

Uterine necrosis after B-lynch technique and Tsurulnikov's vascular ligation at management of delivery hemorrhage: case report

Kamal el Moussaoui¹, AMINA LAKHDAR², azziz baidada², and aicha kharbach¹

¹Universite Mohammed V de Rabat Faculte de Medecine et de Pharmacie Rabat

²Université Mohammed V de Rabat

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Introduction :

Delivery haemorrhage remains the leading cause of maternal mortality in Morocco [1] . It is an obstetric emergency that requires rapid, effective and multidisciplinary care In cases of severe post-partum haemorrhage that is resistant to medical treatment, progress in interventional radiology and especially surgical techniques have provided safe and effective alternatives to haemostasis hysterectomy. Over the last ten years, uterine compression techniques have been described and integrated into the therapeutic arsenal against post-partum haemorrhages. However, their evaluation in the literature is still weak.

We report a rare case of uterine necrosis following a combination of uterine compression sutures and vascular ligation.

Case report :

The patient is 37 years old, with no notable pathological antecedents. 4th gesture 4 -th part, the three previous deliveries were by low voice. The current pregnancy took place without any abnormality. The patient presented to the maternity hospital at 39 weeks of amenorrhoea + 4 days at the beginning of labour, the evolution of labour was harmonious until a dilatation of the cervix of 5 cm or she presented an acute foetal suffering with severe bradycardia objectified by the recording of the foetal heartbeat. An emergency caesarean section was indicated, which allowed the extraction of a newborn male Apgar 10/10 -th, birth weight: 3800 grams. The patient suffered a delivery haemorrhage during the operation due to uterine inertia. The uterine massage supplemented by oxytocin infusion and the admission of 5 intrarectal misoprostol tablets (due to the non-availability of sulprostone) did not correct the uterine atony. Since the embolisation technique is not available in our centre, we resorted to Tsurulnikov's triple ligation combined with uterine compression using the B-Lynch technique using a Vicryl 1 absorbable thread. The bleeding stopped and the patient received a transfusion of 2 red blood cells.

The postoperative course was normal until the 4th post-operative day when the patient presented with fever a (39,6°C) associated with abdominal pain and diffuse abdominal tenderness, the louchia was not fetid and without metrorrhagia. A The haemogram GB = 28.000/mm³ , Hb = 10.1 g/dl and a CRP elevated to 283 mg/L . A pelvic ultrasound was carried out showing a slight haematometry associated with a slightly heterogeneous myometrium especially on the anterior surface of the uterus. The patient was put on a broad-spectrum antibiotic to treat possible endometritis. 48 hours later, the evolution was marked by the installation of a state of septic shock with a tachycardia of 130 beats per minute, a blood pressure of 80/40 mmHg with persistence of a fever a (39,2°C) and clinically an abdominal contracture. A pelvic CT scan was carried out showing a medium-abundant pelvic effusion and above all gas bubbles in the myometrium

in favour of uterine necrosis. An exploratory laparotomy was urgently indicated.

Surgical exploration finds extensive uterine necrosis especially in its anterior surface, a hystero-graphy partially open in the centre and superinfected with the presence of false membranes occupying the entire anterior surface of the uterus (figure 1). Necrosis was definitive despite the removal of the sutures of vascular ligatures previously performed. A total hysterectomy was performed (figure 2) with an abandoned serum lavage of the peritoneal cavity with pelvic drainage, which was removed two days later.

The postoperative course was favourable and the anatomopathological examination confirmed the diagnosis of uterine necrosis

Discussion :

Postpartum Bleeding is defined as an estimated blood loss greater than

500 ml within 24 hours after vaginal birth and more than 1000 ml after a caesarean section [2]. Post partum haemorrhage remains an obstetrical emergency which requires rapid treatment. This treatment is based on medical treatment (oxytocin, methyl-ergometrine, misoprostol), non-medical treatment (uterine massage, bimanual uterine compression then compression of the abdominal aorta), repair of vaginal or cervical lacerations and manual uterine revision if necessary [3].

