



OBSTETRIC MORBIDITY ASSOCIATED WITH CESAREAN NICHE: A CASE REPORT

Obstetrics & Gynaecology

**Nahla Hatam
Hamodi**

Specialist obstetrics and Gynecology MRCOG, MRCPI, Hospital/Institute details: Danat Alemarat Hospital

ABSTRACT

We presented the case of a 32-year-old woman with a history of two early pregnancy losses and previous cesarean delivery 2012. had a laparoscopic repair of the cesarean niche in 2018, she experienced an intrauterine fetal demise at 27 weeks in her subsequent pregnancy, leading to medical management with Misoprostol. In 2023 with new pregnancy at 39 weeks and 6 days gestation, she presented with lower abdominal pain, necessitating emergency management with cesarean section due to a scar dehiscence-like pouch. A baby girl was delivered with favorable outcomes. This case underscores the importance of early diagnosis and appropriate management of cesarean niche pregnancy to prevent maternal complications. Early recognition and prompt intervention are crucial for optimizing outcomes in cesarean niche pregnancies.

KEYWORDS

Cesarean Niche; Pregnancy, Obstetric Morbidity.

INTRODUCTION

Recently, cesarean sections have become increasingly common, with over one in every three newborns in the United States [1], and even more so worldwide [2]. This rise in cesarean rates has been consistent over the past decade. However, along with this trend comes a host of associated issues, including increased healthcare costs and complications for both mothers and newborns. These challenges are further exacerbated by existing healthcare disparities, disproportionately impacting Black women [3].

Despite efforts aimed at addressing cesarean-related complications such as unusual placentation, it remains crucial to understand and manage gynecological sequelae, particularly cesarean uterine scar abnormalities, commonly referred to as niches. These defects can lead to complications in subsequent pregnancies and long-term gynecological issues such as dysmenorrhea, irregular uterine bleeding, and subfertility [4]. Research indicates that up to 65% of patients were presented with uterine bleeding, 46.2% with chronic pelvic pain, 52% with dysmenorrhea, 71.5% with infertility, and 24.2% with dyspareunia [5]. To effectively tackle the challenges associated with cesarean scar niches and improve maternal health outcomes, comprehensive research is necessary. Hence this case focused on obstetric morbidity associated with cesarean niche pregnancy.

Case Presentation

A 32-year-old, gravida 4, para 2 and abortus 2. Her first two pregnancies ended in early pregnancy loss. In third pregnancy had a lower segment cesarean section in 2012 of alive baby then experienced subfertility and irregular uterine bleeding, underwent laparoscopic Niche repair of in 2018. Subsequently, she had her fourth pregnancy but, unfortunately resulted in intrauterine fetal demise (IUD) at 7 months gestation due to multiple cardiac anomalies. The IUD was managed medically with Misoprostol, resulting in vaginal delivery of a baby weighing 1.6 kg.

In her 5th pregnancy was spontaneous conception The patient presented to the hospital for antenatal booking visit at 17 weeks gestation with an estimated due date of September 28, 2023. At 35 weeks mode of delivery discussed with her benefit and risk explained, particularly vaginal delivery trial after niche repair. Despite limited evidence, the patient and healthcare team agreed upon a plan for a spontaneous vaginal delivery without induction or augmentation.

at 39 weeks and 4 days of gestation presented with lower abdominal pain characterized by a sensation of scar pricking and stretching like pain, soft abdomen, some scar tenderness On vaginal examination, the cervix was found to be open at 1cm with the vertex at -3, fetal CTG was normal

Urgent bed side ultrasound findings revealed a scar thickness of 5mm, but no definitive measurement for residual myometrium thickness was obtained (Figure 1). (Figure 2A, 2B). Emergency management for a cesarean section due to a scar dehiscence-like pouch measuring approximately 4cm in width and 3cm in height. A baby girl was delivered with good Apgar scores and a weight of 2.6kg.

