

CASE REPORT

PEER REVIEWED | OPEN ACCESS

Management of bicornuate uterus non-communicating rudimentary uterine horn: A case report

Felix Sierra, Friederike von Gehren, Stephan Spahn,
Ines Nowraty, Ioannis Kyvernitakis, Franz Bahlmann

ABSTRACT

A pregnancy in a non-communicant rudimentary horn is a rare but serious complication. Patients with bicornuate uterus non-communicating have an increased risk of obstetrical complications, such as abortion, intrauterine growth restriction, and fetal demise. Uterus bicornuate non-communicant rudimentary horn (UBNCRH) is a rare malformation of the uterus. The presence of uterus bicornuate non-communicant rudimentary horn poses a great challenge for a gynecologist because that occurs due to the transperitoneal migration of the sperm or the zygote during the implantation period and the Muellerian anomalies are often asymptomatic. We report a case of 28-year-old female with a twin dichorionic diamniotic pregnancy with pain and vaginal bleeding in the 16 weeks of gestation with a UBNCRH.

Keywords: Cesarean parva, Muellerian duct abnormality type IIB, Uterus bicornuate non-communicant rudimentary horn

How to cite this article

Sierra F, von Gehren F, Spahn S, Nowraty I, Kyvernitakis I, Bahlmann F. Management of bicornuate uterus non-communicating rudimentary uterine horn: A case report. J Case Rep Images Obstet Gynecol 2021;7: 100073Z08FS2021.

Article ID: 100073Z08FS2021

doi: 10.5348/100073Z08FS2021CR

INTRODUCTION

Uterus bicornuate non-communicant rudimentary horn (UBNCRH) is a rare malformation of the uterus (Muellerian duct abnormality type IIB of the American Fertility Society classification) [1]. These anomalies are most typically described as de novo congenital occurrences and are often asymptomatic. A pregnancy in the UBNCRH corresponds to the clinical picture of an ectopic pregnancy. Thus, many complications that may affect the woman and the fetus are an indication of the importance of an early diagnosis of Muellerian anomalies. Often the endometrium in the rudimentary horn is not mature for pregnancy. The decidua is described as thinner, which means that the villi often penetrate the myometrium and erode the wall. A pregnancy in the UBNCRH is a rare form of gestation that occurs due to the transperitoneal migration of the sperm or the zygote during the implantation period. Its incidence is of approximately 1/100,000 to 1/140,000 pregnancies [2]. 75–80% of pregnancies occur in the non-communicant rudimentary horn and is often associated with ectopic pregnancies [3]. The risk of uterine rupture is up to 90% and occur by the end of the second trimester [4]. The maternal and fetal prognosis in unrecognized rudimentary horn ectopic pregnancies is poor, with an average neonatal survival rate of 6% and the rate of uterine rupture close to 80%

Felix Sierra¹, Friederike von Gehren², Stephan Spahn¹, Ines Nowraty¹, Ioannis Kyvernitakis², Franz Bahlmann¹

Affiliations: ¹Department of Obstetrics and Gynecology, Centre for Ultrasound and Prenatal Medicine, Buergerhospital and Clementine Kinderhospital, Nibelungenallee 37-41, 60318 Frankfurt am Main, Germany; ²Department of Obstetrics and Perinatal Medicine, Asklepios Hospital Bamberk, Rübenkamp 220, 22307 Hamburg, Germany.

Corresponding Author: Dr. Felix Sierra, Department of Obstetrics and Gynecology, Centre for Ultrasound and Prenatal Medicine, Buergerhospital and Clementine Children's Hospital, Frankfurt am Main, Germany; Email: f.sierra@buergerhospital-ffm.de

Received: 27 August 2020

Accepted: 16 December 2021

Published: 19 February 2021

[5]. Due to the difficult diagnosis of an UBNCRH, it often only shows up with a rupture of the rudimentary horn.

CASE REPORT

A 28-year-old woman, gravida 2, para 1 conceived a twin dichorionic diamniotic pregnancy and presented in the 16th week of gestation with an imminent aborting (IUDF) after a spontaneous partus 2014. There were no previous illnesses or previous operations. The patient had spotting for several days, as well as recurrent pain with vaginal bleeding. Ultrasound showed negative heartbeat for both fetuses. On admission, the abdomen was soft, without any defensive tension. The transvaginal sonography showed an intrauterine twin pregnancy without recognizing the uterine abnormality (Figure 1).

