



## A RETROSPECTIVE STUDY OF CAESAREAN SCAR ECTOPIC PREGNANCY IN A TERTIARY CARE CENTRE, IMPHAL.

### Obstetrics & Gynaecology

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### ABSTRACT

Caesarean scar pregnancy (CSP) has become a challenge for contemporary obstetrics, with a significant increase in percentage of pregnancies concluded with a caesarean section and with the development of TVS, the frequency of CSP diagnosis has increased as well. The study which has been undertaken was retrospective observational study. Data was collected from records of patients, who were admitted as CSP at the Department of Obstetrics and gynaecology in Regional institute of medical sciences, Imphal, Manipur for year 2020 to 2022. In our study incidence of CSP is 0.25% (10 per 4000 c section), which shows a tremendous increase of scar ectopic pregnancy in present years. 10 cases in 2 year span. All cases were diagnosed in first trimester. 3 cases noted at 9 weeks, 5 cases between 6 to 8 weeks, 2 cases at 10 weeks. Cardiac activity is present in 4 cases and in 6 cases cardiac activity of foetus is absent. Caesarean scar ectopic pregnancies have been associated with poor outcome leading to maternal morbidity and mortality if not diagnosed on time. All post cs cases should come for early check-up and early TVS Doppler should be done.

### KEYWORDS

#### BACKGROUND:

Caesarean scar pregnancy is a type of ectopic pregnancy where the fertilized egg is implanted with in the muscle or fibrous tissue of the scar after previous caesarean section.<sup>1</sup> The first case of a Caesarean scar ectopic pregnancy was reported in English medical literature in 1978.<sup>1</sup> Caesarean scar pregnancy can be detected between day 33 and 94 day of pregnancy.<sup>2</sup> Since then, there are only 19 cases published until 2001. Though it is a rare obstetric complication, there is reported incidence of 1:1800 – 1:2216 pregnancies.<sup>3</sup> The chance of Caesarean scar ectopic pregnancy in a women after c section is approximately 0.15%.<sup>4</sup> Diagnosis and treatment if caesarean scar ectopic pregnancy has become a challenge for contemporary obstetrics, with a significant increase in percentage of pregnancies concluded with a caesarean section and with the development of TVS, the frequency of Caesarean scar ectopic pregnancy diagnosis has increased as well.<sup>5</sup>

Two different types of scar ectopic pregnancies are identified. Type I is caused by implantation in the prior scar with progression towards the cervicoisthmic (in prior caesarean section) space or the uterine cavity. Type II is caused by deep implantation into scar defect with infiltrating growth into the uterine myometrium and to uterine serosal surface which may result into uterine rupture and massive haemorrhage in first trimester of pregnancy which is most dangerous.<sup>4</sup>

The diagnostic criteria described for diagnosing caesarean scar implantation on transvaginal ultrasound include:

1. Empty uterine cavity.<sup>5,6</sup>
2. Empty endocervical canal.<sup>7</sup>
3. Gestational sac or solid mass of trophoblast located anteriorly at the level of the internal os embedded at the site of the previous lower uterine segment caesarean section scar.<sup>8</sup>
4. Thin or absent layer of myometrium between the gestational sac and the bladder.<sup>7,9</sup>
5. Evidence of prominent trophoblastic/placental circulation on Doppler examination.<sup>10</sup>
6. There is absent myometrium between the Gsac and the bladder. (Majority of cases have a myometrium of thickness <5mm) sliding organ sign.<sup>11</sup>

#### Aim of study:

The main aim of this study is to know the management and outcome of patients with Caesarean scar ectopic pregnancy. The management of Caesarean scar ectopic pregnancy varies from individual to individual

based on there age, parity, number of previous caesarean.

#### MATERIALS AND METHODS

The study which has been undertaken was a retrospective observational study. Data was collected from records of patients, who were admitted as Caesarean scar ectopic pregnancy at the Department of Obstetrics and gynaecology in Regional Institute of Medical Sciences, Imphal, Manipur from August 2020 to October 2022.