If these measures fail, and/or if the patient's condition is unstable, surgical treatment is required. There are many surgical techniques for the management of post-partum haemorrhage and hysterectomy remains the reference solution.

in this context. However, new conservative surgical techniques that are easier to execute and are less aggressive have emerged and are becoming more commonly used. [4]

Uterine preservation surgery has been defined as any surgery consisting of pelvic artery ligation or application of uterine compression sutures to achieve haemostasis while preserving the uterus, e.g. Bilateral hypogastric artery ligation, uterine artery ligation, B-Lynch uterine compression suture, Tsirulnikov triple ligation. . .

Tsirulnikov's Triple Ligation is a simple surgical technique for the preservation of the uterus consisting of bilateral ligation of round ligaments, uteroovarian ligaments and uterine arteries [5].

The B-Lynch technique: first practised in 1989 by Christopher B-Lynch in a woman who refused hysterectomy haemostasis, during a caesarean section, with a resorbable suture resistance 1 or 2 and for as long as possible, which is applied around the uterus like the straps of a backpack [6].

- Cho suture (square sutures): Korean This technique was introduced by Cho JH, which consists of applying the anterior and posterior walls of the uterus together using multipoint sutures with transfixing frames.

- The often cited Pereira stitch combines several sutures, vertical and transfixion under horizontal serosa [7].

Although these uterine compression and ligation techniques have been poorly evaluated, the ease of implementation has allowed their rapid diffusion throughout the world. As a result, some complications occurred: pyrometry, erosion of the strap through the uterine wall, uterine ischaemia, uterine necrosis, synechia. Nevertheless the frequency of such complications remains uncertain given the lack of major reports in the literature on these procedures, but could be as high as 5-7% [8].

The nature of the sutures used (duration of resorption) and the degree of initial tension in the stitches are two elements which may explain the difference in terms of ischaemia. The technique itself could have an effect on the occurrence of necrosis: a uniform compression which does not interrupt the parietal vascularisation in its entirety (in particular by avoiding sutures in the horizontal direction and only performing them in the vertical direction) could reduce this risk [9]. Correct placement of the compression points (alone or in combination with other haemostatic procedures) so that reperfusion of the myometrium through the

collateral anastomotic network is preserved may reduce the risk of necrosis [10]. finally, combination with other haemostatic procedures leading to total interruption of the anastomotic network of the uterus, as was the case with our patient [11].

The combination of conservative surgical techniques remains to be assessed. Preference is given to the Tsurunikov type distal triple ligature, supplemented if necessary by a B-Lynch, modified according to Hayman (closed uterus) [12]. Imaging plays an important role in the diagnosis. Ultrasound is the first line because it shows a large uterus with a redrawn wall and a heterogeneous image is associated with the presence of air in the uterus. The use of CT scan is also often useful, as in our case it revealed uterine necrosis with the presence of gas bubbles in the myometrium and endometrium and a lack of myometrial elevation.

Conclusion :

The surgical techniques of uterine compression sutures play a major role in the therapeutic arsenal of post-partum haemorrhage during caesarean section. It allows, as a complement or alternative to vascular ligation, the preservation of the patient's fertility, but it also requires maximum caution and monitoring of complications, the most serious of which is uterine necrosis. To be suspected in front of any picture associating abdominal pain, fever and inflammatory syndrome after surgery.

Figures :

Figure 1: Intraoperative image showing the anterior aspect of the necrotic and superinfected uterus

Figure 2: The hysterectomy specimen showing the extent of necrosis and superinfection of the uterus.

Abbreviations

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Authors'contributions

KE made substantial contributions to conception and design, acquisition of data, analysis and interpretation of data; he has been involved in drafting the manuscript and revising it critically for important intellectual content. AL made substantial contributions to interpretation of data and she has beeninvolved in drafting the manuscript and revising it critically for important intellectual content. AB ,NZ , and AK made substantial contributions to conception and design and acquisition of data; they has been involved in drafting the manuscript.

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Ethics approval and consent to participate

Ethics approval has been obtained to proceed with the current study . Consent to participate not applicable.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Competing interests

The authors declare that they have no competing interests.

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