CASE REPORT

CAESAREAN SCAR ECTOPIC PREGNANCY: A CASE SERIES

Dania Junaid[1], Shama Chaudhry[2], Marium Usman[3], Rubina Hussain[4]
[1,2,3,4]Department of Obstetrics and Gynecology, Ziauddin University Hospital Karachi.

ABSTRACT

Rates of cesarean section (CS) are increasing globally; hence pregnancies with previous CS are also increasing at an alarming rate. This leads to increased complications in pregnancy such as morbidly adherent placentae, ruptured uterus and the rare complication of ectopic scar pregnancy. The aim of this case series is to highlight this serious complication and provide awareness to obstetricians. Early diagnosis and early treatment of cesarean scar ectopic pregnancies is essential to prevent maternal morbidity and mortality. Sonographic expertise is required to get the best results. Hemodynamically stable patients have many treatment options.

KEYWORDS: cesarean scar pregnancy, Ectopic pregnancy, uterine rupture

Corresponding Author
Dania Junaid
MBBS; MS Trainee
Department of Obstetrics and Gynaecology,
Ziauddin University Hospital,
Karachi, Pakistan.
E-mail: dania_143@hotmail.com

INTRODUCTION

Caesarean scar pregnancy is an ectopic pregnancy implanted in the myometrium at the site of a previous caesarean section scar. It is the rarest type of ectopic pregnancy and may lead to severe complications. Uterine scar rupture is considered the most catastrophic complication, often leading to maternal morbidity and mortality. [1, 2]

The incidence of this type of ectopic pregnancy varies from 1:1800 to 2216 pregnancies with the rate of 0.15% in women with the previous section and 6.1% of all ectopic pregnancies. [3]

The possible mechanism for scar pregnancy is implantation occurring within the defects in the scar, forming a micro-tubular track due to poor healing of the previous trauma from caesarean section, dilatation and curettage, hysterectomy, myomectomy, abnormal placentation or manual removal of placenta. [4]

The most frequently seen symptom is painless vaginal bleeding. Generally, it does not have specific symptoms and therefore can be easily misdiagnosed leading to life-threatening hemorrhage during pregnancy or curettage, uterine rupture and DIC. Occasionally, undiagnosed scar ectopic pregnancy can present with heavy bleeding, hemoperitoneum, and shock after termination of early pregnancy or missed abortion.[6]

Diagnosis depends on symptoms, clinical manifestations, history of a previous scar, serum beta HCG level, and transvaginal ultrasound. Conservative medical managements are systemic methotrexate, local embryocides or a combination of both. Surgical management like hysteroscopy, laparoscopy, laparotomy and uterine artery embolization can be offered to hemodynamically unstable patients and those who do not respond to medical therapy.

CASE 1

A 30-year old patient (gravida 6, para 3+3), presented to the Out Patient Department(OPD) of Ziauddin University Hospital on 21/07/2017 with the complaint of heavy per vaginal bleeding after a manual vacuum aspiration(MVA) done on 28/06/2017.

She was healthy, did not take any medications and had no known allergies. She had no history of DM,

HTN, and TB. She had a history of 3 caesarian sections (CS) and 3 miscarriages (with two previous dilatation and curettage procedures) and a history of blood transfusion.

Her last menstrual period was on 02/04/2017 and she had conceived spontaneously despite using contraceptive pills. She confirmed her pregnancy by urine dipstick test in the 1st trimester. She did not book herself and wanted to terminate her pregnancy due to which she did not undergo any antenatal care or investigations. On 28/6/2017 she went to a clinic in Hyderabad to terminate her pregnancy where she was given some medication sublingually and an MVA was performed. She was prescribed tranexamic acid capsules, which caused the bleeding to stop temporarily. Since then she has had on and off episodes of bleeding in varying quantities.

One day before the patient presented to our OPD, she had excessive bleeding with clots. She was using five pads a day. She was also experiencing generalized weakness, dizziness, and lower abdominal pain. On per vaginal examination, os was closed and the cervix appeared short and soft. The fundal height was 12 weeks, all other findings were unremarkable.

At the time of admission, her hemoglobin was 10.1, PCV was 31, total leukocyte count and coagulation profile were normal. Pelvic ultrasound was done and findings raised suspicion for molar pregnancy or scar hematoma as a complication of MVA.

The beta HCG result was 122 and MRI was done for further investigation. A heterogeneous area was noted in the anterior uterine wall at mid portion with hyper-intensity on T2 and iso-intensity on T1 weighted images raising suspicion for endometrial pathology and reflecting the need for histopathological confirmation. The family was counseled about the findings and advised for conservative treatment with hysterectomy as a last resort. The final advice was total abdominal hysterectomy along with bilateral salpingectomy with conservation of ovaries.

Preoperative investigations showed hemoglobin 8.1, PCV 25, Platelets 266000 and TLC 9.2. Coagulation profile, LFTs and urine detail report(UDR) were normal.

