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RESEARCH ARTICLE
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CESAREAN SCAR PREGNANCY MANAGEMENT: KEY INSIGHTS

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ABSTRACT

Introduction: Cesarean scar pregnancy is defined by the full or partial implantation of the gestational sac in the myometrium scar of the uterine incision from a previous cesarean section. The clinical presentation of a CSP is highly variable, with vaginal bleeding being the most common complaint, with or without abdominal pain. CSP can continue to a viable gestational age and can result in placentra accreta disorder.

Materials and Methods: This prospective study was done in department of obstetrics and gynecology SKIMS Soura Srinagar. In our study, we observed 16 cases of cesarean scar pregnancy over a period of 3 years from August 2021 to September 2024. All women attending our antenatal OPD or casualty with history of amenorrhoea, pain abdomen and bleeding per vagina with positive urine pregnancy test, history of previous LSCS and TVS documented caesarean scar pregnancy or intraoperative features suggestive of caesarean scar pregnancy were included in our study.

Results and Observations: A total of 16 cases were taken in our study over a period of 3 years. Maximum number of patients 8 (50%) were in the age group of 25-30 years. 37% of patients were 3rd gravida. Majority of patients 9 (56.2%) had history of previous two LSCS. Majority of patients (43.7%) had gestational age of 8-10 weeks. In our study we observed different treatment options for the same. Laparotomy with scar excision and repair was done in 31.2% of cases followed by laparoscopic scar excision and repair in 18.7%, Systemic MXT in 18.7%, USG guided dilation and evacuation in 12.5%, laparotomy and scar excision and IU tamponade, Suction and evacuation, Suction and evacuation + IU tamponade and Hysteroscopic removal in 6.25% of cases in each.

Conclusion: The first problem is the diagnosis, which is really difficult for clinicians working in the primary care centers. The second and the main problem is the treatment. Efforts should be made to educate clinicians and radiologists to identify features of scar pregnancies and refer them selectively to tertiary centers.

Keywords: Cesarean scar pregnancy (CSP), placentra accreta disorder, Laparotomy with scar excision and repair, Suction and evacuation.

INTRODUCTION

Cesarean scar pregnancy (CSP) is a rare form of ectopic implantation that occurs in 1:1800 to 1:2200 pregnancies.[1,2] It is defined by the full or partial[3] implantation of the gestational sac in the myometrium scar of the uterine incision from a previous cesarean section.[4,5–8] The clinical presentation of a CSP is highly variable, with vaginal bleeding being the most common complaint, with or without abdominal pain.[9,10,11,12] Yet, approximately 20%[10] to 25%[11] of patients are asymptomatic at the time of diagnosis[11,12]. CSP is likely a precursor to, and shares common histology with placenta accreta spectrum (PAS).

The two conditions may represent a continuum of the same disease, with CSP being a diagnosis of the first (and early second) trimester, and PAS being diagnosed later in pregnancy (second trimester and beyond).The incidence of CSP is increasing due to the rising number of primary CSs and decline in vaginal deliveries after previous CS and now accounts for 6.1% of all "ectopic" pregnancies.[13] There are various risk factors for CSP like history of previous CSP, patients with a prior cesarean birth, dilation and curettage [D&C], endometrial ablation, manual removal of the placenta and In vitro fertilization. As the primary cesarean rates increase, the complications in the subsequent pregnancies also increase. Among these complications, cesarean scar pregnancies (CSP) and placental invasion anomalies are the most important ones because of the catastrophic pregnancy outcomes.[14, 15] CSP can continue to a viable gestational age and can result in placentra accreta disorder(PASD).[16-18] CSP is a diagnosis made based on first- (or early second-) trimester transvaginal ultrasound (TVUS) findings of a pregnancy implanted on or in a prior hysterotomy scar/niche and confirmed at the time of surgery with histologic findings consistent with placenta accreta spectrum (PAS) disorder. The difficult part is to make a treatment plan on a subject where the treatment is not standardized, and there are no generally accepted guidelines worldwide.

