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CASE REPORT

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DELAYED UTERINE INVERSION: CASE REPORT

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ABSTRACT

A Delayed postpartum uterine inversion is a clinical condition rarely described in the literature and its frequency varies considerably. In around 50% of the cases there is no defined casuistry or identifiable predisposing factor. The data for the preparation of the literature review were mostly inventoried from foreign articles published between 2006 and 2021. The present article reports the case of a 25-year-old nulliparous woman admitted to the Gynecology and Obstetrics Emergency Department of Santa Casa de Araras – SP with the main complaint of urinary dysfunction (a symptom not described as a classic sign in the literature). Physical and specular examination confirmed the hypothesis of delayed postpartum uterine inversion, of 4th degree, whose diagnosis was made on the 87th day of puerperium. The Taxe maneuver was used as a therapeutic strategy, which proved to be ineffective, and the Huntington's surgical approach was indicated, with success and complete anatomical and functional recovery, without sequelae and with preservation of the patient's reproductive capacity. Due to the scarcity of international and national articles on the subject, further studies are needed, allowing a better understanding of the triggering factors of the pathology, the formulation of strategies, protocols, prophylactic and therapeutic measures that can reduce morbidity and mortality from this event and the early identification of this pathology.

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INTRODUCTION

Acute uterine inversion in the postpartum period is an uncommon and severe obstetric emergency whose incidence varies from 1 in 2,000 to 20,000 according to recent literature, which points to the multiplicity of factors involved. In the United States and Europe, it presents approximate values of 1/2000 and 1/100000 deliveries, respectively, and with maternal mortality around 15% (Camilo et al., 2020). This wide variation in incidence may be related to the lack of consensus in the definition of inversion, with the population studied, whether pregnant or not, as well as the identification of cases in academic inventories. According to the literature, excessive traction of the umbilical cord is more likely to be associated, manifesting as a complication of the third stage of labor, particularly in placental fundal implantation. However, other factors are also associated with excessive uterine massage, lassitude of the uterus and/or cervix, placenta accreta, short umbilical cord, congenital malformations of the uterus and use of magnesium sulfate or oxytocin (Bibliomed, 2022). Uterine inversion refers to the displacement of the fundus of the uterus that makes it collapse into the endometrial cavity, commonly in the first 24 hours of puerperium, and has an important association with postpartum hemorrhage.

Maternal death occurs in 15% of cases and it is more frequent in primiparous women whose longer labor can promote exhaustion of muscle fibers and their mechanical inversion (Camilo et al., 2020). It can be classified as acute, when it occurs within 24 hours postpartum, subacute, if it occurs from 24 hours to 30 days of puerperium, and chronic, when it manifests after 30 days of puerperium. In addition, it is complete or incomplete, divided into 4 stages, due to the progression of the uterine body in relation to the cervical ring as a parameter (Camilo et al., 2020). Four stages are described: Stage I – the uterine fundus does not exceed the cervical orifice; Stage II – the uterine fundus has exceeded the cervix; Stage III – the uterine fundus externalizes the vulva; Stage IV – the vaginal walls participate in the inversion, which is said to be total (Freitas, 2020). If the diagnosis is not made in the first 30 minutes, a cervical edema is formed that constitutes the retractable ring that prevents uterine replacement (Freitas, 2020). This case report aimed to describe a case of chronic/delayed uterine inversion, of 4th degree, with a delayed diagnosis, on the 87th day of puerperium, which required surgical treatment (Huntington), after failure of the Taxe maneuver and that arouses interest in the subject with gynecologists and obstetricians in their practice scenarios. Currently, there is a small number of studies in Brazil addressing the theme presented: delayed uterine inversion,

which makes it difficult to create protocols, care plans and actions that can reduce, identify early and treat this problem.