DISCUSSION

Cesarean niche occurs when trophoblasts implant into a previous cesarean scar, often due to impaired healing [6]. Typically, the cesarean niche presents vaginal bleeding ranging from spotting to life-threatening hemorrhage and mild to moderate abdominal pain, with around 37 percent of patients in early pregnancy being asymptomatic [7]. The most critical complication of cesarean niche is uterine rupture, which manifests as acute severe pain, massive bleeding, and hemoperitoneum, potentially leading to hemodynamic shock [6].

In 2019, a European Taskforce introduced the term "uterine niche" to define an indentation at the site of a cesarean scar, with three subclassifications: simple niche, simple niche with one branch, and complex niche. Niches are commonly visualized as wedge triangular distortions within the scar, with varying shapes reported in studies [8]. Imaging modalities such as transvaginal ultrasound (TVUS) and magnetic resonance imaging (MRI) are utilized for niche detection, with TVUS being the most reported initial imaging method due to its accessibility. Contrast-enhanced ultrasound, particularly saline contrast Sono hysteroGRAPHY, has shown higher detection rates compared to TVUS, offering clearer visualization of niche defects [9].

Early cesarean niche diagnosis, ideally before 9 weeks of gestation, is preferable due to the significant distinction between cesarean niche, cervical pregnancy, and low intrauterine pregnancy at this stage [6, 10]. Differential diagnosis from spontaneous abortion is also essential, as cessation of embryonic or fetal cardiac activity does not eliminate CSP complications [11]. In our case, the cesarean niche was diagnosed at 39 weeks of gestation, meeting ultrasonographic criteria.

Cesarean niche management depends on various factors including clinical presentation, gestational age, location, fetal viability, and patient preference [12]. Expectant management was an option for viable cesarean niche, but it could increase the risk of severe maternal morbidity and mortality. If termination was desired, prompt medical or surgical intervention was crucial to prevent life-threatening complications [13]. Surgical options included hysteroscopic resection, vacuum aspiration, and excision with scar reconstruction [12, 13]. Minimally invasive surgical options, such as hysteroscopic resection and laparoscopic repair, have demonstrated success in treating symptomatic niches. In our case, emergency management involved exploratory laparotomy with cesarean section due to a scar dehiscence-like pouch measuring approximately 4cm in width and 3cm in height [12].

CONCLUSION

The laparoscopic approach presents a higher level of complexity and technical demand compared to the hysteroscopic resection of isthmoceles. Additionally, only a limited number of surgeons possess the requisite expertise to perform laparoscopic procedures proficiently. Conversely, not all gynecological surgeons receive training in hysteroscopic resection techniques for isthmoceles. Consequently, the choice between the two techniques may often depend on individual surgeon skills rather than selecting the most appropriate technique for the specific scar defect. This variation in surgical expertise could lead

to disparities in the selection of surgical approaches for cesarean scar defects.

Declarations

Ethical approval

Ethical approval for this study was provided by the Ethical Committee

Patient Consent Statement

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review upon request.

Sources of funding

Not applicable.

Conflict of interest

None of the authors have any potential conflict of interest.

