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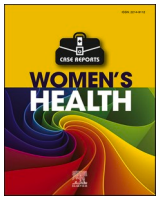

Intact non-communicating rudimentary horn pregnancy in a patient with a history of two cesarean sections: A case report

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ABSTRACT

This article reports a case of an unruptured rudimentary horn viable pregnancy at 18 weeks of gestation. The diagnosis was missed at two previous cesarean sections and on a second-trimester ultrasound scan of the index pregnancy. The condition is extremely rare, life-threatening and difficult to diagnose. This case report highlights the importance of checking the anatomy of the uterus and appendages during cesarean section.

1. Introduction

Unicornuate uterus with a rudimentary horn is a type of Müllerian duct malformation that results from complete or incomplete arrested development of one of the Müllerian ducts [1]. This rudimentary horn may or may not have a functional cavity [2,3] which does not communicate with the main cavity of the unicornuate uterus in more than 90% of cases [4]. Pregnancy in a non-communicating rudimentary horn is extremely rare, occurring in approximately 1:100,000–1:140,000 pregnancies [5]. Pregnancy occurs through transperitoneal migration of the spermatozoa [1,6]. Pregnancy in a rudimentary horn of the bicornuate uterus was first reported by Mauriceau, in 1669 [7]. The usual fate of such a pregnancy is a rupture in the second or early third trimester [8]. Latto described the first case of a ruptured rudimentary horn pregnancy treated by laparotomy in 1950 [9]. Since that time, many cases have been reported in the literature, with the timing of rupture varying from 5 to 35 weeks [1,6,10,11]. Fifty percent of the pregnancies rupture in the second trimester, while 30% go to term with a 0%–13% fetal salvage rate [12]. Those patients present with features of uterine rupture and are usually severely compromised [6,12], and have a mortality rate of 5% [13]. This is a case report of the intraoperative discovery of a pregnancy in a rudimentary horn, which was diagnosed on ultrasound as an extrauterine pregnancy.

2. Case Presentation

A 25-year-old woman, gravida three, had had two deliveries by elective cesarean section. She came for a routine antenatal care visit at the 18th week of gestation. Her pregnancy had been uneventful. She did not have any other significant medical or surgical history. A routine ultrasound scan showed a single viable extrauterine fetus to the right of the uterus. The crown-rump length was 120 mm, and femur length 27.2 mm, equivalent to 18 weeks of gestation. No gestational sac or fetal parts were seen within the uterine cavity. At that point, advanced ectopic pregnancy was diagnosed. She was advised to have the pregnancy terminated.

At laparotomy, the pregnancy was found in the right rudimentary horn, with a normal-looking right Fallopian tube and ovary. The horn was connected to the unicornuate uterus by a fibromuscular band [Fig. 1]. There was no communication through the fibrous band to the cavity of the unicornuate uterus. The unicornuate uterus with the left tube and ovary were normal. The lower segment scar of the previous cesarean sections was seen in the unicornuate uterus. The right horn and the corresponding Fallopian tube were removed [Fig. 2]. The right ovary was left intact. There was no intraoperative bleeding. The sac was found to contain a male fetus weighing 320 grams, with the placenta attached to the lower part of the sac. The patient had an uneventful recovery and was discharged on the second postoperative day.

