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Case Series

Laparoscopic resection and repair of caesarean scar pregnancy

Mostafa A. Elsayed¹, Shereen Barakat Elbohoty^{2*}

¹Department of Obstetrics and Gynecology, Benha University, Egypt

²Department of Obstetrics and Gynecology Tanta University, Egypt

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***Correspondence:**

Dr. Shereen Barakat Elbohoty,

E-mail: sherin_barakat@yahoo.com

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ABSTRACT

The presented work is case series over 2 years of caesarean scar pregnancy over 2 years from January 2020 to January 2022 in Zinat Alhayat hospital of maternity in Benha city Egypt. Cases recruited from those attending Zeinat Alhayat maternity hospital in Benha and all case proved to have caesarean scar pregnancy by ultrasonography and quantitative HCG the total number of cases were 15 over a period of two years, most of patients complained about abnormal uterine bleeding in the first trimester with abnormal abdominal pain, all cases prepared for laparoscopy in Zinat Alyayat hospital in Benha and a written consent taken then with general anesthesia pelvis and abdomen explored by laparoscopy and the site of the scar opened with a hook with the aid of a traumatic grasper and then sac evacuated and the old scar resected by laparoscopic scissor. Regarding epidemiological data of patients there were no statistically significant difference in age body weight age or the amount of pain by facial analogue scale of pain. All patients saved and laparoscopy done with an average time of 45 min with no operative or postoperative complications, only one of the cases with severe bleeding required blood transfusion of 2 units of blood because HB was 7.8 g/dl, so laparoscopic treatment of caesarean scar pregnancies is a good option for patients with short operative time and good outcomes without complications.

Keywords: Ectopic pregnancy, Caesarean scar pregnancy, Laparoscopic repair

INTRODUCTION

Caesarean sections are daily practice for obstetricians; there is a worldwide increase in caesarean section rates with non- indicated operations according to patient's requests.^{1,2} Closure of the scar is an art with meticulous handling minimal irritation, non-locking sutures, precise and adequate closure with minimal tension on sutures.

Locking increase ischemia and promote scar atrophy with subsequent dehiscence and implantation of the embryo with lower placental locations to close the defect with subsequent placenta praevia and morbidly adherent placenta aka accrete.³⁻⁶ Decidual inclusion in the uterine suturing during caesarean section retard healing process. Scar defect or ithmocele can lead to placenta praevia,

placenta accreta, rupture uterus and caesarean scar pregnancy with high morbidity.⁷

Caesarean scar pregnancies can be divided into two main types, type one endophytic type the pregnancy grows from the defect through the uterine cavity with subsequent low placenta and morbidly adherent placenta accreta.⁸ Type two or exophytic caesarean scar pregnancy grows from the uterine wall into the uterine serosa with subsequent rupture.⁹ Efforts made to manage such situations for type one curettage or hysteroscopic evacuation may be helpful but for type two laparoscopic approaches is ideal one.¹⁰ Laparoscopic repair is good in obtaining panoramic view and it helps in excision of the old caesarean scar so it prevents recurrence and retains the integrity and restores anatomy at the scar site.¹¹

CASE SERIES

15 cases of caesarean scar pregnancy from January 2020 to January 2022 were operated upon in Zinat al-Hayat hospital for obstetric care Benha city Egypt through laparoscopic resection and repair

History and examination

History of the current pregnancy

Last normal menstrual period. Abdominal pain and its degree by a marking on card of facial analogue scale of pain with numbers from zero to 10 where 10 is the highest agonizing pain score number. Episodes of bleeding number and average amount. Any predisposing factor for bleeding like physical activity trauma or sexual intercourse PR mental and emotional stress. History of the previous caesarean section operative time operative and postoperative complication. Neonatal condition and any need for blood transfusion

Examination

General examination including vital signs pulse blood pressure respiratory rate and also patient's weight height and body mass index. Abdominal examination done to feel tenderness rigidity or shifting dullness.

Local exam

Ultrasound evaluation

Vaginal examination done to cases with sonoscape 25 complete exploration of the uterus sac adnexa ovaries Douglas pouch and hepato-renal pouch both kidneys.