We have performed transvaginal ultrasound in all cases and in case of suspicion MRI is further done to rule out the scar ectopic.

**Table 1: Caesarean Scar Ectopic Patients Characteristics And There Outcome.**

| Sl.no | Gravida     | age | Num<br>ber<br>of<br>cs | Last<br>cs<br>durat<br>ion | Perio<br>d of<br>gestat<br>ion | Cardi<br>ac<br>activi<br>ty | Base<br>line<br>beta<br>hcg | manag<br>ement                                            | Follo<br>w up        |
|-------|-------------|-----|------------------------|----------------------------|--------------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------|----------------------|
| 1     | G4P2<br>013 | 42  | 2                      | 3                          | 9wks                           | Prese<br>nt                 | 1400<br>00                  | Total<br>abdom<br>inal<br>hystere<br>ctomy<br>with<br>RSO | No<br>compl<br>aints |
| 2     | G4p2<br>012 | 30  | 2                      | 2                          | 9wks                           | Prese<br>nt                 | 1240<br>00                  | TAH                                                       | No<br>compl<br>aints |
| 3     | G3P2<br>002 | 40  | 2                      | 7                          | 7wks                           | absen<br>t                  | 1100                        | misop<br>rostol                                           | No<br>compl<br>aint  |
| 4     | G6p3<br>023 | 30  | 1<br>1vbac             | 9                          | 8wks                           | absen<br>t                  | 1509                        | MTX                                                       | No<br>compl<br>aints |
| 5     | G3P2<br>002 | 37  | 2                      | 1                          | 10<br>wks                      | prese<br>nt                 | 1100<br>0                   | Excisi<br>on of<br>scar<br>pregna<br>ncy<br>and<br>repair | No<br>compl<br>aints |

|    |         |        |   |   |       |         |        |                             |               |
|----|---------|--------|---|---|-------|---------|--------|-----------------------------|---------------|
| 6  | G3P1011 | 36     | 1 | 7 | 9 wks | absent  | 139100 | MTX f/b suction evacuation  | No complaints |
| 7  | G3p2001 | 35 yrs | 2 | 2 | 6     | absent  | 6000   | MTX                         | No complaints |
| 8  | G3p2002 | 42 yrs | 2 | 3 | 9     | present | 5000   | Intrac kcl f/b TAH with BSO | No complaints |
| 9  | G5p2022 | 38     | 1 | 2 | 7     | absent  | 3100   | S&E f/b hysterectomy        | No complaints |
| 10 | G3P2002 | 36     | 2 | 4 | 8     | absent  | 3200   | S&E f/b hysterectomy        | No complaints |

**Table 2: Incidence Of CSP In Tertiary Care Centre**

| Year         | No. of total pregnancies seen at our hospital per year | No. of live births per year | No of c section per year | No. of caesarean scar ectopic per year |
|--------------|--------------------------------------------------------|-----------------------------|--------------------------|----------------------------------------|
| 2020 to 2021 | 8230                                                   | 6271                        | 2768                     | 4                                      |
| 2021 to 2022 | 8122                                                   | 7933                        | 3361                     | 6                                      |
| Total        | 16352                                                  | 14204                       | 6129                     | 10                                     |

**Table 3: Symptoms Of Caesarean Scar Ectopic Pregnancies**

| Symptoms                  | frequency | %   |
|---------------------------|-----------|-----|
| Asymptomatic              | 4         | 40  |
| Painless vaginal bleeding | 5         | 50  |
| Abdominal pain            | 1         | 10  |
| total                     | 10        | 100 |

**Table 4: Indication Of Previous Caesarean**

| Indication | Frequency | %   |
|------------|-----------|-----|
| Breech     | 2         | 20  |
| Post CS    | 6         | 60  |
| CPD        | 2         | 20  |
| total      | 10        | 100 |