METHOD

This is the report of the single case of a patient seen at the Emergency Room of Gynecology and Obstetrics, at Santa Casa de Araras - SP who presented a delayed uterine inversion on the 87th day of puerperium. The data for the preparation of this study were mostly inventoried of foreign articles between 2006 and 2021. Data were searched in different platforms: UpToDate, PubMed, Datasus, Scielo; among other databases, through keywords, followed by a concrete and detailed description of the case report, discussion, approach to clinical characteristics, diagnosis and management of puerperal uterine inversion, coming to a conclusion. The researchers undertook not to disclose any data that would allow the identification of the patient described, all information related to the case was collected from her medical record. This work will be submitted to the Research Ethics Committee of Faculdade São Leopoldo Mandic SP, and was carried out in compliance with the requirements of Resolution 466/2012 of the National Health Council, which defines the ethical and legal aspects of research involving human beings, after approval by the REC.

CASE REPORT

A 25-year-old white woman, married, from Araras, SP, is admitted to the obstetric emergency room on 04/12/2022, referred from the Adult Emergency Room due to the presence of a large mass in the vaginal canal. She denied clinical comorbidities and reported spontaneous urinary incontinence since her delivery on 16/01/2022, in the 38th week of pregnancy, whose prenatal care was characterized as being of usual risk. According to reports about the birth, she was admitted to the obstetric emergency room in advanced labor, with cardiotocography in the tranquilizer pattern, whose gynecological examination showed a thin uterine cervix with 8 cm of dilation, ruptured pouch and clear amniotic fluid with lumps. The delivery was completed by Simpson forceps for the abbreviation of the expulsive period at 5:h30, and a live fetus was extracted, in a cephalic presentation, with occipito-pubic position, requiring right lateral mid-episiotomy. No circular cord or placental retention was evidenced. The newborn was born, male, weighing 2816g and APGAR 9 and 10. After spontaneous placental discharge, during episiorrhaphy, uterine hypotonia was identified and corrected by uterine massage and use of utero tonic drugs (misoprostol and oxytocin). In the puerperium, she complained of vulvar discomfort, and she maintained absent spontaneous diuresis, requiring the use of a relief probe in all urinations. On physical examination, she presented vulvar and paraurethral edema, with a sensation of bulging in the anterior vaginal wall. Ultrasonography of the abdomen and pelvis was requested, the urinary catheter was maintained for a long time and antibiotic therapy was introduced, in addition to a urology evaluation. She remained with minor, however intermittent, bleeding and received the transfusion of 04 packed red blood cells during hospitalization. USG abdomen and pelvis (19/01): uterus volume 566 cm³, endometrium 0.9 cm, absence of liquid content in the uterine cavity, no masses and/or pathological fluid collections in the abdominal and pelvic cavity are observed. Computed tomography of the lower abdomen was requested on 01/21: hypodistended bladder, with inner urethral tube balloon, volumetric uterine enlargement, adnexal regions without specific changes by the method, bowel loops without abnormalities in this exam, absence of lymph node enlargement or free fluid in the analyzed follow-up, large retroperitoneal vessels without changes, integral bone framework. Conclusion: volumetric enlargement of the uterus. After the CT report, the indwelling urinary catheter was removed with observation of spontaneous diuresis; however, she complained of pollakiuria, with a feeling of incomplete emptying.

After urological consultation, voiding urethrocytography was performed, which did not add greater information and as she maintained spontaneous urination, she was discharged from the hospital on 24/01/2022. Upon returning to the emergency room on 12/04/2022 (87th day after vaginal delivery) she underwent a gynecological examination that showed the presence of a vegetating lesion externalizing through the cervix. At bimanual touch, the uterine body was not palpable, raising the following diagnostic hypotheses: myoma, endometrial polyp and uterine inversion. She was referred to the operating room for spinal anesthesia and exploration of the vaginal cavity, which allowed the identification of uterine inversion. The taxé maneuver was performed exhaustively without success. Surgical laparotomy and Huntington's surgery were performed. On 18/04, she was discharged from hospital in good general condition, without complaints, spontaneous diuresis, without changes in the physical examination using antibiotic therapy and referred for outpatient follow-up in the Basic Health Unit.

