contraception and more liberal attitudes towards surgical sterilization in the United States as compared to our population.

In our study 36% had a history of prior abortions (Table-3), which is in consistence with the study done by Brenner et al[7] (35.3%) and Cotton et al series[6] (37%). We also noted that cases were thrice as likely to have had previous curettage (36+10=46) than previous C. section (N=14) (Table-3).

This reflects that our population probably had a greater proportion of patients with endometrial damage secondary to sharp curettage. In our setup sharp curettage is mostly used instead of suction curettage thus accounting for a higher incidence of Placenta previa. 88 of the women were multiparous of whom 15.9% (N=14) had previous C. section which is nearly the same as reported by Cotton et al 14.6%[6] and Rose GL 18%[8]. This confirms the view of other people that a previous lower segment C. section increases the risk of Placenta previa (5.3%) as compared to overall incidence (3.5%) of Placenta previa (Table-4). The mechanism of endometrial damage may be applicable to the association between Placenta previa and previous abortions, previous pregnancy age, uterine scars and intrauterine synechia but this theory still cannot explain all cases of Placenta previa, as in our study 12 patients were primigravida (Table-2) who had no history of previous uterine damage. This observation suggests the role of defective genetics or placentation mechanism.

In evaluation of related complications we found that women with Placenta previa were more likely to have post partum hemorrhage, Caesarean Hysterectomy as diminished muscle content in lower segment causes less effective contraction to control bleeding[9]. The associated malpresentation with Placenta previa increases the number of C. section deliveries even in cases where Placenta previa is marginal.

Prematurity due to Placenta previa accounts for 60% of perinatal mertality[10]. While in our study 61.4% (27 out of 44) of perinatal deaths were due to prematurity. In our study, the mean gestational age was 35.8 wks.

In our study perinatal mortality was 44% (33+11) (Table-7), double than the reported incidence of 15-20%[10]. The mean birth weight of neonatal death was 2.272 kg and mean

gestational age was 34 wks while in the Cotton et al series[6] it was 1.3564 kg and 29.5 wks. This reflects that

1. Neonatal intensive care facilities are in the primitive stage in our hospital, which adds to the perinatal mortality (neonatal death 11%), double than that reported by cotton et al (6%).

2. Most of our patients are referred cases from remote village, so by the time they reach the hospital, intrauterine fetal demise occur due to heavy blood loss (33% still-born) accounting for a high perinatal mortality.

CONCLUSION

Our data suggests that clinical judgement and skills in the performance of C. section, dilatation and curettage, and other forms of uterine invasive technique may help to keep the subsequent incidence of Placenta previa at a reasonably low rate. Routine curettage after all spontaneous abortions may be avoided unless it is needed. The family planning services should be further improved to attain a decline in the number of women of high parity. Significant improvement in the neonatal care should be achieved in our tertiary environment to improve expected survival rate, together with a reduction in the overall morbidity for the premature new born. Maternity services at district level may also be improved.

REFERENCES

1. Penna LK, Pearce JM. Placenta previa John Studd (ed) progress in obstet and gynaecology Chap–10 Vol-11, 161.

2. Lavery SP.Placenta previa. Clinical obstet gynaecol 1990; 33: 414.

3. Zhang J, Savitz D. Maternal age and Placenta previa. A population based, case control study. Am. J. Obstet Gynaecol 1993; 168: 641.

4. Clark SL, Koonings PP, Phelan JP.Placenta previa/accreta and previa caesarian section, obstet Gynae 1985; 66: 89.

5. Scott JR, Disaia PJ, Hammond CB, Spellacy WN. Placenta previa and placental abruption. Danforth's obstetrics and gynaecology, seventh edition 1994; 489.

6. Cotton DB, Read JA, Paul RH, Quilligam EJ. The conservative aggressive management of placenta previa. Am J Obstet gynaecol 1980; 137: 687.

7. Brenner WE, Edelman DA, Hendricks CH. Characteristics of patents with placenta previa and result of expectant management. Am J Obstet gynaecol 1978; 132: 180.

8. Iyasu S., Saftlas A. K., Rowley DL, Koonin LM, Lawson HW, Atrash HK. The epidemiology of placenta previa in the United States 1979 through 1987. Am. J. Obstet Gyneacology 1993; 168: 1429.

9. Wolf E, Mallozi A, Radis J, Egan J, Vitzileos A, Campbell W. placenta previa is not an independent risk factors for a small for gestational age infant. Obstet Gynaecol 1991; 77: 707.

10. Decherney AH, Pernoll ML. Current obstet and gynaecoloyg. Diagnosis and treatment of third trimester hemorrhage, 8th edition 1994. 404-409.

Address for Correspondence:
Dr Farhat Nasreen,
Department of Gynaecology and Obstetrics,
Khyber Teaching Hospital, Peshawar.