

Uterine Niche: An Emerging Phenomenon

Rozina Mustafa, Saema Tehseen and Sagheera Anjum

Department of Obstetrics and Gynaecology, Pakistan Air Force Hospital, PAF Base Faisal, Fazaia Ruth Pfau Medical College, Karachi, Pakistan

ABSTRACT

The rising caesarean section (CS) rate in many low- and middle-income countries is due to lack of access to epidural analgesia. Other reasons include increasing maternal requests for CSs, and earlier detection of maternal and foetal indications through improved monitoring modalities. This trend has led to complications such as morbid adherence of placenta, arteriovenous malformations (AV Malformations), and uterine niche formation. A uterine niche which is also called scar diverticulum, scar pouch, or isthmocoele results from defective tissue healing. The authors report a case of a uterine niche in a 32-year lady with a history of two CSs and irregular heavy menstrual bleeding (HMB) for the past two years. Her ultrasound revealed a heterogeneous anterior myometrium with blood in the endometrial cavity. Contrast-enhanced magnetic resonance imaging (CE-MRI) revealed an outpocketing at the uterine scar site with blood flow from the uterine cavity into the structure identified as a CS niche. At laparotomy, a 5×5 cm niche was identified along the anterior uterine wall with a 3×3 cm fibroid attached to it. Excision of the uterine niche and scar repair was performed. The patient's recovery was uneventful. Histopathological examination revealed endocervical mucosa, endometrial mucosa, and fibroblastic stromal reaction, confirming the uterine niche.

Key Words: Caesarean section, Deficient myometrium, Uterine niche.

How to cite this article: Mustafa R, Tehseen S, Anjum S. Uterine Niche: An Emerging Phenomenon. *JCPSP Case Rep* 2025; **3**:380-382.

INTRODUCTION

A significant rise in the caesarean section (CS) rate has been observed globally. This rise is even higher in low- and middle-income third-world countries. Ideally, CS is recommended in situations where vaginal delivery may harm the mother or foetus.¹ The major causes of this in our part of the world include increasing maternal demand for elective CS, as well as a rise in elective repeat CS due to limited access to epidural analgesia, and the lack of one-to-one monitoring in overburdened hospitals. This, along with cultural inhibitions, does not permit birthing partners to provide emotional support during labour, which is one of the reasons patients prefer CS over normal delivery. In addition, earlier detection of maternal and foetal complications through improved monitoring modalities, such as cardiotocography (CTG), has also contributed to rising CS rates. This rise, in turn, has led to complications such as morbid adherence of placenta, arteriovenous malformations (AVMs), and the uterine niche. Uterine niche is defined as a myometrial defect at the scar site which fails to regenerate fully, causing communicating outpocketing from the endometrial cavity, presenting with irregular menstrual bleeding, which, if persists, surgical intervention may be required.²

Uterine niche has been quoted in several publications by several names, including caesarean scar defect, isthmocoele, sacculation, scar diverticulum, and scar pouch.³ Repair in symptomatic patients *via* hysteroscopic, laparoscopic, or open approach has shown convincing results.

The authors share a rare case of uterine niche presenting at the PAF Hospital, Karachi, Pakistan.

CASE REPORT

A 30-year lady, Para 2, with a history of two emergency CSs, whereby the last delivery occurred 4 years back, presented in the Gynaecology OPD with complaints of heavy postmenstrual bleeding for the last two years. Her menstrual pattern changed from 7/30 to 9-10/20. There were complaints of dysmenorrhoea and dyspareunia.