MATERIAL AND METHODOLOGY

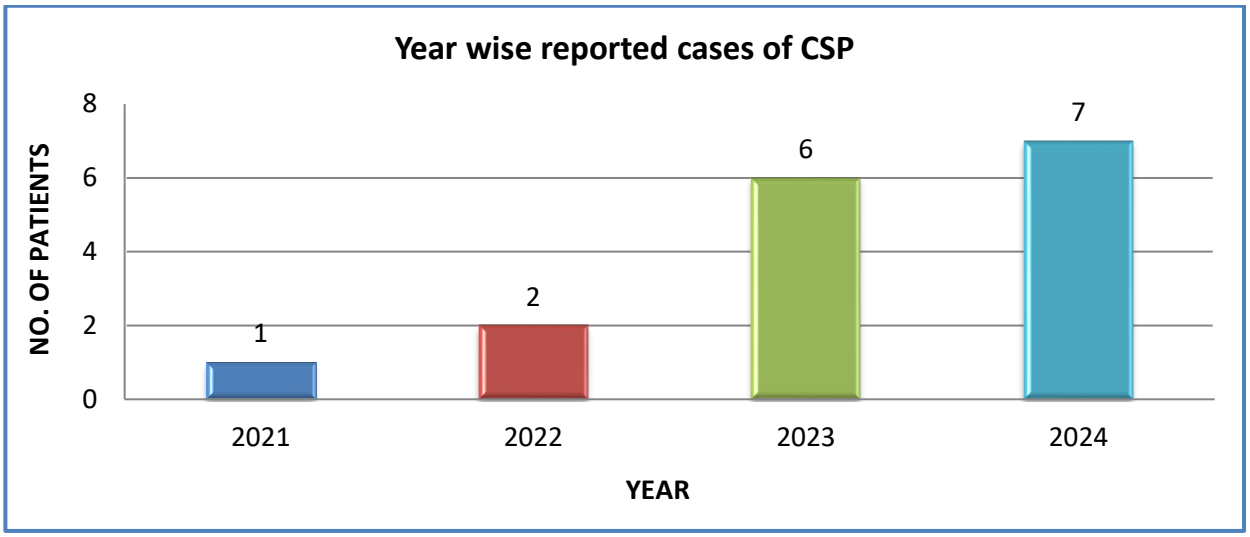
This prospective study was done in department of obstetrics and gynecology SKIMS Soura Srinagar. In our study, we observed 16 cases of cesarean scar pregnancy over a period of 3 years from August 2021 to September 2024. All women attending our antenatal OPD or Casualty with history of amenorrhoea, pain abdomen and bleeding per vagina with positive urine pregnancy test, history of previous LSCS and TVS documented caesarean scar pregnancy or intraoperative features suggestive of caesarean scar pregnancy were included in our study. A detailed history was taken and examination was done. A transvaginal ultrasound examination was performed followed by baseline investigations and serum βHCG. Some patients were referred from peripheries and misdiagnosed as pregnancy failures.

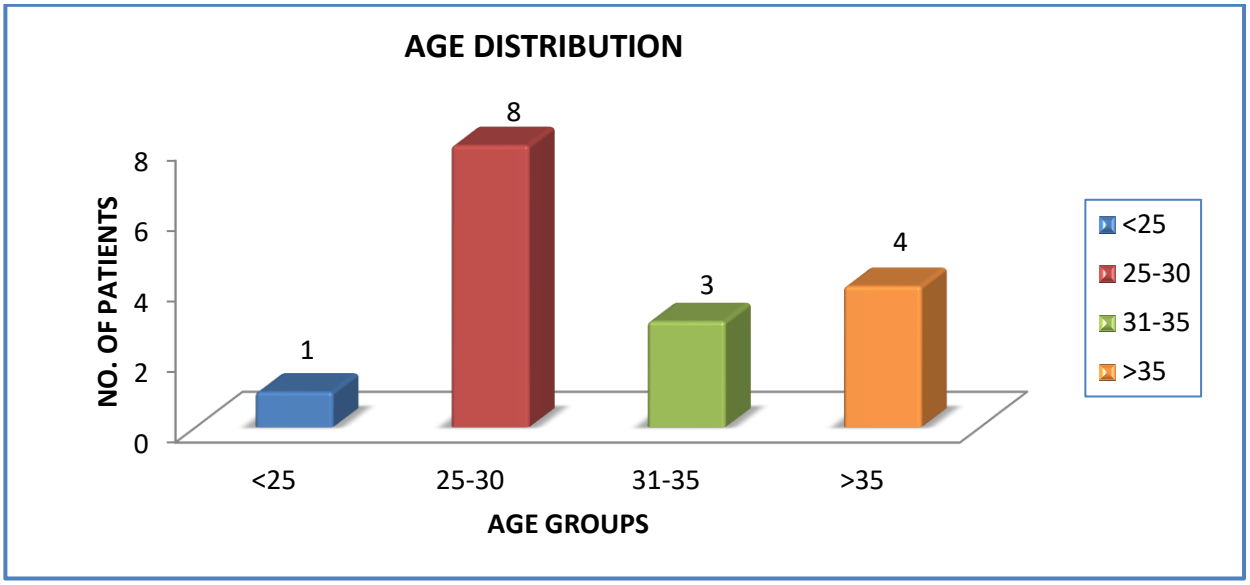
In such patients intraoperative diagnosis of caesarean scar pregnancy was made. In our study, the criteria for the diagnosis of CSP using transvaginal ultrasound (TVU) were an empty uterine cavity, a placenta or pregnancy sac implanted in the cesarean scar site, a pregnancy sac filling the niche of the scar, a thin layer (1–3 mm) of myometrium or its absence between the pregnancy sac and the bladder, a closed cervix and an empty cervical canal, a fetal pole with or without cardiac activity, and the presence of a prominent and at times rich vascular pattern in the area of a cesarean section scar with a positive pregnancy test.