**Table 5: Period Of Gestation They Have Presented.**

| Gestational age (weeks) | Frequency | %   |
|-------------------------|-----------|-----|
| 6                       | 1         | 10  |
| 7                       | 2         | 20  |
| 8                       | 2         | 20  |
| 9                       | 3         | 30  |
| 10                      | 2         | 20  |
| Total                   | 10        | 100 |

**Table 6: No Of Previous Caesarean**

| No of previous CS | frequency | %   |
|-------------------|-----------|-----|
| 1                 | 3         | 30  |
| 2                 | 7         | 70  |
| Total             | 10        | 100 |

**RESULTS:**

In our study incidence of Caesarean scar ectopic pregnancy is 0.25% (10 per 4000 c section), which shows a tremendous increase of scar ectopic pregnancy in recent years. Of these 10 cases 7 were above 35 years age group and 3 above 40 years. 40% of people presented without any symptoms, it's just an early trimester finding in TVS. 50% presented as painless vaginal bleeding, 10% with pain abdomen. About 6 out of 10 of cases had previous 2 caesarean section. All cases were diagnosed in first trimester. 3 cases noted at 9 weeks, 5 cases between 6 to 8 weeks, 2 cases at 10 weeks. Cardiac activity is present in 4 cases and in 6 cases cardiac activity of foetus is absent. 5 out of 10 cases landed up in hysterectomy, 3 cases were treated with methotrexate, 1 cases was excision and repair and 1 case was treated with misoprostol in 2 cases initially they suction and evacuation tried but resulted in profuse bleeding, so hysterectomy was done. Intrac KCL was given in one patients but after half-hour of injection she

started having profuse bleeding and landed in hysterectomy. All patients came for follow up in opd and has no complaints and uneventful.

**DISCUSSION:**

Our study has 10 cases of caesarean scar ectopic pregnancy in a period of 2 years, frequency is 0.25% per c section rate and incidence is 1:1353-1: 2057 per pregnancies. According to retrospective study conducted by Deans R, Abbott J<sup>7</sup> they had 6 cases of Caesarean scar ectopic pregnancy in study period of 4 years. Michener C, Dickinson JE<sup>10</sup> study of 5 years has 13 cases of Caesarean scar ectopic pregnancy. Seow KM et al<sup>2</sup> the incidence is 1:1800 – 1:2216, so when compared to this study the incidence has been increased in our hospital. The maternal age range is between 35 to 45 yrs<sup>9,10</sup>. This shows that compared to earlier periods the trend of Caesarean scar ectopic pregnancy has increased in recent times, it might be due to increased c section rate and more sophisticated diagnostic modalities leading to early detection.

In the study conducted by Rotas MA et al<sup>12</sup> the mean gestational age was 7.5 ± 2.5 weeks at time of diagnosis, in my study also the average gestational age is between 6 to 8 weeks. In this study half of the patients had no symptoms, only few had painless vaginal bleeding, in study of Deans R, Abbott J<sup>10</sup> most of patients are asymptomatic. As most patients don't have grave symptoms diagnosis of Caesarean scar ectopic pregnancy is delayed and many of them may present late, diagnosis is delayed TVS not done in 1<sup>st</sup> trimester.<sup>13</sup> Risk factors associated for Caesarean scar ectopic pregnancy for patients in my study could be short interpregnancy interval, more number of prior c sections, increased maternal age.<sup>13</sup> Therefore the patients with these high risk factors should be advised a proper TVS and doppler in 1<sup>st</sup> trimester to rule out Caesarean scar ectopic pregnancy and we should be more vigilant. Delay in diagnosis or error in diagnosis will increase the maternal morbidity and mortality<sup>14</sup>. As per my study there is no role of conservative management, all patients where managed either medically or surgically. Half of the patients required surgical intervention. Hysterotomy and wedge resection should be considered for women who do not respond to medical, or when the patient is hemodynamically unstable and uterine rupture is suspected or diagnosed<sup>13,14</sup>. In our study hysterectomy was done to patients where haemodynamically unstable, medical management failed. suction and evacuation was tried in 2 patients it has led to profuse bleeding and landed up in hysterectomy. In Ash A et al<sup>3</sup> study showed suction and evacuation has high failure rate. There is no maternal mortality in our study.