No abnormal findings were revealed in general physical, systemic, abdominal, and vaginal examinations. Ultrasound findings revealed a bicornuate uterus, with the right horn communicating with the left horn just above the caesarean scar. In addition to this, the right horn was distended with a collection of fluid. On retrieval of the previous record, no such intraoperative findings were documented in the discharge notes. A contrast-enhanced MRI revealed blood collection within the caesarean scar niche, communicating with the endometrial cavity, along with thinning of the overlying myometrium. Radiological evidence suggested a uterine niche. She had been managed with antifibrinolytics, prostaglandin synthetase inhibitors, and oral contraceptive pills (OCPs), but her symptoms persisted. Due to the non-availability of a laparoscope, laparotomy was performed. Intraopera-

Correspondence to: Dr. Saema Tehseen, Department of Obstetrics and Gynaecology, Pakistan Air Force Hospital, PAF Base Faisal, Fazaia Ruth Pfau Medical College, Karachi, Pakistan
E-mail: saematehseen@yahoo.com

Received: May 03, 2025; Revised: July 30, 2025;
Accepted: August 10, 2025
DOI: <https://doi.org/10.29271/jcpspcr.2025.380>

tive findings revealed a normal-sized uterus (Figure 1) with an out-pocketing at the CS scar, identified as a uterine niche (Figure 2). A 3×3 cm fibroid on the uterine wall was also found. Excision of the niche and repair of the defect were undertaken. The patient had an uneventful recovery, and she was discharged on the 3rd postoperative day. Appropriate contraception was advised, and her histopathology report revealed endocervical mucosa, endometrial mucosa, and fibroblastic stromal reaction, confirming the uterine niche.

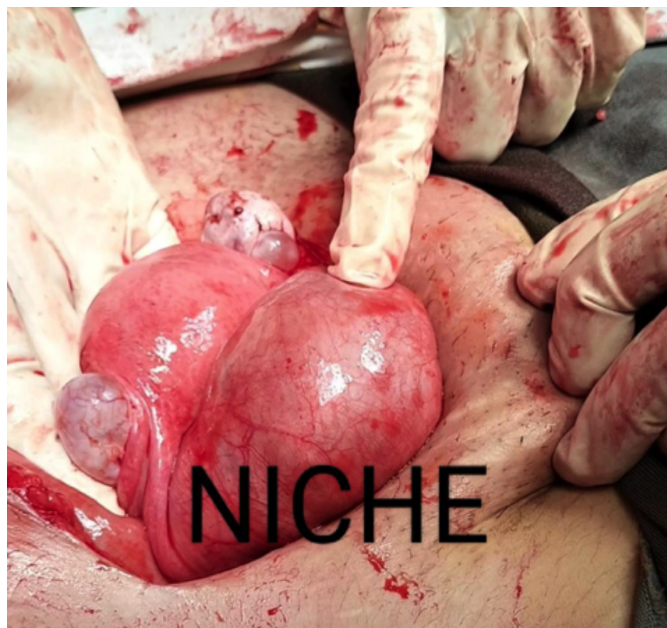


Figure 1: Uterine Niche as pointed out by the surgeon's left index finger, signifying outpocketing at the caesarean scar site.

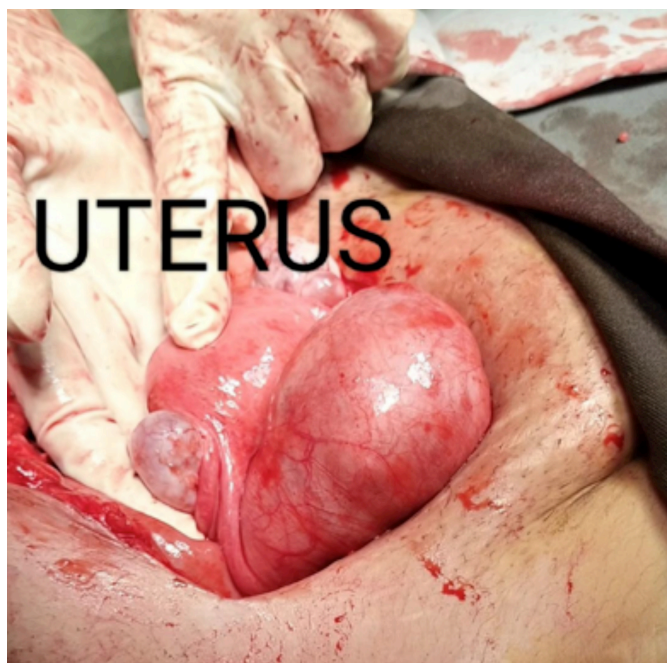


Figure 2: Normal-sized uterus, as pointed out by the surgeon's left index finger.