AIMS AND OBJECTIVES

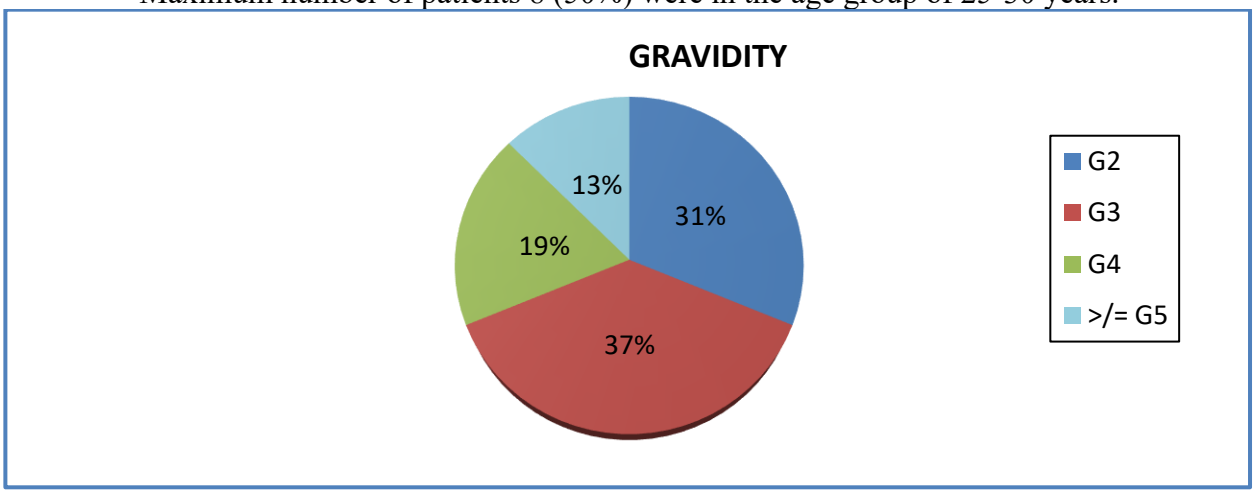
To assess the clinical profile and management strategy in patients with cesarean scar pregnancy.