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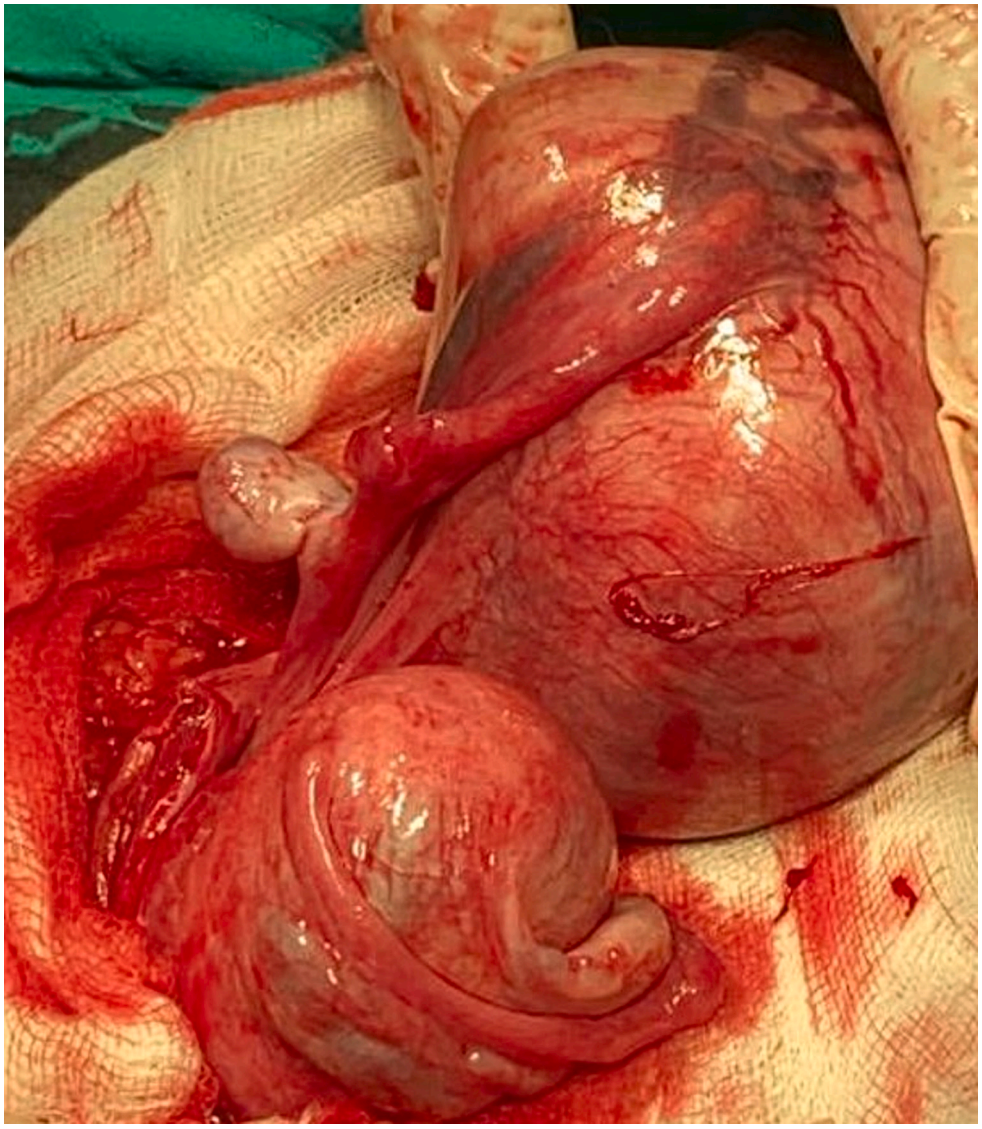

Fig. 1. Intra-operative photo of the right intact rudimentary horn of the unicornuate uterus.

3. Discussion

A case of a viable fetus in a non-communicating rudimentary horn of a unicornuate uterus in the second trimester of pregnancy is reported. The diagnosis was missed at two cesarean deliveries and on an ultrasound scan in the index pregnancy. Diagnosis requires a high index of suspicion. It could be easily missed during routine ante-natal ultrasound scanning as the sensitivity of ultrasound is 26% [14]. In developing countries, obtaining an early diagnosis of a rudimentary horn pregnancy can be more difficult as ultrasound services are unavailable or, when available, interpreted by healthcare workers who are not trained to identify rare uterine malformations [12]. The ultrasonographic criteria for diagnosis of the rudimentary horn were described by Tsafrir et al. as a pseudo-pattern of asymmetrical bicornuate uterus, absent visual continuity tissue, and the presence of myometrium surrounding the gestation sac and the cervix [15].

This report highlights the importance of checking and documenting the anatomy of the uterus and appendages during cesarean section [16]. In many developing countries, especially in remote hospitals, where cesarean sections may be undertaken by inexperienced operators, pelvic anatomy may not be checked [13]. Cases of pregnancy in rudimentary horns in patients with previous cesarean section deliveries from developing countries have been reported [17]. Thus there needs to be awareness of this rare condition [18]. The Royal College of Obstetricians and Gynaecologists (RCOG) has provided advice about consent for caesarean cesarean section [19]. All surgical care providers and their respective institutions are recommended to improve patient safety by using the World Health Organization (WHO) surgical safety checklist [20].