Investigations

Complete blood count, Random blood sugar, HBA1C, TSH, T3, T4, vitamin D3 level was done. Serum calcium, antinuclear antibody, Rh and blood group, quantitative human chorionic gonadotropin HCG, Hepatitis B and C virus antigen and antibody level.

Case scenario in one of the operated patients

Pharmacist patient 31 years average weight short stature with previous 2 caesarean sections and two living female children the age of the youngest was 2 years presented to my clinic with positive pregnancy urine test for antenatal care and examination. With missed dates about one week (5 week) abdominal scan done with empty uterus and with no adnexal mass. Patient given the usual antenatal care drugs in the form of folic acid 0.5 mg daily general conditions were normal and complete investigations requested (CBC, fasting blood sugar, TSH T3, T4, S.creatinine, sGOT, sGPT, vitamin D3 level). Patient skipped consultation time scheduled after 2 weeks.

Then a night phone call after 4 weeks from her to me informing me that she had an abdominal pain, I prescribed an antispasmodic until she came

Abdominal ultrasound revealed no uterine sac.

With vaginal ultrasound empty uterus with no adnexal lesion, normal ovaries with one ovary containing corpus luteum, with mid-sagittal scan of the uterine cervix and isthmus region of the uterus a localized mass with diameter of 5 cm by 5 cm noticed.

Then patient was asked to for quantitative HCG and external ultrasound done in Ahmed Farid center of radiology in Benha and here the pictures scanned at the center.

Result of quantitative HCG was 2240 mIU/ml, and the radiological center reported the pregnancy to be ectopic and the center informed patient that it was in the tube but my vision was a scar pregnancy, Then patient scheduled for operative laparoscopic termination the next day after night fast, during this time vital signs of the patient was normal only a severe pain was the complaint.

The intervention (operative steps)

Optical port site at 2 fingerbreadths above the umbilicus because the patient had 2 previous caesarean sections. Peritoneum inflated with carbon dioxide and telescopic initial sweep inside the abdomen done to explore uterus, Douglas pouch, ovaries and tubes on both sides then upper abdominal exploration done. Isthmic mass noted bulging through the peritoneal reflection over the lower uterine segment. Ovaries tubes uterosacral ligaments were free and no abdominal collection in Douglas pouch. The bladder flap dissected to expose the lower uterine segment with the use of a-traumatic grasper and ligasure, after complete dissection of peritoneum overlapping the mass, the mass incised with a hook by diathermy. Then complete evacuation of products of conception done with cutting by ligasure and complete excision done by scissor, after securing all bleeding points.

The edges of the old scar trimmed and repair done by vicryl sutures through the use of laparoscopic needle holder and grasper. After complete suturing of the scar defect irrigation and suction done to be sure that there were no bleeding points. The whole pelvis explored at the end of operation. 40 minutes was the operative time. There were no intraoperative or postoperative complications. Regarding epidemiological data of patients there were no statistically significant difference in age body weight age or the amount of pain by facial analogue scale of pain. All patients saved and laparoscopy done with an average time of 45 min with no operative or postoperative complications. Only one of the cases with severe bleeding required blood transfusion of 2 units of blood because HB was 7.8 g/dl.

Table 1: Results.

Case no.	Age (years)	BMI	Gestational age	Pain scores	Bleeding	Operative time	Operative complications	Post-operative complications
1	23	20	8	6	Mild	40	No	No
2	33	19	10	7	Mild	45	No	No
3	24	22	11	9	Moderate	50	No	No
4	28	25	9	7	Mild	34	No	No
5	29	27	9	4	Mild	44	No	No
6	31	30	12	9	Severe	64	No	No
7	33	22	11	6	Moderate	50	No	No
8	26, 28	30	10	6	No	60	No	No
9	30	19	9	5	No	45	No	No
10	31	23	8	6	Mild	49	No	No
11	25	20	10	7	Mild	55	No	No
12	28	19	12	8	Moderate	58	No	No
13	28	32	12	9	Moderate	62	No	No
14	29	30	11	7	Mild	60	No	No
15	24	24	12	7	Moderate	55	No	No