DISCUSSION

The reported case presents a primiparous woman without risk factors and with complications during labor (required DLME and use of Forceps), who evolved with uterine inversion and had delayed recognition and treatment promptly performed. She did not present the classic clinic signs, as she presented urinary dysfunction as the main complaint. No triggering factors were identified, since the discharge was spontaneous, no signs of placental accretism or placental remnants were seen at curettage. It is important to emphasize that in around 50% of cases, no specific cause or predisposing factor can be identified (Camilo et al., 2020). Classical clinical signs include significant transvaginal hemorrhage, mild or severe pain, and absence of a palpable uterus on abdominal palpation. In addition, it is possible to identify part of the inverted uterus by the internal ostium of the cervix or externalizing through the vulva (Freitas, 2020). In the described case, the patient presented urinary dysfunction as the main complaint. This symptom is not described as a classic sign in the literature. The diagnosis is mainly clinical and the three main signs are: bleeding, shock and pelvic pain. Uterine hemorrhage is one of the most frequent signs, present in 95% of cases, and leads to shock in 60% of cases; this results from hypovolemia on the one hand, but also by a vagal mechanism of ligament stretching that uterine inversion causes, and is also an almost constant manifestation (Neves, 2006). Pelvic pain occurs in 7 to 10% of cases and may be masked by analgesia. In the case of type III or IV inversions, the diagnosis is easy, but in about 1/3 of cases the inversion is type I and II, recognizable by vaginal examination, abdominal palpation and with possible use of ultrasound (PAHO, 2018). Uterine inversions are classified in two ways, according to the time in relation to the expulsive period and according to the anatomical gravity (Freitas, 2020). Uterine inversion is classified as acute when occurs within 24 hours postpartum, subacute when occurs from 24 hours to 30 days of puerperium, and chronic when manifested after 30 days of puerperium. In addition, it is complete or incomplete, taking the cervical ring as a parameter (Camilo et al., 2020). If the diagnosis is not made in the first 30 minutes, a cervical edema is formed that constitutes the retractable ring that prevents uterine replacement (3). The retractable ring was identified during the taxé maneuver, a factor that prevented the reversal through this therapeutic method.

As for severity, four stages are described: stage I – the uterine fundus does not exceed the cervical orifice; stage II – the uterine fundus has exceeded the cervix; stage III – the uterine fundus externalizes the vulva; stage IV – the vaginal walls participate in the inversion, which is said to be total (Freitas, 2020). After identifying the uterine inversion, the repositioning is performed by the taxé maneuver (the literature recommends the use of relaxants such as halothane or terbutaline), which is the first maneuver to be performed. It consists of put the uterus in its anatomical position with the hand closed and

constant strength, and must be maintained in the cavity until the tone normalizes after the use of oxytocins or prostaglandins (if bradycardia or hypotension, the drug of choice is intravenous atropine 0.5mg) (Neves, 2006). In case of failure of the tax maneuver, surgical methods are used, such as Huntington's surgery (laparotomy followed by superior traction of the uterine body with Allis forceps) and in case of failure, the last resource to be used is considered: hysterectomy, preferably subtotal, due to the urgency inherent in the case (Giongo et al., 2012). In any of the chosen techniques, broad-spectrum antibiotic therapy and drugs that help the uterus contract should be introduced in order to avoid puerperal infections and uterine atony, respectively (Camilo et al., 2020). It is recommended, as prophylaxis for uterine inversion, controlled traction of the umbilical cord during the third period of delivery, as well as administration of oxytocin 10 IU in bolus, the latter being common for other causes of postpartum hemorrhage (PAHO, 2018). The etiological factors can be divided into individual or extrinsic predisposing factors. Among the first are the anatomical configuration of the gravid uterus, a mobile organ, and with a ligament system that allows its expansion and physiological displacement during pregnancy; however, during pregnancy, the hormonal and biochemical influence determine a greater laxity in this ligament system and finally, while the uterine fundus becomes thicker due to muscle hypertrophy, the lower segment becomes thinner and extends (PAHO, 2018). The literature differs between the casuistry related to primiparity. Some authors refer to primiparity as a risk factor, since primiparous women would have more prolonged labor; for others, the inversion occurs equally between primiparous and multiparous (Neves, 2006). Uterine hypotonia (cases of multiple pregnancy, macrosomia, use of β -mimetics), the fundal location of the placenta, short cord, seem to be other factors predisposing to inversion (Neves, 2006). Extrinsic factors include the attitudes taken during the third stage of labor: traction on the cord, often associated with uterine expression, the suspension of oxytocin after the expulsive period, are maneuvers to be avoided (Moldenhauer, 2021). The type of anesthesia (loco-regional or general) and the type of delivery do not seem to influence the incidence of inversions (Neves, 2006).