During surgery Pfannenstiel incision was used to open the abdomen and fibrosis was seen with no hemoperitoneum. The uterus was soft, bulky and mobile with a bulge at the previous scar site (6.5cm, lower uterine segment) raising the suspicion for ectopic pregnancy. The scar was covered by the bladder with adhesions of omentum. Both fallopian tubes and ovaries appeared to be normal.

During the procedure the adhesions were separated and TAH with bilateral salpingectomy was performed while conserving the ovaries. Varicose vessels were present on the posterior aspect of the bladder. A drain was left in the peritoneal cavity and estimated blood loss was 400ml. The removed specimen was sent for histopathology.

CASE 2

A 40-year old pregnant woman, un-booked (gravida 3, para 2+0), previous two CS, referred from Trauma care center on 14/12/2017 with gestational amenorrhea of 9 weeks. Her last menstrual period was on 06/10/17 and her expected date of delivery was 13/07/2018. Her beta HCG was done and it was 1,89,962 mIU/ml. Ultrasound confirmed a scar pregnancy. Her family was counseled regarding the condition of the patient and mode of treatment.

Routine investigations showed Hb of 11.8, total leukocyte count of 8.6 and platelet count of 247. Viral markers were nonreactive. Blood group was O negative. Urea creatinine and electrolytes were normal. On the basis of ultrasound report, scar pregnancy was diagnosed.

Medical and surgical treatment was explained in detail to the patient's family including the possibility of intensive care monitoring. Attendants opted for medical management. Injection Methotrexate was given under ultrasound guidance to the amniotic sac. The procedure was well tolerated by the patient. Beta HCG was sent which showed a declining pattern. 3 doses of Injection Methotrexate were given intramuscularly along with 3 doses of Injection Folinic acid on alternate days, following which an Ultrasound was performed which showed a missed abortion of 9 weeks. Symptomatic treatment was given during hospital course. She was discharged on oral antibiotics and painkillers. She was advised a follow up visit after 5 days with repeat beta HCG levels and PT, INR.

The patient presented to the clinic for a follow-up visit with a beta HCG report which showed a declining pattern (from 1,89,962 mIU/ml to 10,732 mIU/ml). Beta HCG one week later was 3190 mIU/ml. A follow-up scan was done on 30th January 2018 which showed a well-defined hypo echoic gestational sac corresponding to 9 weeks + 2 days.

The fetus appeared macerated and fetal parts were not recognized separately. CRL measured 22.7 mm and corresponded to 9 weeks + 2 days.

On 14th February another follow-up scan was done which showed a well-defined sac with an embryo of gestational age of 9 weeks + 1 day seen with no cardiac flicker and fetal movements. An organized

collection/hematoma was noted anterior to gestational sac which represented a peri-sac bleed. Disorganized myometrium was noted with multiple cystic spaces. On Doppler, excessive vascularity was visualized. Hence hysterectomy was performed. Intra-operatively, massive bleeding was noted and 2 PCVs were transfused. The patient was discharged 3 days later on oral antibiotics and analgesics.

CASE 3

A 27-year old pregnant female (gravida 3, para 2+0), with history of previous two cesarean sections with gestational amenorrhea of 17 weeks was admitted with complaints of lower abdominal pain and amniotic fluid leaking.

According to the patient, she was in her usual state of health 2 days ago when she developed lower abdominal pain which was cramping in nature and sudden in onset. She suddenly started leaking. Liquor was clear, and had no specific odor or blood.

An ultrasound scan was done which showed scar pregnancy of 16 weeks ±1 day of gestational age. Routine labs were done showing Hb of 7.7, platelets count of 145 and total leukocyte count of 13. Urea was 08 and creatinine was 0.36. Electrolytes were normal. Her blood group was B positive. Liver function test were performed which showed total bilirubin of 0.85, direct bilirubin of 0.34, SGPT was 18, alkaline phosphatase was 59. Viral markers were non-reactive. C-reactive protein was raised.

The patient underwent (examination under anesthesia) and MVA. This procedure was performed under general anesthesia. During the procedure, the patient bled profusely. Uterine packing and uterotonic agents were given but bleeding could not be controlled. Decision for hysterectomy was made after husband's consent. A difficult hysterectomy was performed due to frozen pelvis and fragile tissues. Intraoperatively, 2 units of fresh frozen plasma and 1 unit of PCV were transfused. IV antibiotics were given prophylactically. Patient remained well post-operatively and was discharged on oral antibiotics and painkillers.