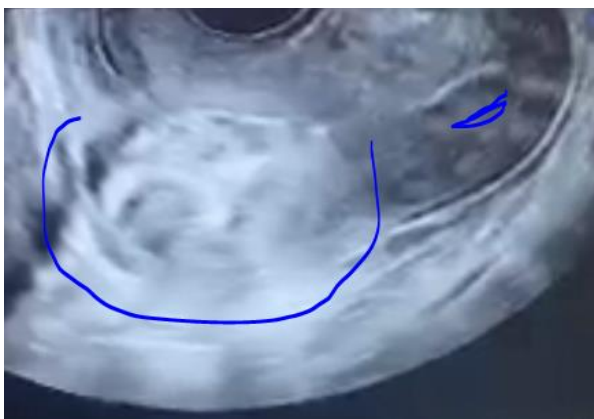


Figure 1: Ultrasound evaluation first at the clinic with sac in the lower segment at the site of the scar.

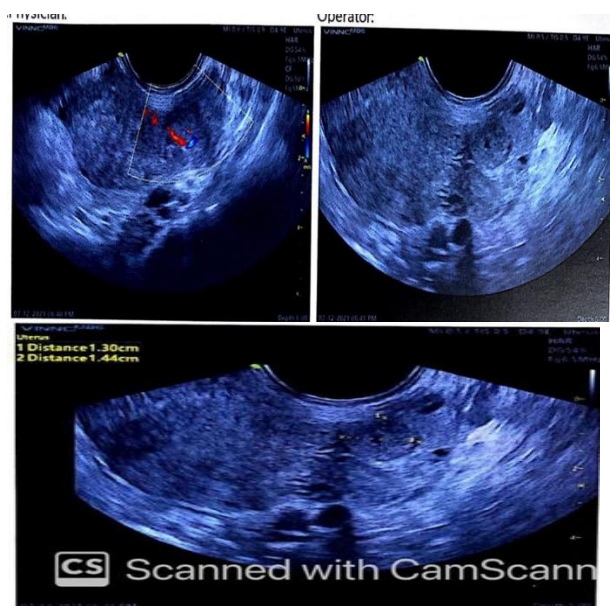


Figure 2: Ultrasound report of cesarean scar pregnancy for confirmation.

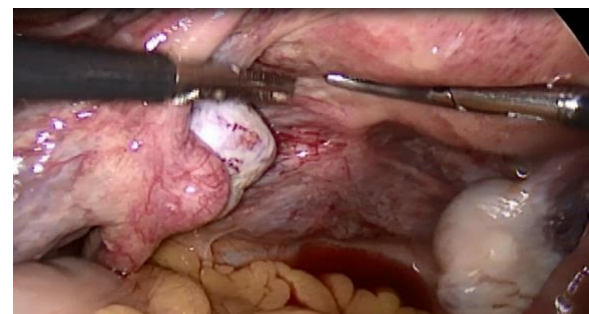


Figure 3: Exploring the uterus adnexa, ovaries, tubes and Douglas pouch.



Figure 4: Isthmic mass externally noted on the lower segment of the uterus.

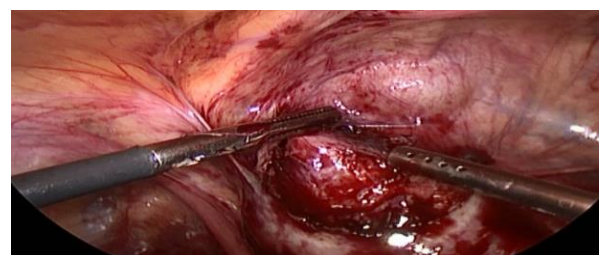


Figure 5: Dissection of the peritoneum over the isthmic mass with separation of the bladder flap to avoid bladder injuries.

