DOI: 10.14260/jemds/2015/1315

ORIGINAL ARTICLE

A RETROSPECTIVE STUDY ON PLACENTAL IMPLANTATION SITE AND MATERNAL AND FOETAL OUTCOME IN PRIMIGRAVIDA

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HOW TO CITE THIS ARTICLE:
Pradeep Ganiga, Samantha Delia Mascarenhas. "A Retrospective Study on Placental Implantation Site and Maternal and Foetal Outcome in Primigravida". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 52, June 29; Page: 9075-9081, DOI: 10.14260/jemds/2015/1315

ABSTRACT: OBJECTIVE: To determine the Gestational Age at the onset of labour, the birth weight of the neonate and the mode of delivery in anterior and posterior placentation. **STUDY DESIGN:** This is a retrospective study which was done to determine the placental implantation site at term and to determine the corresponding maternal and foetal outcomes in Primigravida who delivered at A.J. Institute of Medical Sciences Labour Theatre, Mangalore and A.J. Hospital and Research Centre Labour Theatre, Mangalore between January 2012 and January 2014. **RESULTS:** In a sample size of 100 patients, a crucial observation was that there was no difference in the mode of delivery between either anterior or posterior placentation. (P-Value: 1.000). It was also noted that there was no significant correlation between placentation and the birth weight of the neonate (Fisher's exact index: 3.670, P-Value: 0.295). The null hypothesis can only be weakly rejected. It was noted that Preterm labour was more common in case of anterior placentation in the study group (6% in anterior placentation as compared to 2% in posterior placentation). However, the significance of placentation in determining the onset of delivery is not definite (Fisher's exact index: 3.301, P-value: 0.519) hence, the null hypothesis is weakly rejected. Additionally, there was no predisposition of maternal age to either anterior or posterior placentation. (Fisher's exact index: 3.308, P-value: 0.397). **CONCLUSION:** Placental implantation site plays no role in the determination of mode of delivery in a primigravida. Although, there is no significant data to suggest that there is a role for placental implantation site in the resultant birth weight of the neonate or the gestational age at the onset of labour, the hypothesis cannot be disapproved of.

KEYWORDS: AJIMS- A.J. Institute of Medical Sciences, Mangalore, AJHRC- A.J. Hospital and Research Centre, Mangalore, G.A.- Gestational Age, LSCS- Lower Segment Caesarean Section.

INTRODUCTION: The placental site in utero has been implicated as affecting the frequencies of placental retention, foetal presentations and postpartum bleeding.[1] Using soft-tissue radiography to determine the situation of the placenta, Stevenson (1949) and Whitehead (1953) found that the attachment of the placenta at one or other pole of the uterus may cause the foetus to lie transversely. Stevenson (1950) also stated that in breech pregnancies at or near term the placenta was always attached to the cornuo-fundal region of the uterus, and Fell (1956) confirmed that this placental site was more common in breech presentation.[2] Torpin and Faulkner (1957) reported that occipito-posterior positions were more frequent when the placenta was anterior (47.4%) than when the placenta was posterior (21.2%). Kushnirskaya and Ivanova (1958) found a high postpartum haemorrhage rate if the placenta was large or was attached to the lower uterine segment.

An interesting theory concerning the aetiology of pre-eclamptic toxaemia was proposed by Bieniarz (1959) on the basis of his finding that toxaemia was most frequent when the placenta was attached high in the uterus.[3] Csapo (1956) proposed a theory that the placenta gives its

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progesterone locally to the neighbouring myometrium rather than indirectly through the systemic circulation. The result of this would be a progesterone concentration gradient in the myometrium with a peak at the placental implantation site, thereby suggesting that the location of the placenta has an impact on the duration of labour as well.[4]

We performed a retrospective study on 100 patients who had attended Antenatal Clinics at AJHRC and AJIMS, Mangalore.

Our objectives were as follows:

1. To determine the gestational age at the onset of labour in a primigravida with anterior or posterior placental implantation.
2. To determine the birth weight of the neonate in anterior and posterior placental implantation.
3. To determine the mode of delivery in anterior and posterior placental implantation.

MATERIALS AND METHODS: Between January 2012 and January 2014, a random sample size of 100 patients (Primigravidas) who delivered at AJIMS and AJHRC Labour Theatres, Mangalore were studied retrospectively. The placental implantation site was determined by ultrasonography and then reconfirmed prior to evacuation of the placenta during the labour process.

Inclusion Criteria: All primigravidas attending Antenatal Clinics at A.J. Institute of Medical Sciences, Mangalore and A.J. Hospital and Research Centre, Mangalore

Exclusion Criteria:

a. Twin Gestation.
b. Invitro Fertilization.
c. Placenta praevia.
d. Fundal/ Lateral/ Cornual placental implantation.