4. Conclusion

A unicornuate uterus with a non-communicating rudimentary horn is a rare condition that is difficult to diagnose, and can easily be missed. This case report highlights the importance of checking the anatomy of the uterus and appendages during cesarean section.

Contributors

Abdalla Ali Mohammed contributed to the conception of the case report and patient care, drafted the manuscript, undertook the literature review, and revised the article critically for important intellectual content.

Ahmed Ibrahim Abdelfattah contributed to patient care and the

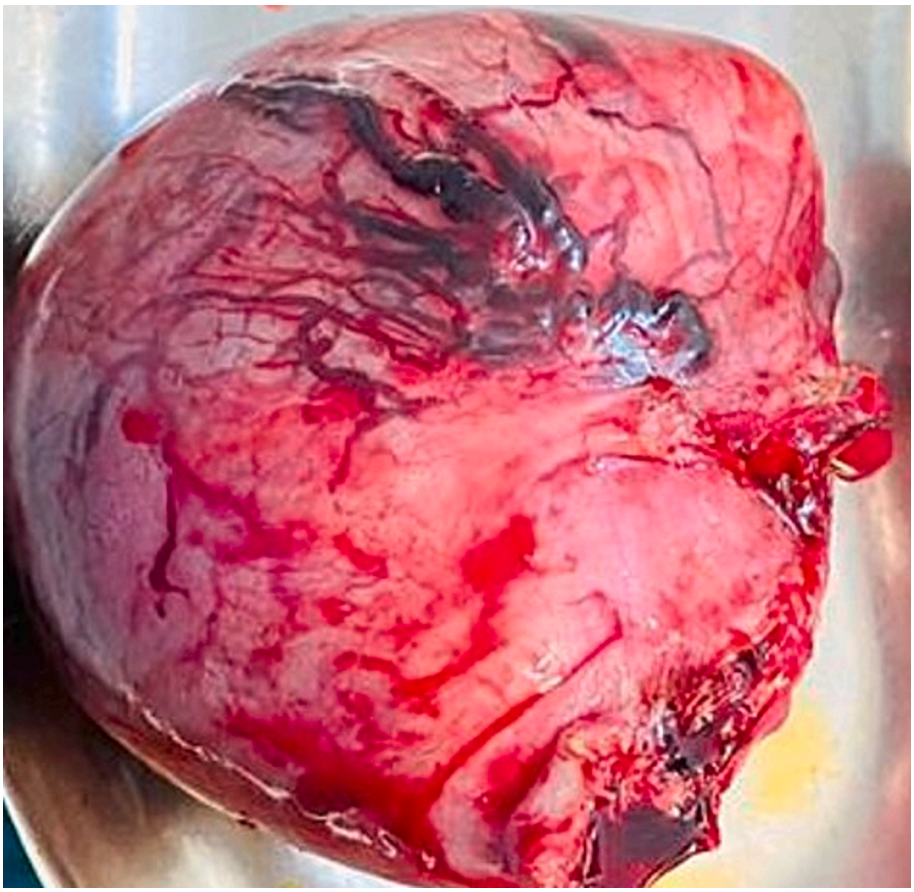

Fig. 2. The resected rudimentary horn.

literature review, and revised the article critically for important intellectual content.

Mohammed Mahgoub Ali contributed to patient care and the literature review, and revised the article critically for important intellectual content.

Lodan Abdelrahman Elmubarak contributed to patient care and the literature review, and revised the article critically for important intellectual content.

All authors approved the final submitted manuscript.

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Patient consent

Written informed consent was obtained from the patient for publication of the case report and accompanying images.

Provenance and peer review

This article was not commissioned and was peer reviewed.

Conflict of interest statement

The authors declare that they have no conflict of interest regarding the publication of this case report.