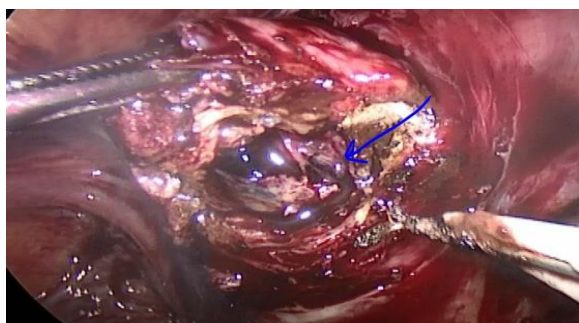


Figure 6: Evacuation of the products of conception from the uterine isthmus with the aid of hook and irrigation sheath.

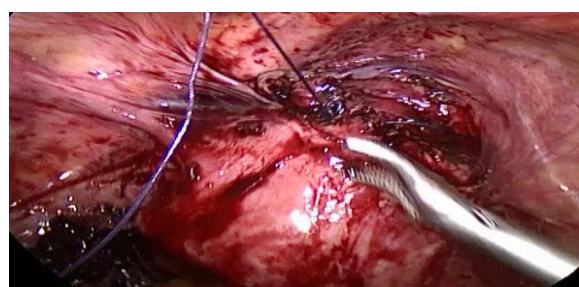


Figure 7: Complete suturing of the whole wound.

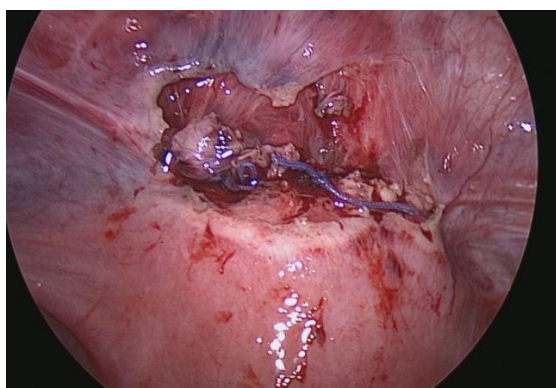


Figure 8: Scar at the end with securing of all bleeding points.

DISCUSSION

Caesarean scar pregnancy can affect about 1 in 800 pregnant women and contributed to 6% of total ectopic pregnancies.¹² Caesarean scar pregnancy becomes one of the recent problems of modern obstetrics because of the increased rate of caesarean section all over the world, especially with no solid indications and the spread of the idea of caesarean section upon request.^{13,14}

Technical faults in managing and repairing caesarean uterine wound may be a significant factor in inducing caesarean scar defect and subsequently scar pregnancy, aggressive handling, leaving wound defects, tight sutures, use of delayed absorbable suture, locking of sutures, collectively is the main predisposing factors in forming scar defect at caesarean sections, inclusion of decidual

fragments into the wound edges during repair is one of the most important factor in creating scar defect because this soft tissue interposition retard the healing process.¹⁵

The presented work is case series of 15 cases diagnosed with caesarean scar pregnancy from January 2020 to January 2022 recruited from those attending Zinat Alhyat hospital maternity hospital, in Benha city Egypt. All cases was diagnosed with clinical data and ultrasound confirmation, some of the cases done ultrasound at Ahmad Farid radiology center in Benha for confirmation when in doubt, all cases subjected to complete preoperative evaluation clinical, radiological and laboratory, all cases underwent laparoscopic scar pregnancy scar evacuation with complete excision of the old unhealthy scar to prevent recurrence. No significant difference regarding the epidemiological data 'no intraoperative or postoperative complications and patients followed up by HCG and ultrasound daily for one weak

The presented work confirmed that laparoscopic repair and termination of caesarean scar pregnancies was a good option for complete cure with no intraoperative or post-operative complications; there are many methods for treating caesarean scar ectopic listed in literature and many article like systemic methotrexate or local into the sac or the intracardiac injection of kcl to stop fetal pulsations ,but these methods carries the risk of hemorrhage and need close monitoring in addition to the side effects of methotrexate.¹⁶

CONCLUSION

Laparoscopic resection of caesarean scar pregnancy is a good option for repair of this kind of ectopic with no complications.

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Ethical approval: Not required

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