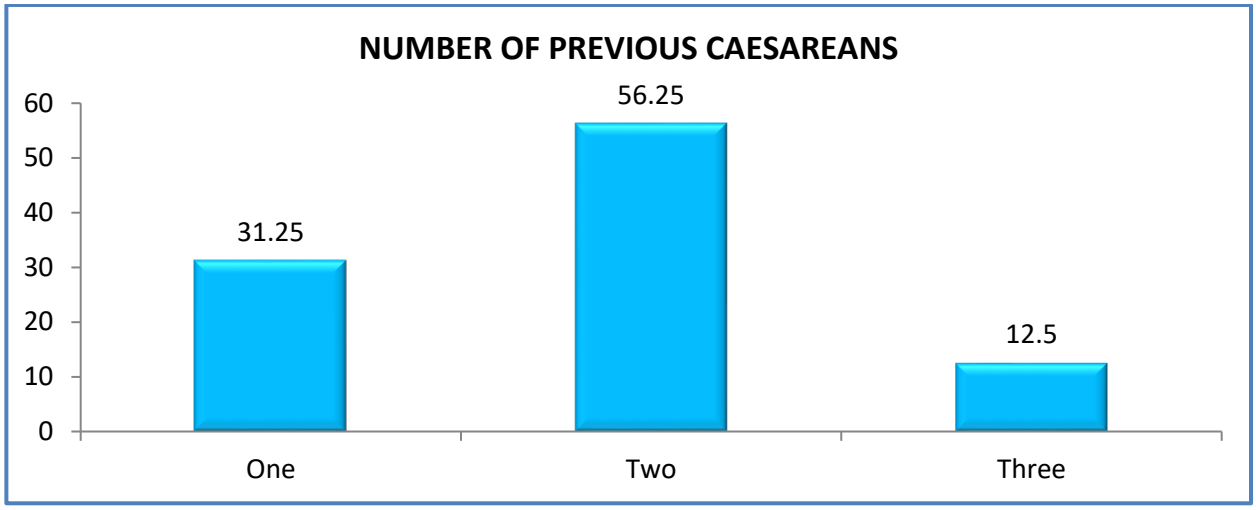
RESULTS AND ANALYSIS

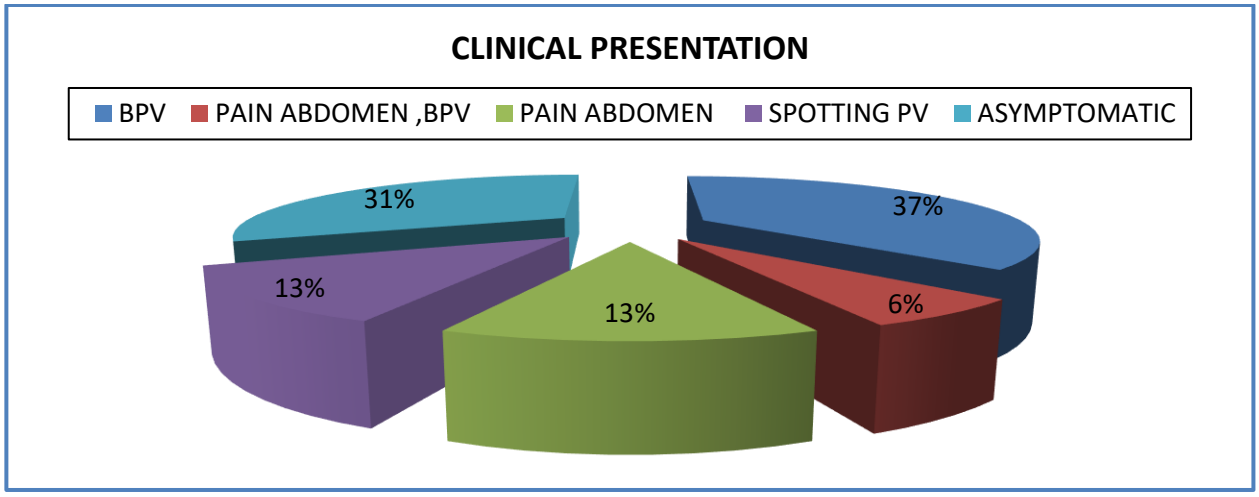


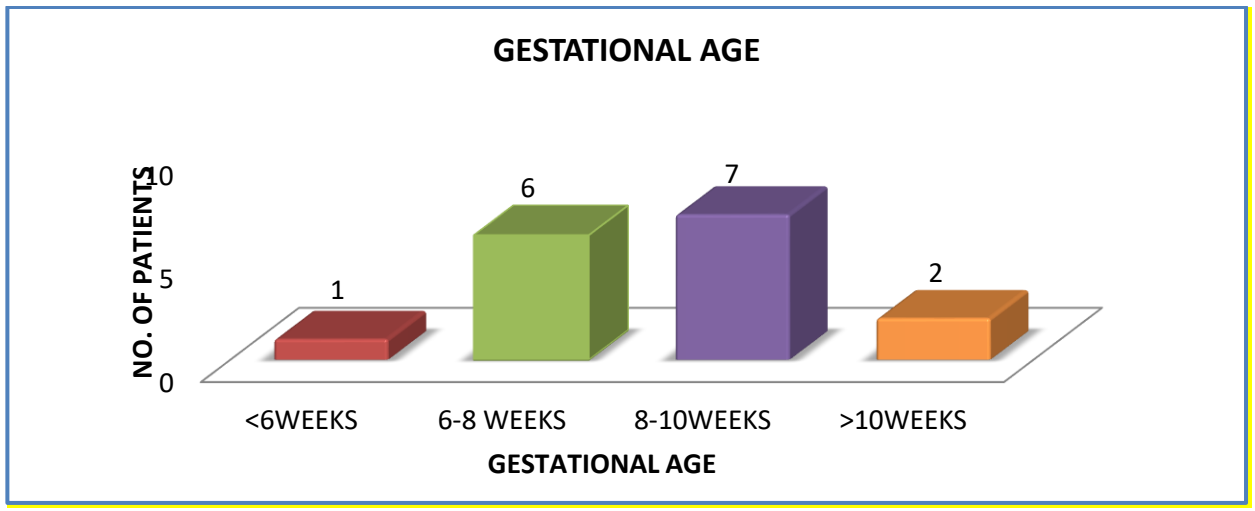


Maximum number of patients 8 (50%) were in the age group of 25-30 years.