A scarring uterus is not an isolated risk factor, except in relation to being related to the higher frequency of placenta accreta, which may lead to higher risk maneuvers (Moldenhauer, 2021). Recognizing a uterine inversion and treating it quickly is fundamental for prognosis (Moldenhauer, 2021). Treatment initially consists of manual reduction of inversion. In 3/4 of cases, the inversion occurs before placental detachment (Moldenhauer, 2021). The conduct in relation to placenta drop before or after uterine replacement is not unanimous. The authors, who defend placenta drop after the correction of the inversion, aim to limit the bleeding, but most perform the placenta drop first, arguing that the placental volume hinders the replacement maneuver (Neves, 2006). Uterine relaxation is generally used for uterine reorganization, either by general anesthesia (halothane is a utero-relaxant par excellence) or diluted intravenous magnesium sulfate, 2 to 4 g; recent publications mention the use of intravenous nitroglycerin, which due to a faster action time and minimal cardiovascular effects allows rapid relaxation of the cervix (Moldenhauer, 2021). The manual reduction, according to Johnson's method, consists of pressing the uterine fundus with the palm of the hand and pushing it into the abdominal cavity, towards the umbilical scar, remaining there until the uterine tone is installed again, by the administration of oxytocin or prostaglandins, after which the hand is removed (Misodor, 2022). If this technique fails, or if a recurrence occurs, then surgical methods are used. Reduction of invagination can be achieved by laparotomy, according to the Huntington technique. This technique consists of performing a progressive traction on the round ligaments with Allis tweezers. The intervention of haultain, in case of failure of the first one by cervical edema, consists in a posterior hysterotomy, median, to avoid the bladder, of 5-6 cm reaching the cervical ring and allowing an easy uninvasion (Misodor, 2022).

Hysterectomy is the last resource (Misodor, 2022). Whatever the technique used, systematic and broad-spectrum antibiotic therapy is recommended by all authors. Septic and hemorrhagic complications are described as well as perforations or uterine ruptures at the time of reduction; mobility is mainly transfusion, but equally infectious, postpartum endometritis. The risk of recurrence persists in the following hours, or even days, following inversion, especially if the treatment was only manual replacement (Neves J. et al., 2006; Azevedo, n.d).

CONCLUSION

Puerperal uterine inversions are a rare pathology, sometimes difficult to recognize immediately, and may be responsible for considerable maternal morbidity and mortality. The diagnosis is based on close surveillance of the immediate postpartum period. The prognosis depends on the diagnostic and therapeutic speed, obtaining in this case reported complete anatomical and functional recovery, without sequelae. In the case report of chronic uterine inversion (87th puerperium), the therapy used was successful and the patient fully recovered. However, the unpredictability of this condition could lead to hysterectomy. The scarcity of quantitative data shows the need for a survey of cases to find the incidence of exact comorbidity in Brazil, and to identify and avoid the triggering factors, in addition to enabling several classification studies of uterine inversions that can occur in different obstetric and non-obstetric situations (post-abortion, uterine fibroids, postpartum and cesarean section). It was concluded that uterine inversion is a maternal life-threatening gynecological emergency that, if not recognized and reduced in a timely manner, the resulting severe hemorrhage and shock can lead to maternal death or hysterectomy and is, therefore, an important public health issue.

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