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Research Article

**ANALYSIS OF DIAGNOSTIC ACCURACY OF ULTRASOUND
(USG) IN PRENATAL DIAGNOSIS OF PLACENTA ACCRETA
IN PAKISTAN**Dr Shamsa Kanwal¹, Dr Almas Sarwar², Dr Tahira Munir³¹Jinnah Hospital, Lahore, ²Sir Ganga Ram Hospital Lahore,³Allama Iqbal Memorial Hospital Sialkot.

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Abstract:

Introduction: Abnormally deep attachment of the placenta to the uterine wall is collectively called placenta accreta (PA).

Objectives of the study: The main objective of the study is to analyze the diagnostic accuracy of ultrasound (USG) in prenatal diagnosis of placenta accreta in Pakistan.

Material and methods: This cross-sectional study was conducted in Jinnah hospital, Lahore during November 2018 to April 2019. The data was collected from 100 patients. All those patients were at a high risk of abnormal placentation (placenta accrete, increta and percreta) regarding their clinical history of either one or all of the following: placenta previa, previous uterine interventional procedures (e.g. cesarean sections, dilation & curettage and myomectomy, maternal age of 35 years or more and grand multiparity). All these patients were followed till delivery.

Results: The data was collected from 100 patients. The mean age of the patients was 39.56 ± 5.56 years. In our study HB-difference (HB-dC) between pre- and post-operative values and estimated blood loss were the most significant risks factors for abnormal placentation added to risk factors known for placenta accrete.

Conclusion: It is concluded that US is a good basic tool for investigation for suspected PA, and if the diagnosis remains unsettled, MRI is a useful back-up measure.

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INTRODUCTION:

Abnormally deep attachment of the placenta to the uterine wall is collectively called placenta accreta (PA). The incidence varies from 1 in 533 to 1 in 2510 deliveries. The precise etiology of PA is unknown, but prior cesarean section (CS) and placenta previa are considered risk factors [1]. Prenatal suspicion of PA is usually based on clinical history and imaging; however, no single diagnostic technique affords complete assurance for the presence or absence of PA. Morbidly adherent placenta (MAP) is defined as abnormal placental adherence, either in whole or in part of the placenta to the underlying uterine wall. Morbid adherent placentas is rare complication of placentation but has life and fertility threatening complications and includes placenta accreta, percreta and increta [2]. It is found to be the third most frequent indication for emergency obstetrical hysterectomy next to uterine rupture and atony in Pakistan [3]. Placenta accreta is a pathological condition in which the placental trophoblast invades the endometrium beyond the Nitabuch's layer due to a defect in the decidua basalis.

In more severe cases, the trophoblast invades the myometrium (placenta increta) or the serosa and beyond (placenta percreta) [4]. In a series of studies by Miller et al. including 62 pathologically confirmed cases of abnormal placentation, 76% were accreta, 18% were increta, and 6% were percreta. The major morbidity associated with such an abnormal placentation primarily arises from a significant blood loss that occurs at the time of delivery, requiring longer maternal hospital stay and blood transfusion [5]. In addition, pregnancies complicated by placenta accreta are thought to be associated with increased incidence of cystotomy, ureteral injury, pulmonary embolism, need for ventilator use, reoperation, and intensive care unit (ICU) admission. Risk factors for placenta accreta include prior cesarean section (CS) delivery, uterine instrumentation and intrauterine scarring, all of which may be associated with damage to or absence of the decidua basalis [6].

OBJECTIVES OF THE STUDY:

The main objective of the study is to analyze the diagnostic accuracy of ultrasound (USG) in prenatal diagnosis of placenta accreta in Pakistan.

MATERIAL AND METHODS:

This cross-sectional study was conducted in Jinnah hospital, Lahore during November 2018 to April 2019. The data was collected from 100 patients. All those patients were at a high risk of abnormal placentation (placenta accrete, increta and percreta) regarding their

clinical history of either one or all of the following: placenta previa, previous uterine interventional procedures (e.g. cesarean sections, dilation & curettage and myomectomy, maternal age of 35 years or more and grand multiparity. All these patients were followed till delivery.

STATISTICAL ANALYSIS:

The data was collected and analyzed using SPSS version 20.0.

RESULTS:

The data was collected from 100 patients. The mean age of the patients was 39.56 ± 5.56 years. In our study HB-difference (HB-dC) between pre- and post-operative values and estimated blood loss were the most significant risks factors for abnormal placentation added to risk factors known for placenta accrete. Postpartum SICU admission, prolonged hospital stay and CS hysterectomy were more common in the cases of placenta accreta associated with abnormal placentation. However, they were statistically insignificant.



Figure 01: Ultrasound signs of abnormal placentation in patients with placenta accrete

Table 01: Obstetric results and pathological findings in women with placenta previa

	Mean	Range
Gestational age at delivery (weeks)	39.5	29–36
	<i>n</i>	(%)
Indications for delivery		
Pathological CTG	6	14.3
Elective	29	69.0
Severe bleeding	7	16.7
Complications	10	23.8
Bladder injury	6	14.3
Bowel injury	1	2.4
Ureteric injury	2	4.8
Need for massive blood transfusion	8	19.0
Pathological findings		
Placenta accreta	28	66.7
Placenta increta	13	30.9
Placenta percreta	1	2.4

DISCUSSION:

The results on US were comparable to results reported by other authors. Because of its cost and the limited availability, we used MRI only for suspicious cases. The results for MRI were also similar to those previously reported. US showed high sensitivity, specificity and negative predictive values, but the positive predictive value was relatively low. MRI may be used as a problem-solving tool and is primarily only of use in difficult cases [7]. Morbidly adherent placenta with its variants is one of the most feared complications causing high morbidity and mortality in obstetrics. Pelvic ultrasonography has been the most commonly used imaging modality for the diagnosed of MAP. Levine⁹¹ and the coworkers reported their experience with 19 women at risk of whom seven had MAP [9]. Ultrasonography accurately identified six of the seven women and correctly identified normal placentation in 11 of 12 cases. In a larger series, Chou et al followed 80 women prospectively and of 16 considered to have ultrasound findings consistent with MAP, had tissue evidence confirming the diagnosis of the remaining 64 studies interpreted as negative, placenta was adherent in three and the remainder was accurately diagnosed [9], resulting in a sensitivity of 82% and specificity of 96.8%. The findings of these two studies suggest that ultrasonography has a primary role in screening women at risk of MAP [10, 11].

CONCLUSION:

It is concluded that US is a good basic tool for investigation for suspected PA, and if the diagnosis remains unsettled, MRI is a useful back-up measure.

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