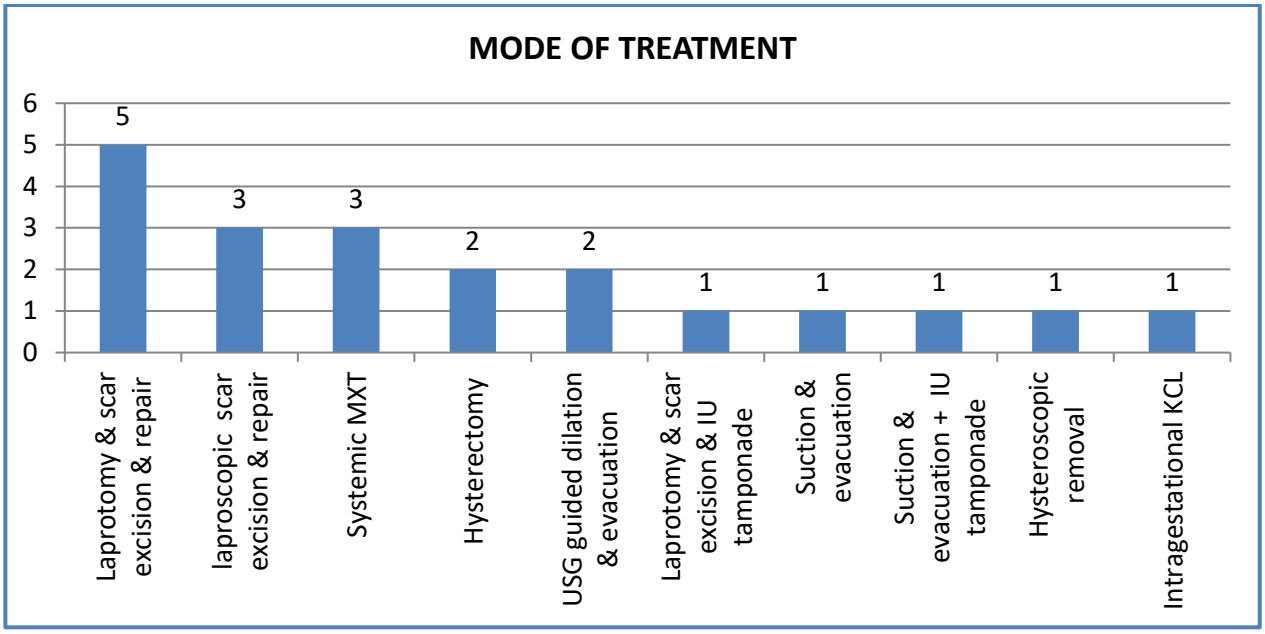


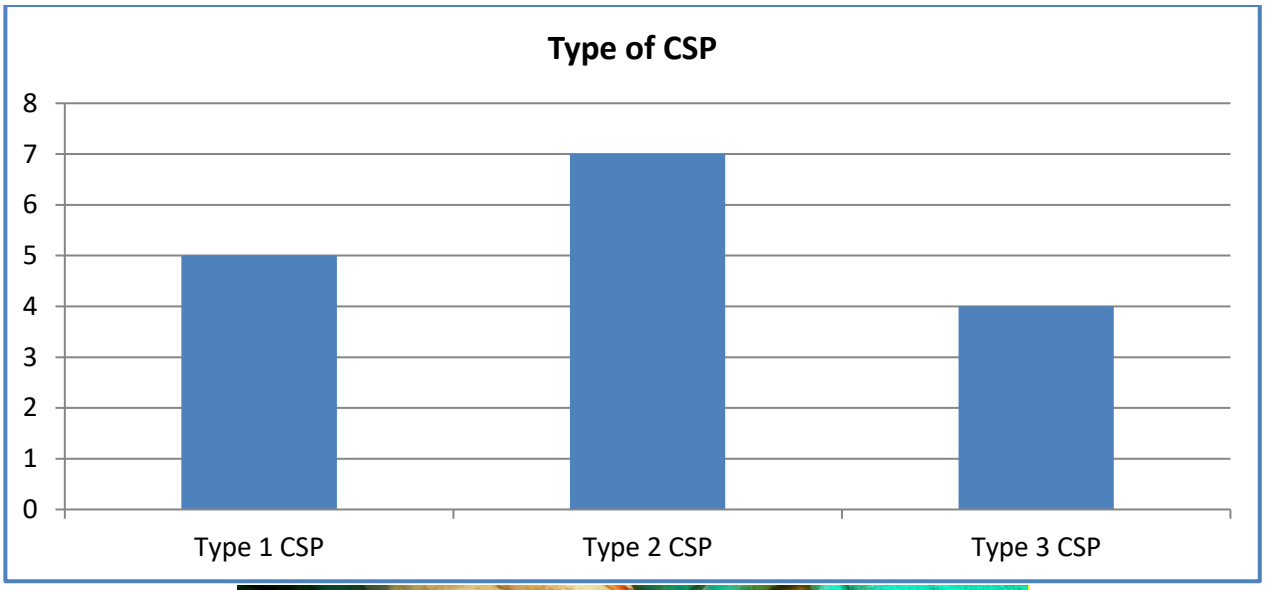


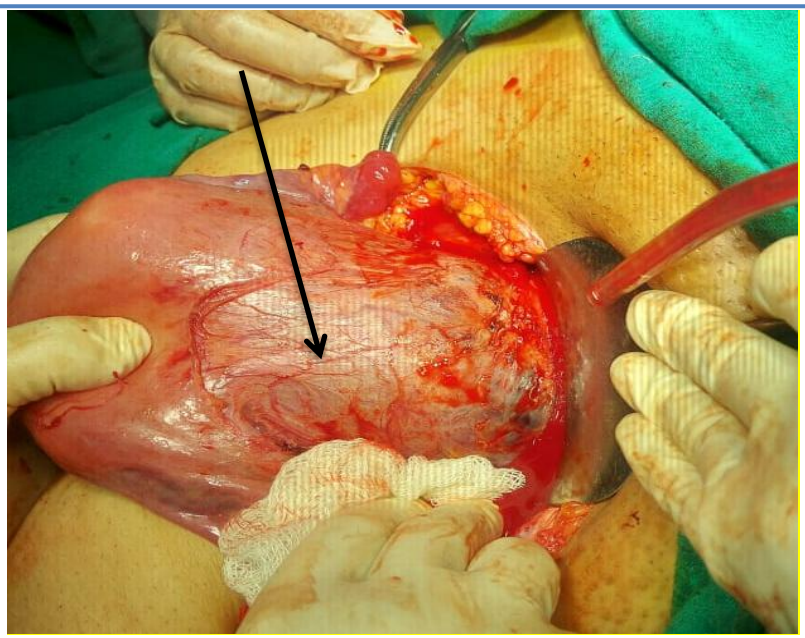




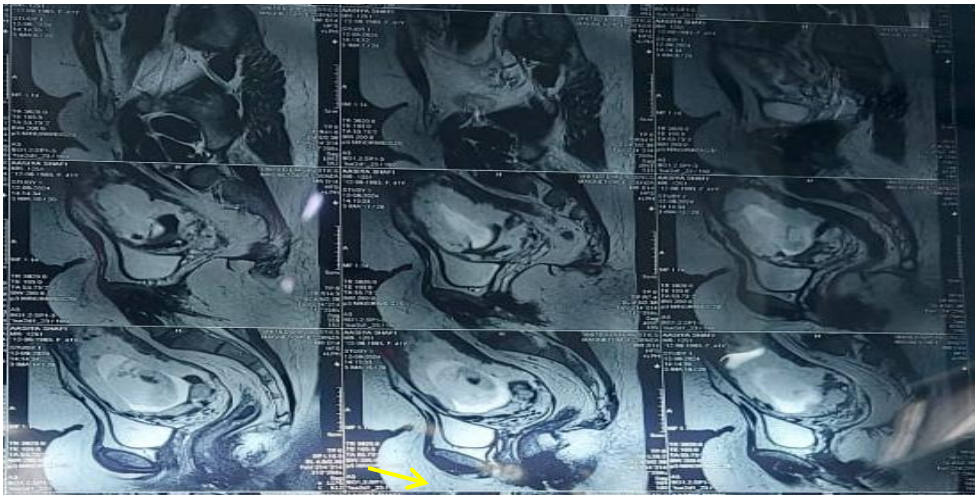
Serum Beta-HCG levels in study patients		
Serum βHCG	**No. of Patients**	**Percentage**
<10000	10	62.5
10001-20000	2	12.5
20001-30000	2	12.5
30001-40000	0	0
>/=40001	2	12.5
TOTAL	16	100







Bulge in lower uterine segment



Yellow Arrow: **G. Sac in lower uterine segment**
White Arrow: **Thinning of myometruim**

