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Case Report

Uterine Malformations Discovered Incidentally During Emergency Caesarean Sections in Full-Term Pregnancies in the Northeastern Part of the Democratic Republic of Congo: About 3 Cases and Review of the Literature

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Abstract

Introduction: Uterine malformations, or Mullerian anomalies, are secondary to the absence of migration or incomplete caudal migration, or a defect in the fusion of the Mullerian ducts towards the urogenital sinus and finally either a defect in resorption of the intermullerian septum. The occurrence of a pregnancy in a group of women with this malformation is a high-risk event for the pregnant woman and the foetus.

Clinical presentation: We report three cases of uterine malformations discovered incidentally during emergency caesarean sections in full-term pregnancies: these are two cases of partial septate uterus and one case of unicornuate uterus.

Conclusion: The diagnosis of the uterine malformations should be invoked for any women at high risk of obstetric complications such as spontaneous abortion, premature delivery, postpartum haemorrhage, and malpresentation. These high-risk women should benefit from an additional examination for confirmation of diagnosis with a view to obstetric risk control.

Keywords: Uterine malformations; Pregnancy; Caesarean section

Introduction

Uterine malformations are congenital anomalies resulting either from an absence of migration or incomplete caudal migration, or a defect in the fusion of the Müllerian ducts into the urogenital sinus, and finally, from a failure of resorption of the inter-Müllerian septum [1]. The prevalence of Müllerian anomalies is 6.7% among women in general and 16.7% among women with a history of multiple miscarriages [2]. Often associated with obstetric complications, the occurrence of pregnancy on the background of uterine malformation is a potentially high-risk situation [3]. In Sub-Saharan Africa, and particularly in the Democratic Republic of Congo, there is no reporting on uterine malformations. This lack of data has prompted the presentation of these cases on uterine malformations in the northeastern part of the Democratic Republic of the Congo.

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Clinical Presentation

Case 1

A 25-year-old multiparous woman, G7P3A3, was admitted to the maternity ward for abdominal-pelvic pain at 39 weeks and 4 days of amenorrhoea. In her medical history, there was a notion of abortion in the first, third, and sixth pregnancies, and premature delivery in the second pregnancy (around 7 months of gestation with a birth weight of 1700 g), in the fourth pregnancy (around 8 months of gestation with a birth weight of 2200 g), and in the fifth pregnancy (around 7.5 months of gestation with a birth weight of 2000 g). She had her first menstruation at 14 years old, and her menstrual cycle is regular at 28 days with a notion of dysmenorrhea. At the physical examination, she had a distressed appearance, with no pallor of the conjunctivae, and the vital signs were normal. In the obstetric examination, the uterine height was 33 cm, the presentation was breech, with 3 uterine contractions lasting 40 seconds every 10 minutes, and a foetal heart rate of 136 beats per minute. During the vaginal examination, the cervix was dilated to 8 cm, the membranes were ruptured, and the degree of engagement was -2 in a moderately narrowed pelvis. An emergency caesarean section was indicated and performed due to a narrowed pelvis. She had given birth to a male newborn weighing 3000 g, with an APGAR score of 9-10-10 at one, five, and ten minutes

of life, respectively. The intraoperative examination revealed an asymmetrical uterus deviating to the right, with two uterine cavities separated by a septum extending from the uterine fundus to the isthmus, with a single cervical opening and a vaginal canal. It was a septate uterus with a curved bottom (Figure 1). No therapeutic action or paraclinical examination to investigate the associated malformation had been carried out. The postpartum period was unremarkable.

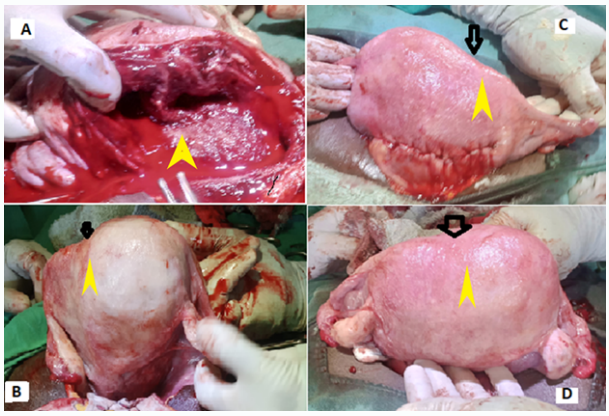

Figure 1: Intraoperative images of septate uterus. (A: Uterine partition, B,C,D: Fundal incisure).