DISCUSSION

Many theories have evolved to explain the mechanism of caesarean scar pregnancy. The most accepted and clear theory seems to be that the blastocyst invades the myometrium through a microscopic dehiscent passage due to trauma from a previous caesarean section or any other uterine surgery. [7]
Two different types of scar ectopic pregnancies are identified. In type I, implantation of the prior scar with progression towards the cervico-isthmic (in prior caesarean section) space or the uterine cavity. Life-threatening hemorrhage can occur if this type of ectopic scar pregnancy reaches full term. A patient can give birth to a viable fetus but the outcome can be catastrophic due to massive bleeding. While in type II, the growth is deeper into the uterine myometrium and serosal surface which may lead to uterine rupture and massive hemorrhage in the first trimester of pregnancy. [5]

The risk of rupture of uterine scar pregnancy increases to four fold if single layer closure was done during cesarean section. [8]

The diagnosis is based on ultrasound findings. Proposed ultrasound criteria for the diagnosis of intramural pregnancy are 1) gestational sac located between the bladder wall and the anterior isthmic portion of the uterus, 2) no trophoblastic tissue visible in the uterine cavity and cervical canal, 3) clearly visible circular blood flow surrounding the sac. [5] MRI is also helpful in confirming the diagnosis.

13% cases of scar pregnancy are either misdiagnosed or go unreported which leads to further complications. [9] There are two principal management options available, medical or surgical. Medical therapy usually consists of methotrexate administered either systematically, locally or combined. Concomitant fine needle aspiration of fluid present in the sac is often done. Rarely, rupture of scar and hemorrhage can occur as a complication of medical treatment. [10]

The surgical approach includes elective laparotomy and gestational mass excision when fertility needs to be conserved. [11] Elective surgery with uterine artery embolization may be combined to preserve fertility and decrease morbidity. [12] Treatment regime should be discussed with each patient taking into account the viability of pregnancy, gestational age, and fertility for future pregnancies. [11] Postoperative adhesions and fertility may result from wedge resection. [11]

It has been observed that more than 9 weeks are required for serum beta HCG levels to fall completely and 3 months of ultrasound follow up for complete disappearance of the gestational sac.

Caesarean scar pregnancy is the rarest form of pregnancy and can result in serious complications. Therefore, obstetricians should have a heightened awareness of this serious and potentially fatal complication. Early diagnosis and prompt treatment of caesarean scar ectopic pregnancy is essential to prevent maternal morbidity and mortality. Hemody-

namically stable patients have more treatment options including conservative management. The treatment regimen should be decided keeping under consideration size of the implanted fetus, hemodynamic status of the patient, presence of scar rupture, beta HCG levels and desire for future fertility.

REFERENCES

1. Benbrahim Z, Arifi S, Daoudi K, Serraj M, Amara B, Benjelloun M et al. Askin'stumor: a case report and literature review. World Journal of Surgical Oncology. 2013;11(1):10.3. Winer-Muram H, Kauffman W, Gronemeyer S, Jennings S. Primitive neuroectodermaltumors of the chest wall (Askin tumors): CT and MR findings. American Journal of Roentgenology. 1993;161(2):265-268.
2. Singh A, Abhinay A, Kumar A, Prasad R, Ghosh A, Mishra O. Askin tumor: A rare neoplasm of thoracopulmonary region. Lung India. 2016;33(2):196.
3. Peripheral Primitive NeuroectodermalTumor of the Chest Wall in Childhood: Clinico-Pathological Significance, Management and Literature Review [Internet]. 2009 [cited 20 February 2018]. Available from: http://memo.cgu.edu.tw/cgmj/3402/340211.pdf
4. Winer-Muram H, Kauffman W, Gronemeyer S, Jennings S. Primitive neuroectodermaltumors of the chest wall (Askin tumors): CT and MR findings. American Journal of Roentgenology. 1993;161(2):265-268.
5. Askin F, Rosai J, Sibley R, Dehner L, McAlister W. Malignant small cell tumor of the thoracopulmonary region in childhood.A distinctive clinicopathologic entity of uncertain histogenesis. Cancer. 1979;43(6):2438-2451.
6. Dou X, Yan H, Wang R. Treatment of an Askin tumor: A case report and review of the literature. Oncology Letters. 2013;6(4):985-989.
7. Shamberger R, Grier H, Weinstein H, Perez-Atayde A, Tarbell N. Chest wall tumors in infancy and childhood. Cancer. 1989;63(4):774-785.
8. Contesso G, Llombart-Bosch A, Terrier P, Peydro-Olaya A, Henry-Amar M, Oberlin O et al. Does malignant small round cell tumor of the thoracopulmonary region (askintumor) constitute a clinicopathologicentity?. An analysis of 30 cases with immunohistochemical and electron-microscopic support treated at the institute gustaveroussy. Cancer. 1992;69(4):1012-1020.
9. ZHANG K, LU R, ZHANG P, SHEN S, LI X. Askin'stumor: 11 cases and a review of the literature. Oncology Letters. 2015;11(1):253-256.
10. Askin tumor: four case reports and a review of the literature. Cancer Imaging [Internet]. 2011 [cited 17 February 2018];11(1):184-188. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3266582/#B5
11. Marina N, Etcubanas E, Parham D, Bowman L, Green A. Peripheral primitive neuroectodermaltumor (peripheral neuroepithelioma) in children. A review of the St. Jude experience and controversies