Cesarean scar pregnancy; an institutional experience

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ABSTRACT

Objective: To compare the efficacy of laparotomy versus vaginal dilatation and evacuation in the management of cesarean scar pregnancy in low resource setting.

Study Design: Comparative interventional study

Place and Duration: Gynaecology department of Nishtar Medical University from 1st June, 2016 to 30th May, 2017 over the period of one year.

Methodology: Total 24 patients were included in study, divided on the basis of treatment modality in two groups, group-A underwent laparotomy and resection of cesarean scar pregnancy while group-B underwent dilatation and evacuation of products of conception vaginally. Independent sample t-test is applied to compare the performance of two procedures by comparing integrity of scar, operative time, blood transfusion and intra peritoneal hemorrhage.

Results: Patients of group-A underwent laparotomy. There was intact scar, no blood transfusion and shorter operative time (30±15min) with smooth recovery. Patients of groups-B underwent dilatation and evacuation vaginally, 83.3% patients had moderate bleeding so their procedure was converted to laparotomy immediately and 16.7 % patients underwent laparotomy after period of observation because of hypovolemic shock. In this group 33.3% patients were found to have disrupted scar, 33.3% had intraperitoneal hemorrhage, 16.7% had blood transfusions and longer operation time (60±15min).

Conclusion: Laparotomy is better than vaginal procedure to reduce morbidity in cesarean scar pregnancy in low resource setting.

Keywords: Pregnancy, Cesarean scar pregnancy, Frequency, Prevalence, Morbidity, Cesarean section, Laparotomy

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INTRODUCTION

The cesarean scar pregnancy (CSP), which was rare till now, has been rising steadily and is associated with many serious complications. The first ever cesarean scar pregnancy was reported by Larsen and Solomon in 1978[1]. Since then its incidence is rising because of an increased prevalence of cesarean section and increase use of ultrasound examination[2,3].

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This is one of the distinct type of ectopic pregnancy that will never occur in the first pregnancy and in patients with no previous cesarean sections. The reported rate of cesarean scar pregnancy CSP varies differently accounts for 6% of all ectopic pregnancy among women with previous cesarean section. Cesarean scar pregnancy are of two types as described by Vial[4], endogenic pregnancy progresses to the cervico-isthmic space or uterine cavity with a potential to reach viable age and in exogenic cesarean scar pregnancy, It progresses towards bladder and abdominal cavity[5]. The endogenic cesarean scar pregnancy results in viable pregnancy but contains high risk of placenta previa with morbid adherence. The varied appearance of cesarean scar pregnancy and placental development can cause the difficulty in its diagnosis. The diagnosis of cesarean scar pregnancy is mainly done by ultrasonography either transvaginal or abdominal. This can be aided with magnetic resonance imaging as second line investigation. The ultrasound was used as a main diagnostic modality where all the patients fulfilled following criteria[6] (a) empty uterine cavity, (b) empty cervical canal, (c) gestational sac in the anterior part of the uterine isthmus, (d) absence or thin layer of myometrium between bladder and gestational sac, (e) evidence of prominent trophoblastic/placental circulation on Doppler examination. The diagnostic criteria may not valid because it has derived from descriptive case series[7]. The true prevalence of cesarean scar pregnancy is likely somewhat higher than estimated because of

under reporting.

The clinical presentation of CSP varies from incidental diagnosis to uncontrolled bleeding per vaginum. The most common presentation was gestational amenorrhea, vaginal bleeding (38%), and abdominal pain with bleeding (6%) and isolated abdominal pain (4%)[8]. This clinical presentation was infrequently found in other studies so misdiagnosis was unduly high. The misdiagnosis of retained product of conception, cervical ectopic pregnancy and gestational trophoblastic tumor were reported[8].

Cesarean scar pregnancy needs specific management but unfortunately there is no consensus about its proper management[9].The main aim of treatment of cesarean scar pregnancy is to prevent massive blood loss, conserve the uterus for future fertility, and improve women health and quality of life[1]. The management could be medical or surgical[10]. Methotrexate is given as local injection or systemic and followed by falling beta HCG as medical treatment option[11,12]. Surgical methods options are dilatation and curettage, excision of trophoblastic tissue via laparotomy or laparoscopy, dilatation and evacuation of trophoblastic tissue under laparoscopic or hysteroscopic guidance combined with uterine artery embolization. Tamor described that in the case of cesarean scar pregnancy, local methotrexate- and hysteroscopic-directed procedures had the lowest complication rates[13]. Razia Sultana reported a case of cesarean scar pregnancy underwent vaginal curettage followed by massive hemorrhage ended up in hystrectomy[14].

