Uterine necrosis in obstetrics after emergency surgical procedure: the dark side of hypogastric artery ligation.

Mattia Dominoni, M.D, Barbara Gardella, M.D, Arsenio Spinillo, M.D

PII: S0002-9378(22)00662-7
DOI: https://doi.org/10.1016/j.ajog.2022.08.027
Reference: YMOB 14692


Received Date: 25 July 2022
Accepted Date: 15 August 2022


This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2022 Elsevier Inc. All rights reserved.
Title page

Uterine necrosis in obstetrics after emergency surgical procedure: the dark side of hypogastric artery ligation.

Authors: Mattia DOMINONI M.D. 1,2, Barbara GARDELLA M.D.1,2, Arsenio SPINILLO M.D1,2.

1 Department of Clinical, Surgical, Diagnostic and Paediatric Sciences, University of Pavia, Pavia, Italy.

2 Department of Obstetrics and Gynecology, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy.

Corresponding Author: Barbara Gardella, Department of Clinical, Surgical, Diagnostic and Paediatric Sciences, University of Pavia, Corso Strada Nuova, 65, 27100, Pavia, Italy. Phone number: +390382503720, Fax number: +390382503146, Email address: barbara.gardella@gmail.com

Conflicts of interest:

The authors report no conflict of interest.

No funding source.
Dear editor,

Karoui A. et al., in their report about uterine necrosis after artery ligation, described an interesting and rare case of surgical complication of the treatment of postpartum hemorrhage following the failure of medical therapy. Moreover we appreciate the author’s interest to report this surgical adverse events of post-partum hemorrhages, and we take the opportunity to highlight the problem of consequence of uterine vascular deprivation. In our center an analogue case of post-partum hemorrhages caused by traumatic lesion of uterine vessels following cesarean section. The patients underwent abdominal delivery for breech presentation and during surgery, agenesis of the peritoneal tissue of the broad ligament was retrieved with exposure of the uterine arterial and venous vessels bilaterally, conditioning intraoperative hemorrhage with following performance of bilateral ligation of the hypogastric artery. The patient reported uterine necrosis 40 days after the surgical procedure and laparotomic hysterectomy was performed for sepsis. The women referred fever, abdominal pain, and purulent lochia belatedly, remaining asymptomatic during the puerperium. Literature data reported limited cases of uterine necrosis after surgical uterine compression sutures, artery ligation or artery embolization for the management of post-partum hemorrhages; the incidence and the casual factors remain unknown. We may suppose that the onset of uterine necrosis could be the sum of two different pathways. First of all, in patients underwent artery ligation, the ischemic damage derives from inadequate collateral circulation (round uterine ligament arteries) that do not allow a sufficient blood supply to the uterus. Probably hormonal status, pro-inflammatory cytokines and chemokines pathway activation and immune response play a key role in the uterine reperfusion mechanism. Artery ligation may cause an unpredictable modification on the endothelial tissue of uterine vessels, resulting in more susceptible ischemic damage. In the other hand, agenesis of
peritoneum could induce the excessive laxity of the peritoneal tissue, and concomitant physiological changes in connective and extracellular matrix during pregnancy increase the risk of modified physiological uterine involution of post-partum with an increased risk of ischemic injury. The distinctive trait of these two cases lie in the development of uterine necrosis after artery ligation, and not following uterine compression sutures, as reported in literature data. Finally the uterine necrosis may represent a tardive event without early symptoms, as well as our case demonstrated.

In conclusion, the uterine necrosis after artery ligation may be a warming event for obstetric in the counseling of post-surgical emergency procedures properly because the incomplete knowledge of the timing of uterine reperfusion represents a challenge.

Mattia Dominoni, M.D.

Barbara Gardella, M.D.

Arsenio Spinillo, M.D.

References