A crest length of 74 and 52 mm was measured. No heart action was found in either of the fetuses. The Douglas space was free of fluid. After informed consent the patient opted for termination of pregnancy by Cytotec (off-label use) and Nadalor. (Misoprostol 50 µg every 6 hours a maximum of 6 dose. One ampoule of Nalador 50 µg/hour, maximum dose 8.3 µg/min). After four days of unsuccessful induction of labor, we opted for operative termination by curettage and hereby, a uterus bicornus with cornus rudimentarius was suspected. Vaginal access to the right uterine horn could not be achieved. The dilation using Hegar pencils under sonography control was only possible in the left empty uterine horn. The access to the right horn, in which the pregnancy was located, could not be found with a uterine probe. After unsuccessful attempt at uterine dilation, a cesarean section parva was indicated. The situs presented a uterus with two separate parts of the body, which connected into a common cervix (Figure 2). The tubes each separated into a horn. The left uterus was small and inconspicuous, the right uterus distended up to the tube outlet with a conspicuous vascular pattern of the serosa. An incision was made on



Figure 2: An intraoperative visualization of a bicornuate uterus with pregnancy development in the right horn that does not communicate with the vagina. The left rudimentary horn is empty.

the front wall and both fetuses and placenta parts were removed. No internal cervix or access to the cervix could be visualized or palpated. Overall, a bicornuate uterus with unilateral right horn atresia was assumed, in which the pregnancy was caused by sperm migration through the abdominal cavity through the contralateral tube. Resection of the obliterated horn, or at least the right tube, was recommended to avoid recurrence.

DISCUSSION

Muellerian duct anomalies are generally rare and often associated with increase perinatal morbidity and mortality. These abnormalities occur in 0.1–3% of women and are often associated with reproductive problems such as miscarriages, premature labor, premature diaphragm rupture, or misrepresentation [6–8]. Early diagnosis is difficult, which is why pregnancy in a rudimentary horn is often only revealed by rupture of the rudimentary horn [2]. The time of rupture varies between the 5th and 35th week of gestation, depending on the strength of the myometrium. Pregnancy in a rudimentary horn has a poor reproductive potential and requires close monitoring. In asymptomatic women, the presence of bicornuate uterus may not be detected until during pregnancy or delivery [8, 9]. The sensitivity of sonography reaches approximately up to 26%. Obstetrical outcomes are generally reported to be better in cases of bicornuate uterus in comparison to unicornuate uterus [6]. Ultrasound in early pregnancy has a major rule in the early diagnosis. Magnetic resonance imaging (MRI) can be a useful noninvasive diagnostic tool [10]. The wide reported range of the incidence of rudimentary horn pregnancies reflects the rarity of the condition [11–13]. Only 14% of cases are diagnosed prior to clinical manifestation, usually in the



Figure 1: The ultrasound figure shows a twin pregnancy without recognizing bicornuate uterus but demised twins.

second trimester [14, 15] because rudimentary horns are frequently not diagnosed prior to pregnancy [15]. The low diagnostic suspicion may be attributed to the absence of clinical symptoms in pregnancy. When symptoms such as retrograde menstruation, abdominal pain, dysmenorrhea and fertility are present, a non-rudimentary horn can be suspect. Transvaginal sonography, although the method to investigate adnexal pathology, has a low sensitivity (26–33%) for the diagnosis of a rudimentary horn even before pregnancy. Three-dimensional ultrasound and pelvic MRI scan have become standard imaging modalities for the characterization of Mullerian anomalies. In the case of a pregnancy with a rudimentary horn, the standard treatment is to end the pregnancy immediately due to the high risk of rupture [11, 14, 15].

CONCLUSION

The presence of uterus bicornuate non-communicant rudimentary horn poses a great challenge for a gynecologist because that occurs due to the transperitoneal migration of the sperm or the zygote during the implantation period and the Mullerian anomalies are often asymptomatic.