Currently all the management options are mainly based on case reports and small case series; therefore an ideal modality is still unclear. We planned to perform this study to find out best possible treatment. We compared the abdominal versus vaginal route as a treatment option in the management of cesarean scar pregnancy. This study was conducted with an objective to compare the efficacy of laparotomy versus vaginal dilatation and evacuation in the management of cesarean scar pregnancy in low resource setting.

METHODOLOGY

Twenty four pregnant patients were enrolled under comparative interventional study in Gynaecology Department of Nishtar Medical University/ Hospital from1st June, 2016 to 30th May, 2017. All the patients were admitted with diagnosis of cesarean scar pregnancy from outpatient department were included. Their diagnosis was made on ultrasonography on the proposed crietreria[6]. Patients with previous cesarean section during first trimester were included and women with twin pregnancy and uterine abnormality were excluded in study.The demographic record of all women were reviewed including age, parity, gestational age and number of previous cesarean sections.

Patients were divided in two groups of 12 by lottery method, each group comprising twelve patients, group-A (n-12) underwent laparotomy and surgical resection of CSP and group-B (n-12) underwent dilatation and evacuation of products of conception per vagina. Other variables of the study were integrity of scar site, hemoperitoneum, operative time and blood transfusions. All the procedures were conducted by senior obstetrician with two years' experience post fellowship under general anesthesia after proper consent and pre anesthetic evaluation. Informed consent obtained from all the patients and permission to conduct study was taken from hospital ethical committee.

Data Analysis: The data was gathered and analyzed using SPSS-21. The results were shown in frequency and percentage tables. Independent sample t-test is applied to compare the performance of two procedures by integrity of scar site, hemoperitoneum, operative time and blood transfusions

RESULTS

Twenty four patients were diagnosed as cesarean scar pregnancy among total 15349 patients over a one year period of study, so frequency of CSP was 0.15% and 1.1% for all ectopic pregnancy. Demographic Data of all the patients is shown in frequencies and percentages (Table-I).

Table-I: Frequency of demographic parameters of the patients (N=24)

Variables	Characteristics	Number of patients	% age
Age (years)	<20	2	8.3%
	20-30	15	62.5%
	>30	7	29.2%
Parity	P1	7	29.2%
	P2-3	7	29.2%
	P>3	10	41.7%
No. of previous cesarean scar	1	6	25%
	2	8	33.3%
	>3	10	41.7%
Gestational Age(weeks)	6	1	4.2%
	6-9	16	66.6%
	9.-11	7	29.2%

The patients of Group A (n-12) underwent laparotomy as a primary procedure. There was intact dusky color uterine scar with no hemoperitoneum. All the products of conception were completely removed after giving small incision over the scar after dissecting the urinary bladder downwards. Uterus was closed in continuous suture using vicryl 1/0. Products of conceptions were confirmed to be trophoblastic tissue on histopathology in all patients. Mean operative time was 30±15 minutes with no significant blood loss, blood transfusion, hysterectomy and maternal mortality.

The patients of group B (n-12) underwent dilatation and evacuation, ten patients (83.3%) proceeded to laparotomy immediately because of heavy vaginal bleeding and the remaining two patients (16.7%) underwent laparotomy after a period of observation because of hypovolemic shock. In group B Intraoperatively, previous scar site was disrupted in four (33.3%) patients and hemoperitoneum in four (33.3%) of patients. The mean operative time was 60 ±15 minutes; two patients (16.7%) received blood transfusion. All the patients of both groups had

smooth recovery and got discharged on third postoperative day. The comparison of both groups is shown in Table-II.

Table-II: Comparison of management among both groups (N=24)

Operative findings	Group A (n=12)	Group B (n=12)	Test of significance
Disruption of scar site	Nil	4	P< 0.005
Intra peritoneal hemorrhage	Nil	4	
Mean operative time	30 ±15 min	60 ±15min	
Blood transfusion	Nil	2	

There was a significant better outcome with patients of group A as shown by the independant sample T-Test with the significantly low p-value <0.005. We found that laparotomy is better than dilatation and evacuation in terms of timely decision, less blood loss, shorter operative time and p-value <0.05 supports our hypothesis, so it is recommended to perform laparotomy instead of dilatation and evacuation in cesarean scar pregnancy.

