

Comparative Study of Histomorphological Features of Abruptio Placenta in Primigravida and Multigravida Mothers

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Abstract

Introduction: Histopathological features give evidence about the etiopathological process of the disease. Abruptio being an important cause of perinatal mortality, histopathological features in abruptio in primi and multipara mothers were studied to know the etiopathological factors operating in them.

Materials and Methods: Thirty-three cases of multigravida and 17 cases of primigravida were included in the study. After obtaining consent, histomorphological features were studied from the sections of placenta, after routine hematoxylin and eosin staining. Histopathological features of acute abruptio and chronic abruptio were studied.

Results: Histopathological features of acute abruptio such as inter and intravillous hemorrhage, chorioamnionitis, chorioamnionitis with hemorrhage, acute deciduitis, decidual hemorrhage, and increased syncytiotrophoblastic knotting were present in all cases (100%) of primigravida. In multigravida, inter and intravillous hemorrhage and increased syncytiotrophoblastic knotting present all 33 (100%) cases. Chorioamnionitis presents in 26 (78%) cases, acute deciduitis presents only 3 (9%) cases, and decidual hemorrhage of 27 (82%) cases of multigravida. Histopathological features of chronic abruptio such as placental infarction, villitis, villous maldevelopment, maternal floor decidual necrosis, and decidual vasculopathy were present in 21(63.6%) cases of multigravida, villous infarction was seen in 15 (45.4) cases of multigravida whereas all these features of chronic abruptio were present only one case (5%) of primigravida.

Conclusion: This comparative study showed that the features of acute placental abruptio were seen in primigravida when compare to multigravida, the features of chronic placental abruptio were seen in multigravida.

Key words: Abruptio placenta, Histomorphology, Multipara, Primigravida

INTRODUCTION

Abruptio placenta is an important cause of maternal mortality and perinatal mortality. The study of histomorphological features provide insight about the etiopathogenesis. Multigravida is a known risk for abruptio placenta^[1] but abruptio occurs in primimothers also.

In abruptio, predominantly, two types of histopathological changes are seen in placenta. Chorioamnionitis, acute

deciduitis, and decidual hemorrhage suggest acute abruptio^[2] and features such as placental infarction villous infarction and decidual vasculopathy, necrosis was seen in chronic abruptio.^[3] In certain cases, both these features are seen suggesting acute on chronic injury.^[4]

Studying the histomorphological features in primigravida and multigravida mothers with abruptio will provide the etiopathological factors operating in them and will identify the difference in etiopathogenesis if any.

MATERIALS AND METHODS

The prospective study done in a tertiary care teaching hospital in India. Around 50 cases of abruptio placenta were included in the study. Thirty-three cases of them

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Table 1: Histopathological features of acute abruption in primigravida and multigravida

Histopathological features of acute abruption	Multigravida (33 cases) (%)	Primigravida (17 cases) (%)
Funisitis	12 (36.3)	8 (47)
Intervillous hemorrhage	33 (100)	17 (100)
Intravillous hemorrhage	33 (100)	17 (100%)
Chorioamnionitis	26 (78)	17 (100)
Chorioamnionitis with hemorrhage	18 (54.5)	17 (100)
Acute deciduitis	3 (9)	17 (100)
Decidual hemorrhage	27 (82)	17 (100)
Increased syncytiotrophoblastic knotting	33 (100)	17 (100)

Table 2: Histopathological features of chronic abruption in primigravida and multigravida

Histopathological features of chronic abruption	Multigravida (33 cases) (%)	Primigravida (17 cases) (%)
Placental infarction	21 (63.6)	1 (5)
Villitis	21 (63.6)	1 (5)
Villous infarction	15 (45.4)	1 (5)
Villous maldevelopment	21 (63.6)	1 (5)
Maternal floor decidual necrosis	21 (63.6)	1 (5)
Decidual vasculopathy	21 (63.6)	1 (5)

were multigravida and 17 cases of them were primigravida mothers.

After obtaining ethical clearance and consent, placental specimen were collected along with the clinical and demographical details of the mothers. Gross dissection done from the placental specimen followed by tissue processing and paraffin blocks were made. Histomorphological features were studied from the sections of these blocks after routine hematoxylin and eosin staining.

Histopathological features of acute abruption such as funisitis, inter and intravillous hemorrhage, chorioamnionitis, acute deciduitis, and histopathological features of chronic abruption such as placental infarction, villitis, villous infarction, villous malformation, and decidual vasculopathy were studied.

RESULTS

In the present study, histopathological features of acute abruption such as funisitis present in 12 (36.3%) multigravida and 8 (47%) primigravida. Inter and intravillous hemorrhage, chorioamnionitis, chorioamnionitis with hemorrhage, acute deciduitis, decidual hemorrhage, and increased syncytiotrophoblastic knotting were present in all cases (100%) of primigravida. In multigravida, inter and intravillous hemorrhage and increased syncytiotrophoblastic knotting present all 33 (100%) cases. Chorioamnionitis presents in

26 (78%) cases, acute deciduitis presents only 3 (9%) cases, and decidual hemorrhage of 27 (82%) cases of multigravida.

Histopathological features of chronic abruption such as placental infarction, villitis, villous maldevelopment, maternal floor decidual necrosis, and decidual vasculopathy were present in 21 (63.6%) cases of multigravida, villous infarction was seen in 15 (45.4%) cases of multigravida whereas all these features of chronic abruption were present only one (5%) case of primigravida [Tables 1 and 2].

DISCUSSION

Antepartum hemorrhage is an important cause of maternal mortality and adverse perinatal outcome.^[5] Placenta previa and abruptio placenta are the major causes for antepartum hemorrhage.^[6] Studying the histopathological features of placenta in abruptio placenta provides the major information about the etiopathogenesis of abruption.^[7]

In Vaibhavi *et al.* study, the most common age of occurrence was 20–30 years, only 20% of cases were primigravida and, 80% were multigravida, denoting that the multiparity being a significant risk factor^[8] In Minna Tikkanen study, placental abruption occurs most commonly in women more than 35 years, but this was attributed to multiparity (≥ 3 deliveries) independent of age.^[9,10] Chorioamnionitis with hemorrhage and acute deciduitis was significantly associated with placental abruption in primigravida.

Placental infarction, villitis, villous maldevelopment, and maternal floor decidual necrosis were significantly associated with placental abruption in multigravida. These were the features of acute abruption with chronic features.

Villous infarction was a significant feature of placental abruption in multigravida which was a feature associated with acute abruption with chronic features.

CONCLUSION

This comparative study showed that the features of acute placental abruption were seen in primigravida when compare to multigravida, even though intervillous hemorrhage, intravillous hemorrhage, and increased syncytiotrophoblastic knotting are seen in both primi and multigravida. In addition to that, the features of chronic placental abruption were significantly seen in multigravida.

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Shobana and Samidoss: Histomorphological Features of Abruptio Placenta in Primi and Multigravida Mothers

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