RESULTS:

MATERNAL AGE * PLACENTATION:

Crosstab					
			PLACENTATION		Total
			Anterior	Posterior	
AGE	<20	Count	2	7	9
		% within PLACENTATION	4.0%	14.0%	9.0%
	21-25	Count	24	21	45
		% within PLACENTATION	48.0%	42.0%	45.0%
	26-30	Count	22	21	43
		% within PLACENTATION	44.0%	42.0%	43.0%
	31-35	Count	2	1	3
		% within PLACENTATION	4.0%	2.0%	3.0%
Total		**Count**	**50**	**50**	**100**
		% within PLACENTATION	**100.0%**	**100.0%**	**100.0%**

Table 1

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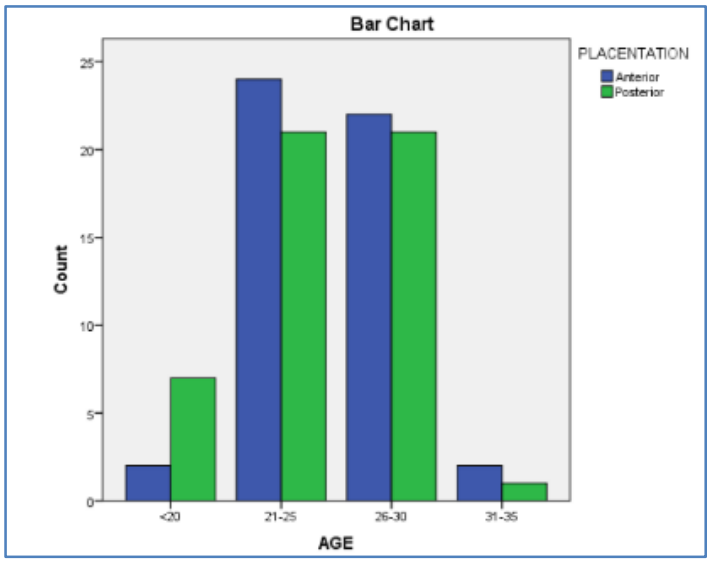
Chi-Square Tests		
	Value	P VALUE
Fisher's Exact Test	3.308	.397
N of Valid Cases	100	



GESTATIONAL AGE * PLACENTATION:

Crosstab					
			PLACENTATION		Total
			Anterior	Posterior	
GESTATIONAL AGE	<37	Count	3	1	4
		% within PLACENTATION	6.0%	2.0%	4.0%
	37.1-38	Count	2	6	8
		% within PLACENTATION	4.0%	12.0%	8.0%
	38.1-39	Count	12	14	26
		% within PLACENTATION	24.0%	28.0%	26.0%
	39.1-40	Count	20	17	37
		% within PLACENTATION	40.0%	34.0%	37.0%
	>40	Count	13	12	25
		% within PLACENTATION	26.0%	24.0%	25.0%
Total		**Count**	**50**	**50**	**100**
		% within PLACENTATION	**100.0%**	**100.0%**	**100.0%**

Table 2

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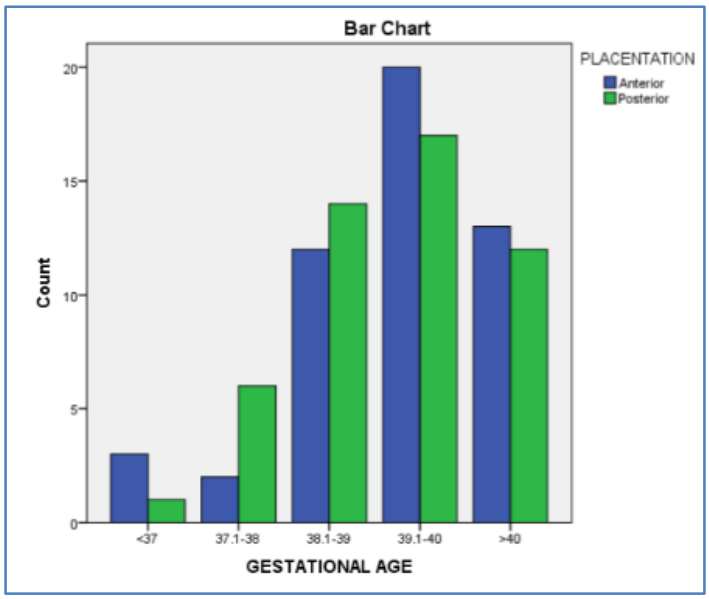
Chi-Square Tests		
	Value	**P VALUE**
Fisher's Exact Test	3.301	.519
N of Valid Cases	100	



MODE OF DELIVERY * PLACENTATION:

Crosstab					
			PLACENTATION		**Total**
			Anterior	**Posterior**	
MODE OF DELIVERY	LSCS	Count	13	13	26
		% within PLACENTATION	26.0%	26.0%	26.0%
	Vaginal	Count	37	37	74
		% within PLACENTATION	74.0%	74.0%	74.0%
Total		**Count**	**50**	**50**	**100**
		% within PLACENTATION	**100.0%**	**100.0%**	**100.0%**

Table 3

Chi-Square Tests			
	Value	**df**	**P VALUE**
Pearson Chi-Square	.000	1	1.000
N of Valid Cases	100		
b. Computed only for a 2x2 table			

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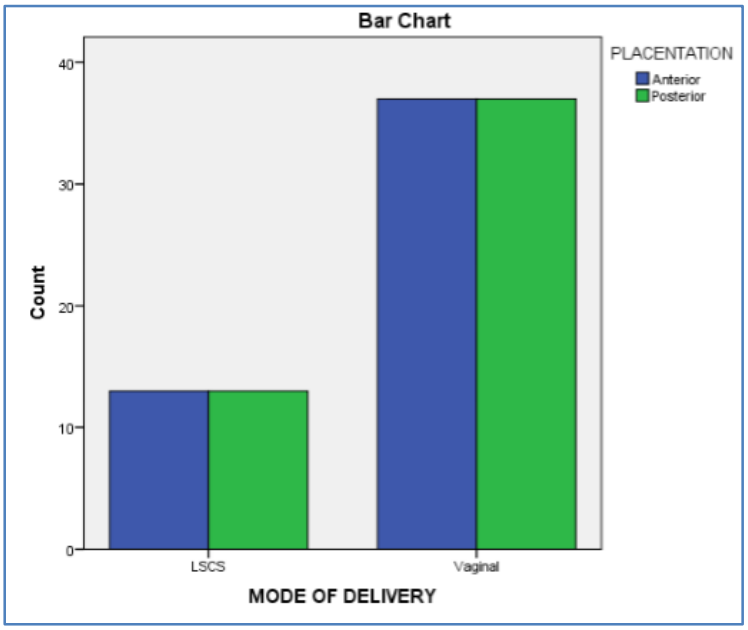

BIRTH WEIGHT * PLACENTATION:

Crosstab					
			PLACENTATION		Total
			Anterior	Posterior	
BIRTH WEIGHT	<2.6	Count	13	6	19
		% within PLACENTATION	26.0%	12.0%	19.0%
	2.6-3	Count	19	20	39
		% within PLACENTATION	38.0%	40.0%	39.0%
	3.1-3.5	Count	14	20	34
		% within PLACENTATION	28.0%	40.0%	34.0%
	3.6-4	Count	4	4	8
		% within PLACENTATION	8.0%	8.0%	8.0%
Total		**Count**	**50**	**50**	**100**
		% within PLACENTATION	**100.0%**	**100.0%**	**100.0%**

Table 4

Chi-Square Tests		
	Value	**P VALUE**
Fisher's Exact Test	3.670	.295
N of Valid Cases	100	

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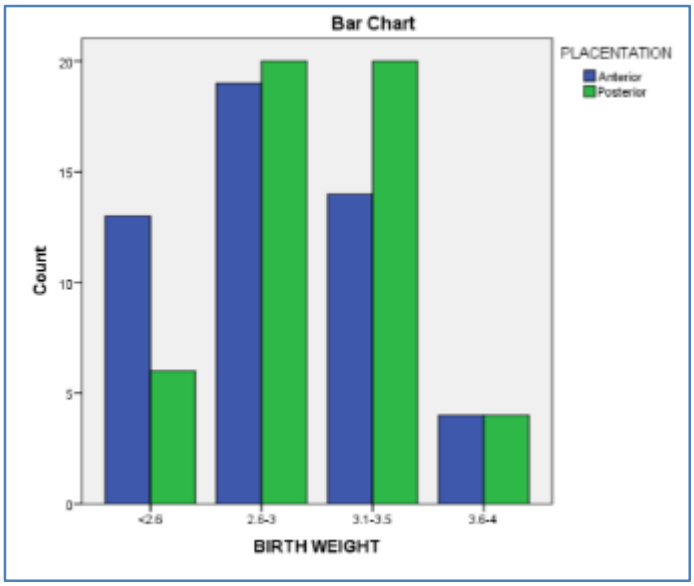

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CONCLUSION: Placental implantation site plays no role in the determination of mode of delivery in a primigravida. Although, there is no significant data to suggest that there is a role for placental implantation site in the resultant birth weight of the neonate or the gestational age at the onset of labour, the hypothesis cannot be disapproved of.

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FINANCIAL OR OTHER COMPETING INTERESTS: None

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Date of Submission: 08/06/2015.
Date of Peer Review: 09/06/2015.
Date of Acceptance: 23/06/2015.
Date of Publishing: 26/06/2015.