**CONCLUSION:**

Caesarean scar ectopic pregnancies has been associated with poor outcome leading to maternal morbidity and mortality if not diagnosed on time. It is a challenge to obstetrician to diagnose and manage the caesarean scar ectopic pregnancy. As our hospital is a tertiary referral centre, patients are referred in an haemodynamically unstable condition and hysterectomy was the final life saving procedure. Trying any MTP in scared uterus in periphery hospital without diagnosing Caesarean scar ectopic pregnancy leads to catastrophe. Therefore early weeks TVS, diagnosis and management before doing any MTP in post CS pregnancy and all post CS pregnant women should start early antenatal check-up as incidence of Caesarean scar ectopic pregnancy is increasing. Further larger study is needed to know detailed pathogenesis and underlying cause and factors involved (like type of suture material used, single layer and double layer suturing, method of suturing).

**REFERENCES**

- Fylstra DL. Ectopic pregnancy within a cesarean scar: a review. *ObstetGynecolSurv*2002;57:537-43.
- Seow KM, Huang LW, Lin YH, Lin MY, Tsai YL, Hwang JL. Cesarean scar pregnancy: Issues in management. *Ultrasound ObstetGynecol* 2004; 23: 247-253.
- Ash A, Smith A, Maxwell D. Caesarean scar pregnancy. *Br J ObstetGynaecol* 2007; 114: 253-263
- Patel MA. Scar Ectopic Pregnancy. *J ObstetGynaecol India*. 2015 Dec;65(6):372-5.
- Le A, Shan L, Xiao T, Zhuo R, Xiong H, Wang Z. Transvaginal surgical treatment of caesarean scar ectopic pregnancy. *Archives of gynecology and obstetrics*. 2013 Apr;287(4):791-6.
- Godin P-A, Bassil S, Donnez J. An ectopic pregnancy developing in a previous caesarean section scar. *FertilSteril*1997;67:398-400.
- Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Caesarean section scar. *Ultrasound ObstetGynecol*2003;21:220-7.
- Timor-Tritsch IE, Monteagudo A, Santos R, Tsybal T, Pineda G, Arslan AA. The diagnosis, treatment, and follow-up of cesarean scar pregnancy. *Am J ObstetGynecol*2012;207:44.e1-13.
- Seow KM, Hwang JL, Tsai YL. Ultrasound diagnosis of a pregnancy in a Cesarean

- section scar. *Ultrasound ObstetGynecol*2001;18:547–9.
- 10 Deans R, Abbott J. Hysteroscopic management of cesarean scar ectopic pregnancy. *Fertility and sterility*. 2010 Apr 1;93(6):1735-40.
- 11 Morente LS, León AIG, Reina MPE, Herrero JRA, Mesa EG, López JSJ. Cesarean Scar Ectopic Pregnancy-Case Series: Treatment Decision Algorithm and Success with Medical Treatment. *Medicina (Kaunas)*. 2021 Apr 8;57(4):362. doi: 10.3390/medicina57040362. PMID: 33917836; PMCID: PMC8068280.
- 12 Michener C, Dickinson JE. Cesarean scar ectopic pregnancy: a single centre case series. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2009 Oct;49(5):451-5.
- 13 Rotas MA, Haberman S, Levгур M. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management. *Obstetrics & Gynecology*. 2006 Jun 1;107(6):1373-81.
- 14 Vial Y, Petignat P, Hohlfield P. Pregnancy in a cesarean scar. *Ultrasound ObstetGynecol* 2000; 16: 592–593.