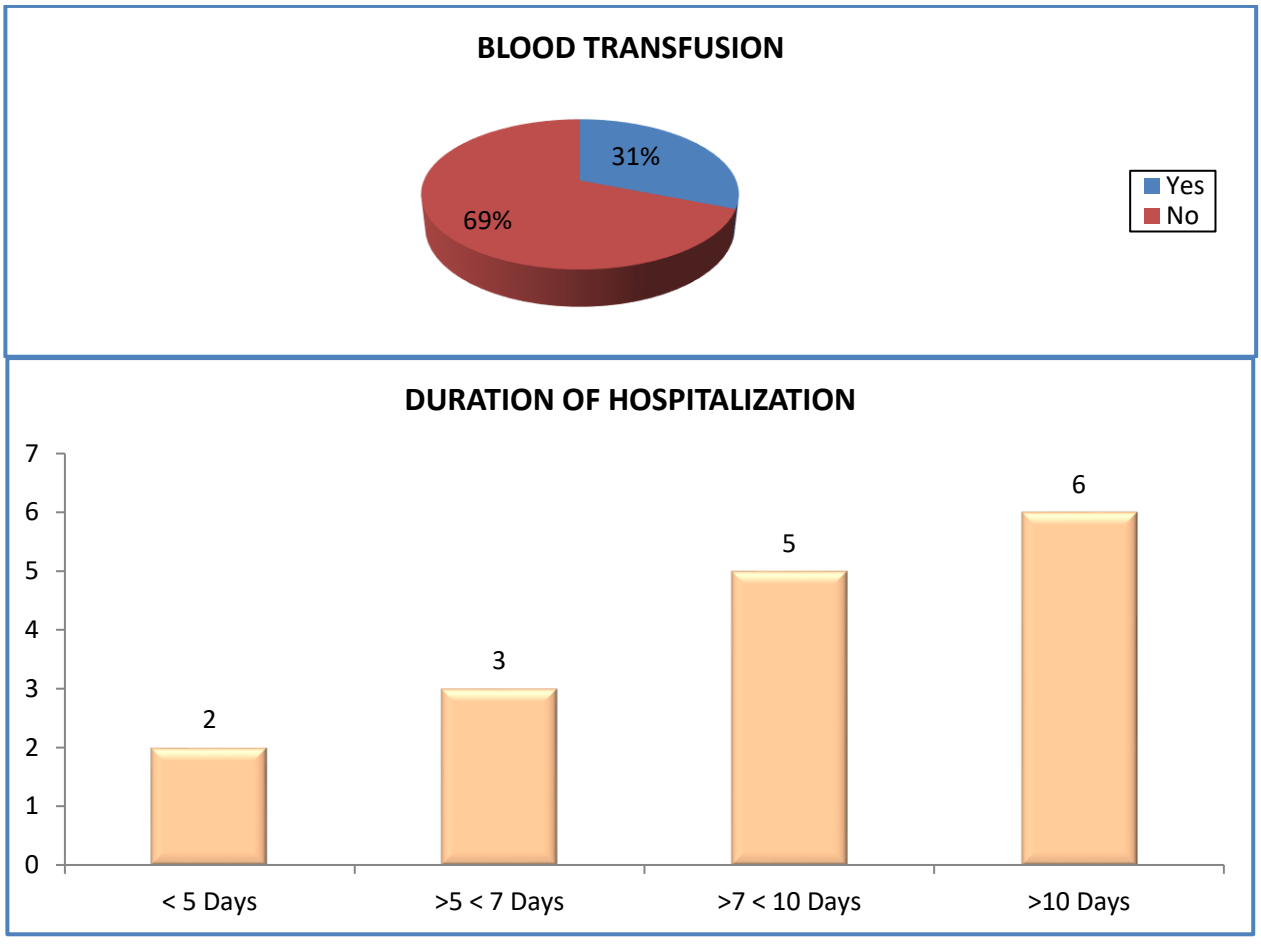


Table 2: Regression time of Serum Beta-HCG		
Regression time of serum βHCG	**No. of Patients**	**Percentage**
2 weeks	2	12.5
3 weeks	4	25
4 weeks	3	18.7
5 weeks	4	25
6 weeks	2	12.5
>6 weeks	1	6.3
Total	16	100