REFERENCES

1. The American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, Müllerian anomalies and intrauterine adhesion. *Fertil Steril* 1988;49(6):944–55.
2. Goel P, Aggarwal A, Devi K, Takkar N, Saha PK, Huria A. Unicornuate uterus with non-communicating rudimentary horn – different clinical presentations. *J Obstet Gynaecol India* 2005;55(2):155–8.
3. Thakur S, Sood A, Sharma C. Ruptured noncommunicating rudimentary horn pregnancy at 19 weeks with previous cesarean delivery. A case report. *Case Rep Obstet Gynecol* 2012;2012:308476.
4. Rackow BW, Arici A. Reproductive performance of women with Müllerian anomalies. *Curr Opin Obstet Gynecol* 2007;19(3):229–37.
5. Brady PC, Molina RL, Muto MG, Stapp B, Srouji SS. Diagnosis and management of a heterotopic pregnancy and ruptured rudimentary uterine horn. *Fertil Res Pract* 2018;4:6.
6. Chan YY, Jayaprakasan K, Tan A, Thronton JG, Coomarasamy A, Raine-Fenning NJ. Reproductive outcome in women with congenital uterine anomalies: A systemic review. *Ultrasound Obstet Gynecol* 2011;38(4):371–82.
7. Jayasinghe Y, Rane A, Stalewski H, Grover S. The presentation and early diagnosis of the rudimentary uterine horn. *Obstet Gynecol* 2005;105(6):1456–67.
8. Singh N, Singh U, Verma ML. Rupture bicornuate uterus mimicking ectopic pregnancy: A case report. *J Obstet Gynecol Res* 2013;39(1):364–6.
9. Tsafirir A, Rojansky N, Sela HY, Gomori JM, Ndjari M. Rudimentary horn pregnancy: First-trimester

prerupture sonographic diagnosis and confirmation by magnetic resonance imaging. *J Ultrasound Med* 2005;24(2):219–23.

10. Kaveh M, Kashi AM, Sadegi K, Forghani F. Pregnancy in non-communicating rudimentary horn of a unicornuate uterus. *Int J Fertil Steril* 2018;11(4):31–20.
11. Lennox G, Pantazi S, Keunen J, Van Mieghem T, Allen L. Minimally invasive surgical management of a second trimester pregnancy in a rudimentary uterine horn. *J Obstet Gynaecol Can* 2013;35(5):468–72.
12. Siwatch S, Mehra R, Pandher DK, Huria A. Rudimentary horn pregnancy: A 10-year experience and review of literature. *Arch Gynecol Obstet* 2013;287(4):687–95.
13. de Souza CS, Dorneles GG, Mendonça GN, Santos CMD, Gallarreta FMP, Konopka CK. Pregnancy in non-communicating unicornuate uterus: Diagnosis difficulty and outcomes – A case report. *Rev Bras Ginecol Obstet* 2017;39(11):640–44.
14. Yassin A, Munaza S, Mohammed A. Tale of rudimentary horn pregnancy: Case report and literature review. *J Matern Fetal Neonatal Med* 2019;32(4):671–6.
15. Edelman AB, Jensen JT, Lee DM, Nichols MD. Successful medical abortion of a pregnancy within a noncommunicating rudimentary uterine horn. *Am J Obstet Gynecol* 2003;189(3):886–7.

Acknowledgments

The authors would like to thank the patient for the consent to publish this case.

Author Contributions

Felix Sierra – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Friederike von Gehren – Acquisition of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Stephan Spahn – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ines Nowraty – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related

to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ioannis Kyvernitakis – Acquisition of data, Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Franz Bahlmann – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

Copyright

© 2021 Felix Sierra et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

Access full text article on
other devices



Access PDF of article on
other devices





INTERNATIONAL JOURNAL OF
CASE REPORTS AND IMAGES



VIDEO JOURNAL OF
CLINICAL RESEARCH



VIDEO JOURNAL OF
BIOMEDICAL SCIENCE



INTERNATIONAL JOURNAL OF
HEPATOBIILIARY AND
PANCREATIC DISEASES



INTERNATIONAL JOURNAL OF
BLOOD TRANSFUSION AND
IMMUNOHEMATOLOGY



EDORIUM JOURNAL OF
OPHTHALMOLOGY



Submit your manuscripts at
www.edoriumjournals.com



EDORIUM JOURNAL OF
MEDICINE



EDORIUM JOURNAL OF
CARDIOTHORACIC AND
VASCULAR SURGERY



JOURNAL OF CASE REPORTS
AND IMAGES IN ORTHOPEDICS
AND RHEUMATOLOGY



EDORIUM JOURNAL OF
PSYCHOLOGY



EDORIUM JOURNAL OF
CELL BIOLOGY



JOURNAL OF CASE REPORTS AND IMAGES IN
DENTISTRY



EDORIUM JOURNAL OF
CANCER



EDORIUM JOURNAL OF
PSYCHIATRY



JOURNAL OF CASE REPORTS AND
IMAGES IN INFECTIOUS DISEASES



EDORIUM JOURNAL OF
ANATOMY AND EMBRYOLOGY



EDORIUM JOURNAL OF
SURGERY



JOURNAL OF CASE REPORTS
AND IMAGES IN PATHOLOGY



EDORIUM JOURNAL OF
ANESTHESIA