Case 2

A 20-year-old parturient, a first-time mother, was admitted to the maternity ward for abdominal and pelvic pain at 40 weeks of amenorrhoea. She had her first period at 15 years old, and her menstrual cycle is regular at 30 days with a notion of dysmenorrhea. At the physical examination, she had a distressed appearance, with no pallor of the conjunctivae, and the vital signs were normal. During the obstetrical examination, the uterine height was 32 cm, the presentation was left oblique breech, with 2 uterine contractions lasting 30 seconds every 10 minutes, and a foetal heart rate of 148 beats per minute. During the vaginal examination, the cervix was dilated to 4 cm, the membranes were intact, and the degree of engagement was -4 in an extremely narrowed pelvis. An emergency caesarean section was indicated and performed due to a narrowed pelvis. She gave birth to a female newborn weighing 2700 g, with an APGAR score of 8-9-10 at one, five, and ten minutes of life, respectively. The intraoperative examination revealed an asymmetrical uterus, laterally deviated to the left with a rudimentary horn on the right and a normal horn on the left (Figure 2). No therapeutic action or paraclinical examination to investigate the associated malformation has been carried out. The postpartum course was normal.

Case 3

A 32-year-old parturient, multiparous G4P3A0, was admitted to the maternity ward due to genital bleeding and abdominal-pelvic pain at 38 weeks and 2 days of amenorrhoea. In her medical history, there was a record of three previous caesarean sections due to an extremely narrow pelvis and intrauterine growth restriction during the first pregnancy (1900 g birth weight), during the second pregnancy (2000 g birth weight), and during the third pregnancy (2300 g birth weight). She had her first period at 13 years old, and her menstrual cycle is regular at 28 days without any notion of dysmenorrhea. During the physical examination, she had a distressed appearance, without

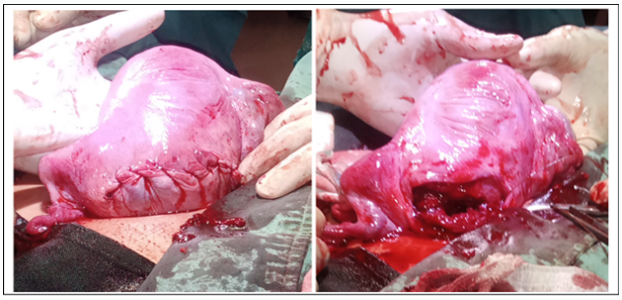

Figure 2: Intraoperative images of the unicornuate uterus.

conjunctival pallor, and the vital signs were normal. The obstetric examination revealed the presence of a midline subumbilical scar, a uterine height of 33 cm, a breech presentation, 4 uterine contractions lasting 40 seconds every 10 minutes, and a foetal heart rate of 140 beats per minute. During the vaginal examination, the cervix was dilated to 4 cm, the membranes were ruptured, meconium was present on touch and at the vulva, and the degree of engagement was -2 in an extremely narrowed pelvis. An emergency caesarean section was indicated and performed due to pre-uterine rupture. She gave birth to a male newborn weighing 3500 g, with an APGAR score of 5-6-9 at one, five, and ten minutes of life, respectively. The intraoperative examination revealed an asymmetric uterus, deviated to the right, with two uterine cavities that are separated by a septum extending from the uterine fundus to the isthmus, with a single cervical opening and a vaginal canal. It was a septate uterus with a curved bottom. (Figure 3). No therapeutic action or paraclinical examination to investigate the associated malformation had been carried out. The postpartum course was normal.

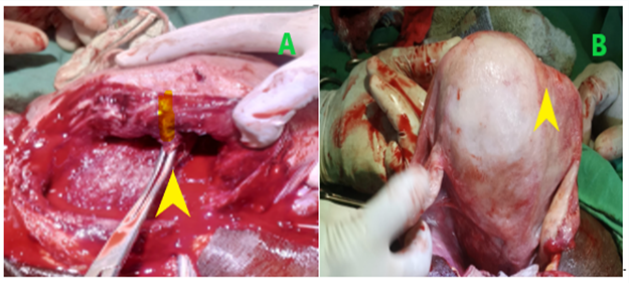

Figure 3: Intraoperative images of the septate uterus. (A: uterine septum, B: fundal Incisure).