DISCUSSION

Uterine niche has been defined in the literature as an indentation at the site of the caesarean scar. It causes symptoms such as dysmenorrhoea, dyspareunia, and postmenstrual bleeding. Histopathology reveals endocervical mucosa with cystic dilatation or endocervical-endometrial mucosa of the lower uterine segment with fibroblastic stroma.⁴ The histopathology report in the present case showed similar findings. Transvaginal ultrasound (TVUS) studies have reported a higher incidence of defects following emergency as compared to elective CSs, as observed in a recent prospective cohort study.⁵ Another study demonstrated that double-layer closure of the uterine scar is superior to single-layer closure in the prevention of isthmocele.³ Although several studies have reported an association of dysmenorrhoea, dyspareunia, and postmenstrual spotting with this condition, more recent research has not demonstrated this association.⁶ Antila *et al.* observed that in the conservative approach, Mirena insertion resulted in a significant reduction of symptoms compared to hysteroscopic resection, especially for postmenstrual spotting after six months of use.⁶ Other forms of medical management, such as OCPs, have also shown favourable results. Among surgical interventions, hysteroscopic, laparoscopic,⁷ combined approaches, and laparotomy have all been successfully utilised.²

In conclusion, the uterine niche is a rare but significant complication of repeat CSs, often presenting with abnormal uterine bleeding. Early diagnosis through imaging and timely surgical management can lead to favourable outcomes.

PATIENT'S CONSENT:

Written informed consent was taken from the patient.

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

RM: Literature review and critical revision.

ST: Conceptualisation, analysis, and drafting of the manuscript.

SA: Critical revision and analysis.

All authors approved the final version of the manuscript to be published.

REFERENCES

1. Rahman M, Khan N, Rahman A, Alam M, Khan A. Long-term effects of caesarean delivery on health and behavioural outcomes of the mother and child in Bangladesh. *J Health Popul Nutr* 2022; **41**(1):45. doi: 10.1186/s41043-022-00326-6.
2. He X, Yan L, He C, Zhu C, Mol BW, Zhang J, *et al.* The effect of a hysteroscopic niche resection compared with Levonorgestrel-releasing intrauterine device on postmenstrual spotting in patients with a symptomatic niche in the uterine cesarean scar: A prospective cohort study. *Eur J Obstet Gynecol Reprod Biol* 2021; **265**:66-73. doi: 10.1016/j.ejogrb.2021.08.014.
3. Stegwee SI, van der Voet LF, Ben AJ, de Leeuw RA, van de Ven PM, Duijnhoven RG, *et al.* Effect of single-versus double-

- layer uterine closure during caesarean section on postmenstrual spotting (2Close): Multicentre, double-blind, randomised controlled superiority trial. *BJOG* 2021; **128(5)**:866-78. doi: 10.1111/1471-0528.16472.
4. Karpathiou G, Chauleur C, Dridi M, Baillard P, Corsini T, Dumollard JM, et al. Histologic findings of uterine niches. *Am J Clin Pathol* 2020; **154(5)**:645-55. doi: 10.1093/ajcp/aqaa080.
5. Dosedla E, Gal P, Calda P. Association between deficient caesarean delivery scar and caesarean scar syndrome. *J Clin Ultrasound* 2020; **48(9)**:538-43. doi: 10.1002/jcu.22911.
6. Antila RM, Maenpaa JU, Huhtala HS, Tomas EI, Staff SM. Association of caesarean scar defect with abnormal uterine bleeding: The results of prospective study. *Eur J Obstet Gynaecol Reprod Biol* 2020; **244**:134-40. doi: 10.1016/j.ejogrb.2019.11.021.
7. Donnez O. Cesarean scar disorder: Management and repair. *Best Pract Res Clin Obstet Gynaecol* 2023; **90**: 102398. doi: 10.1016/j.bpobgyn.2023.102398.

• • • • •

Copyright © 2025. The author(s); published by College of Physicians and Surgeons Pakistan. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY-NC-ND) 4.0 <https://creativecommons.org/licenses/by-nc-nd/4.0/> which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.