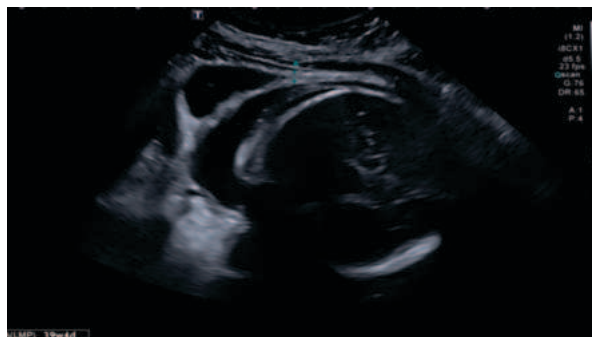


Figure 1. Ultrasonography at 39 weeks and 4 days gestation

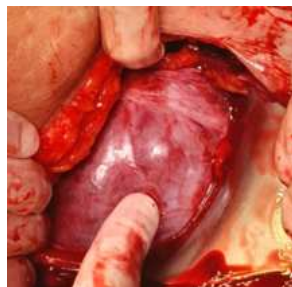


Figure 2A. Scar dehiscence



Figure 2B. Scar dehiscence - pouch like

REFERENCES

- Hamilton BE, Martin JA, Osterman MJ, Driscoll AK., Rossen LM. Vital statistics rapid release. Births: Provisional data for 2017. Centers for Disease Control and Prevention. p. 1–10, vol. 2020.
- Nakamura-Pereira M, do Carmo Leal M, Esteves-Pereira AP, Domingues RM, Torres JA, Dias MA, et al. Use of Robson classification to assess cesarean section rate in Brazil: the role of source of payment for childbirth. *Reprod Health* 2016;13:128.
- First data released on maternal mortality in over a decade [press release]. National Center for Health Statistics. Available from: https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2020/202001_MMR.htm. Office of Communication 2020.
- Antoine C, Young BK. Cesarean section one hundred years 1920-2020: the Good, the Bad and the Ugly. *J Perinat Med*. 2020 Sep 4;49(1):5-16. doi: 10.1515/jpm-2020-0305. PMID: 32887190.
- Tanos V, Toney ZA. Uterine scar rupture - prediction, prevention, diagnosis, and management. *Best Pract Res Clin Obstet Gynaecol* 2019;59:115–31.
- Gonzalez N, Tulandi T. Cesarean scar pregnancy: A systematic review. *J Minim Invasive Gynecol*. 2017;24(5):731–8. DOI: 10.1016/j.jmig.2017.02.020
- Rotas MA, Haberman S, Levigur M. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management. *Obstet Gynecol*. 2006;107(6):1373–81. DOI: 10.1097/01.AOG.0000218690.24494.ce
- Jordans IPM, de Leeuw RA, Stegwee SI, et al. Sonographic examination of uterine niche in non-pregnant women: a modified Delphi procedure. *Ultrasound Obstet Gynecol*. 2019;53:107–115.
- Rudaitis V, Maldutaytė G, Brazauskienė J, Pavlauskas M, Valančienė D. Cesarean Scar Pregnancy: A Case Report. *Acta Med Lit.* 2022;29(1):124-130. doi: 10.15388/Amed.2022.29.1.17.
- Timor-Tritsch I, Buca D, Di Mascio D, Cali G, D'Amico A, Monteagudo A, Tinari S, Morlando M, Nappi L, Greco P, Rizzo G, Liberati M, Jose-Palacios-Jaraquemada, D'Antonio F. Outcome of cesarean scar pregnancy according to gestational age at diagnosis: A systematic review and meta-analysis. *Eur J Obstet Gynecol Reprod Biol*. 2021;258:53-59. DOI: 10.1016/j.ejogrb.2020.11.036
- Riaz RM, Williams TR, Craig BM, Myers DT. Cesarean scar ectopic pregnancy: imaging features, current treatment options, and clinical outcomes. *Abdom Imaging*. 2015;40(7):2589-99. DOI: 10.1007/s00261-015-0472-2
- Society for Maternal-Fetal Medicine (SMFM) . Electronic address: pubs@smfm.org. Miller R, Timor-Tritsch IE, Gyamfi-Bannerman C. Society for Maternal-Fetal Medicine (SMFM) Consult Series #49: Cesarean scar pregnancy. *Am J Obstet Gynecol*. 2020;222(5):B2–14. DOI: 10.1016/j.ajog.2020.01.030
- Diagnosis and management of ectopic pregnancy: Green-top guideline no. 21: Green-top guideline no. 21. *BJOG*. 2016;123(13):e15–55. DOI: 10.1111/1471-0528.14189