DISCUSSION

A total of 16 cases were taken in our study over a period of 3 years. With each passing year there was increasing rate of scar site pregnancy. This is due to exponential increase in number of caesarean sections, decreasing vaginal deliveries following a previous caesarean section, increased physician awareness, and use of improved imaging techniques. Maximum number of patients 8(50%) were in the age group of 25-30 years. 37% of patients were 3rd gravida. Majority of patients 9 (56.2%) had history of previous two LSCS followed by 31.2% had previous one LSCS and 12.5% of cases had previous 3 LSCS. These findings were in consistent with other studies where more than half of patients with caesarean scar pregnancy have undergone 2 or more caesarean deliveries[19]. Patients with scar site pregnancy presented to our OPD or casualty with bleeding per vagina in 37% of cases, pain abdomen and spotting per vagina in 13% of cases each, both pain abdomen and bleeding per vagina in 6% of cases. Significant proportion of cases (31%) were asymptomatic and were diagnosed on first-trimester ultrasound. The findings were consistent with other study[20]. Majority of patients (43.7%) had gestational age of 8-10 weeks followed by 37.5% had 6-8 weeks, 12.5% had >10 weeks and 6.25 % had <6weeks of gestation at the time of diagnosis. The findings were consistent with other study[21]. After explaining risks and consequences associated with continuation of pregnancy, none of our patient continued the pregnancy. This reduced the risk of placenta accrete spectrum, surgical intervention for severe haemorrhage or uterine rupture in the early 2nd trimester[22,23]. 62.5% of cases had Serum βHCG <10000. There is no standardized treatment protocol for treatment of scar site pregnancy. In our study we observed different treatment options for the same. While making a decision about the management the following must be considered: size of scar pregnancy, residual myometrial thickness, β-hCG level, wish to remain fertile and patient's hemodynamic state[24]. Laparotomy with scar excision and repair was done in 31.2% of cases followed by laproscopic scar excision and repair in 18.7%, Systemic MXT in 18.7%, USG guided dilation and evacuation in 12.5%, laparotomy and scar excision and IU tamponade, Suction and evacuation, Suction and evacuation + IU tamponade and Hysteroscopic removal in 6.25% of cases in each. One patient who was 41-year-old woman, G3P2L0 (2LSCS) with 12 weeks and 4 days of gestation received intragestational KCL. Her βHCG was 45891miU/ml her MRI showed G. sac with associated fetal node in lower half of uterus with associated marked thinning of ant myometrium (type IIb) measuring 1mm, near complete circumferential placenta covering os with associated prominent vascular channels- possibility of focal adherence needs to be considered. 1week later laparotomy f/b excision of scar pregnancy with uterine repair was done. 2 patients underwent hysterectomy. These patients were reffered from periphery and were misdiagnosed as early pregnancy failure and had received medical termination of pregnancy there. These patients were hemodynamically unstable and decision for hysterectomy was done. The study done by Timor-Tritsch and Monteagudo[25] showed majority of cases required combined surgical and a pharmacological approach. The least invasive procedure is hysteroscopy, which allows direct visualization of the vessels at the implantation site of the gestational sac[26,27]. This procedure has a short operative time with less blood loss and a higher success rate than laparoscopic or open surgery.[26] When the caesarean scar pregnancy is deeply implanted, laparoscopy is needed to exclude bladder involvement while still providing a balance between reducing patient morbidity and visualization needed to control intraoperative haemorrhage.[28] Supplemental measures to decrease the bleeding, such as local vasopressin injection or uterine artery ligation, can be applied[29], laparotomy is required when uterine rupture is clinically suspected and can be beneficial in preventing further caesarean scar implants by excising the old scar and creating a new uterine closure[30,31]. Maximum number of patients (43.7%) had type 2 scar site pregnancy. Blood transfusion was required in 31% of cases. Maximum number of patients (31.2%) had hospital stay of 5-7days. Regression time of serum βHCG was 5 and 3 weeks in 25% of cases in each, 4 weeks in 18.7%, 2 and 6 weeks in 12.5% of cases in each and >6 weeks in 6.3% of cases. Weekly monitoring until a β-hCG level of <5mIU/mL has been reached is generally recommended[32]. It requires 4–16 weeks for serum β-hCG to reach undetectable levels[33], but may take two months to a year to disappear completely[32].

CONCLUSION

The first problem is the diagnosis, which is really difficult for clinicians working in the primary care centers. The second and the main problem is the treatment. Efforts should be made to educate clinicians and radiologists to identify features of scar pregnancies and refer them selectively to tertiary centers. The natural history and optimal management of CSP are not well established, which limits the ability to provide informed and evidence based care. Further work is required to develop more effective management strategies for women who present later in pregnancy. The literature supports an interventional rather than medical approach but the safest and most efficient clinical approach to CSP in terms of treatment modality and service delivery is yet to be determined. Women are at risk for its recurrence, although normal pregnancy is also possible. Outcomes depend on timely diagnosis and multidisciplinary care by skilled clinicians.

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