Discussion

Structural anomalies of the uterus, cervix, and vagina occur during the formation of the female urogenital system, during embryonic and then foetal life. The female genital tract originates from the intermediate mesoderm and the endodermal tissue of the urogenital sinus. Under the influence of the absence of anti-Müllerian hormone, the Wolffian ducts regress in favour of the development of the Müllerian ducts in three phases: the migration of the Müllerian ducts towards the urogenital sinus between the 6th and 9th weeks; then the formation of the uterine cavity and the upper two-thirds of the vagina through the fusion of the lower third of the Müllerian ducts between the 9th and 13th weeks; and finally, the resorption of the inter-Müllerian septum between the 13th and 17th weeks of development [1,2]. This resorption begins at the level of the isthmus of the uterus

and quickly extends towards the cervix and then the upper two-thirds of the vagina [3]. The absorption towards the body of the uterus is slower. Any aggression during one of these phases by a teratogenic agent leads either to the absence of migration or to incomplete caudal migration of the Müllerian ducts towards the urogenital sinus, which will result in complete or incomplete atresias and/or aplasias of the uterus, or to a failure of fusion of the Müllerian ducts, which will be responsible for uterine duplication such as a bicornuate uterus and a didelphys uterus, and finally, to a failure of resorption of the inter-Müllerianseptum, responsible for a septate uterus [1,4].

The classifications of uterine malformations are: that of Muset from 1964 (the most used in France), that of the American Fertility Society (AFS) (the most reported in the literature), and that of the European Society for Gynaecological Endoscopy (ESHRE/ESGE). This last one takes into account the anomalies of the body of the uterus, the cervix, and the inner third of the vagina [5].

The specific aetiology of uterine malformations remains cryptogenic. However, we can mention some contributing factors, such as genetic factors, the use of teratogenic substances, and ionising radiation during embryogenesis [6].

About 50% of uterine malformations will remain asymptomatic during a pregnancy. For others, the uterine malformation will be a source of high-risk pregnancy and obstetrical complications. The problem in this case is not one of conception but rather of carrying the pregnancy to term. And it is due to a reduced uterine cavity, less effective musculature, an inability to distend, myometrial and cervical dysfunction, inadequate vascularization, and a poorly developed endometrium. Hence the rates of repeated abortions, premature births, abnormal presentations, intrauterine growth retardation, and caesarean sections. Imaging is essential for confirming the diagnosis [7,8].

Before pregnancy, the management of uterine malformations involves surgery, if indicated and feasible. For a septate uterus, a resection of the septum is performed. For unicervical or bicervical bicornuate uteri, a surgery to unify the two hemi-uteruses can be performed using the Strassmann technique. For the unicornuate uterus with a rudimentary contralateral horn, resection of the rudimentary horn when the endometrium is present is recommended to reduce the risk of rupture of the blind hemi-uterus. In cases of agenesis, the creation of a neovagina should be proposed [9,10]. During pregnancy, when a diagnosis of a malformation is made, the treatment will be preventive, including rest, lung maturation, ultrasound monitoring of foetal growth, and cervical competence. Cerclage is only necessary in cases of proven cervical incompetence (9).

The presentation of these clinical cases of uterine malformations discovered incidentally during emergency caesarean sections in the North-East of the Democratic Republic of Congo is, to our knowledge, a first. She provided data in a field where there is little available, thus serving as a source of motivation and a point of reference in the management of gynaecological and obstetrical cases. However, this presentation is a specific case that cannot allow for generalisation. Thus, a larger study on aspects such as epidemiology, clinical presentation, management, and outcomes could provide significant data on this topic.

Conclusion

Uterine malformations exist, although they are rare in the eastern part of the Democratic Republic of Congo. The diagnosis should be considered for any woman at risk, particularly those with obstetric complications such as recurrent early miscarriages, preterm births, abnormal presentations, and postpartum haemorrhage. Medical imaging is essential for diagnosis and appropriate management.

Ethics approval and consent to participate

The study was carried out in accordance with relevant guidelines and regulations as per Helsinki declaration. The ethical clearance was not mandatory. Informed written consent was obtained from each study participants before starting data collection. Adequate information was provided to the study participant. The information entailed the purpose of the study significance, methods of the study and all the information in the informed consent. A written copy of the informed consent in French was obtained. Their right to refuse or not to participate in the study at any time they want was assured.

Consent for publication

Informed consent was obtained from the patient for publication of this clinical case and all images. A written copy of the informed consent is available to the editor-in-chief of the journal.

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