DISCUSSION

Incidence of cesarean scar pregnancy is 1 in 2000, 6% among all ectopic pregnancies in previous scarred uterus. McLaren reported its incidence as 1/1800 to 1/ 2200 pregnancies[8]. In our study frequency of cesarean scar pregnancy was 0.15% and overall frequency of ectopic pregnancy was 1.1%.There were six maternal deaths due to haemorrhage in women with a history of caesarean section in the 2006–08 Centre for Maternal and Child Enquiries report although, the site of implantation was not always identified. Different modalities has been discussed so far for the management of cesarean scar pregnancy. Expectant management may be suitable for women with small, nonviable scar pregnancies and may be considered if the pregnancy is partially implanted into the scar and grows into the uterine cavity, myometrium thickness of more than 2mm[1], provided that the woman is counselled regarding the associated potential risks, haemorrhage and morbidly adherent placentation, and she declines termination of the pregnancy. But it is rarely successful and Rotas reported uterine rupture in half of the patients who were kept for observation[15].

Treatment with methotrexate(local or systemic) has shown high success rates when beta HCG of less than 5000 miu/ml. McLaren found methotrexate with uterine artery embolization to be an effective treatment option[8]. Zhang performed surgical evacuation of CSP through vaginal route which added the benefits of quick recovery, short hospital stay, less pain, less analgesia requirements and use of natural orifice as a gateway to the peritoneal cavity[16]. Wu performed curettage and suction under ultrasound guidance followed by the use of cook cervical ripening balloon in patients with excessive bleeding per vaginum[17]. Pan performed hysteroscopic resection of CSP through vaginal route[18]. Zhonghua had clinical comparative analysis of surgical resection of pregnancy by hysterotomy and hysterectomy for CSP. He concluded that SRPH (surgical resection of pregnancy through hysterotomy) is an effective and safe option in early pregnancy and stable patients[19]. Koplay performed vaccum aspiration under laparoscopic guidence[20]. Mahghoub preferred the laparoscopic resection of cesarean scar pregnancy and found it as safe option of treatment[21]. Wang concluded that methotrexate or uterine artery embolization are not suitable methods for endogenous cesarean scar pregnancy[22]. Licenberg concluded a laparoscopy as a safe option for exogenous cesarean scar pregnancy[23]. KoHk described the efficacy of prophylactic uterine artery embolization before any surgical procedure with high risk for massive bleeding[24]. Razia Sultana reported one case of cesarean scar pregnancy that started as vaginal evacuation but ended up in hysterectomy because of massive hemorrhage[14].

In our study we compared that laparotomy with the vaginal dilatation and evacuation. We found laparotomy far superior to dilatation and evacuation. During laparotomy, all the patients had intact scar, no hemoperitoneum and shorter hospital with no need of blood transfusion. While dilatation and evacuation per vaginal procedure was associated with disrupted scar, more blood loss, more time consuming and all patients ended up in laparotomy to save their future fertility and lives.

Women whenever diagnosed with cesarean scar pregnancy should be well counselled that such pregnancies are associated with severe maternal morbidity and mortality. There have also been numerous small case series and case reports of intra-abdominal rupture and severe vaginal haemorrhage at the point of diagnosis or following intervention[13]. There is insufficient evidence to recommend any one specific intervention over another for the management of caesarean scar pregnancy, but the current literature supports a surgical rather than medical approach as the most effective.

CONCLUSION

Laparotomy is better than vaginal procedure to reduce morbidity in cesarean scar pregnancy especially in low resource setting.

CONTRIBUTION OF AUTHORS

Qadir SY: Conceived Idea, Designed research methodology, Literature search, Data collection, Data interpretation, Statistical analysis, Manuscript writing.

Ali S: Data collection, Literature review, Manuscript writing, Manuscript final reading, Final critical review of manuscript.

Siddiq S: Data collection, Data interpretation, Literature review, Manuscript drafting, Data compilation and analysis, Literature search, Manuscript writing, Manuscript final reading and approval, Statistical analysis

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