References

[1] Rudimentary horn pregnancy - PubMed (nih.gov) Lai YJ, Lin CH, Hou WC, Hwang KS, Yu MH, Su HY. Pregnancy in a noncommunicating rudimentary horn of a unicornuate uterus: Prerupture diagnosis and management.Taiwan. J Obstet Gynecol. 2016; 55(4):604–6. Pregnancy in Non-Communicating Rudimentary Horn of A Unicornuate Uterus (nih.gov).

[2] D. Caserta, M. Mallozzi, C. Meldolesi, P. Bianchi, Moscarini M Pregnancy in a unicornuate uterus: a case report, J. Med. Case Rep. 80 (2014) 130. Pregnancy in a unicornuate uterus: a case report (nih.gov).

[3] Y. Jayasinghe, A. Rane, H. Stalewski, S. Grover, The presentation and early diagnosis of the rudimentary uterine horn, Obstet. Gynecol. 105 (2005) 1456–1467. The presentation and early diagnosis of the rudimentary uterine horn - PubMed (nih.gov).

[4] G.G. Nahum, Rudimentary uterine horn pregnancy. The 20th-century worldwide experience of 588 cases, J. Reprod. Med. 47 (2002) 151–163. Rudimentary uterine horn pregnancy. The 20th-century worldwide experience of 588 cases - PubMed (nih.gov).

[5] D.D. Zhang, Y. Gao, J.H. Lang, L. Zhu, Diagnosis and treatment of rudimentary horn pregnancy: analysis of eleven cases, Chin. Med. J. 131 (24) (2018) 3012–3014. Zhu L. Diagnosis and Treatment of Rudimentary Horn Pregnancy: Analysis of Eleven Cases. Chin Med J (Engl) 2018; 131 (24) 3012–3014, https://doi.org/10.4103/0366-6999.247200.

[6] G.G. Nahum, H. Stanislaw, C. McMahon, Preventing ectopic pregnancies. How often does intraperitoneal transmigration of sperm occur in effecting human pregnancy? Br. J. Obstet. Gynaecol. 111 (2004) 706–714. https://pubmed.ncbi.nlm.nih.gov/15198762.

[7] F. Mauriceau, Traite des maladaies des femmes grosses, in: F. Mauriceau (Ed.), A Book, 1st ed., Compaigne des libraries, Paris, France, 1721. In French, https://www.abebooks.co.uk/book-search/title/des-maladies-desfemmes-grosses-et-accouchees/author/mauriceau/.

[8] C.H.C. Hassan, A. Kadir, A. Karim, N.A.M. Ismail, M.H. Omar, Case report of ruptured non-communicating right rudimentary horn pregnancy: an acute emergency, Acta Med. Austriaca 54 (3) (2011) 125–126. https://pubmed.ncbi.nlm.nih.gov/22250483/.

[9] D. Latto, R. Norman, Pregnancy in a rudimentary horn of a bicornuate uterus, Br. Med. J. 2 (4685) (1950 Oct 21) 926–927. https://pubmed.ncbi.nlm.nih.gov/14772521/.

[10] M. Ahuja, R. Srivastava, S. Jamal, Pregnancy in the rudimentary horn - the culprit behind a catastrophic outcome, New Ind. J. Obgyn. 6 (1) (2019) 71–73. https://journal.barpetaogs.co.in/pdf/0671.pdf.
[11] M. Kurabachew, B. Tufa, T. Gashaw, K. Kibru, G. Dereje, Rudimentary Horn Pregnancy Diagnosed after Laparotomy. Case Reports in Obstetrics and Gynecology, 2020; Article ID 5816487, 3 pages, 2023, https://doi.org/10.1155/2020/5816487. https://downloads.hindawi.com/journals/criog/2020/5816487.pdf.
[12] H. Nathan, A. Sornum, Diagnosis and management of a ruptured rudimentary horn pregnancy in a low-resource setting, BMJ Case Rep. (2013). PMC3702986, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3702986/, https://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC3702986&blobtype=pdf.
[13] L.M. Hill, D.J. Connors-Beatty, A. Nowak, B. Tush, The role of ultrasonography in the detection and management of adnexal masses during the second and third trimesters of pregnancy, Am. J. Obstet. Gynecol. 179 (1998) 703–707. https://pubmed.ncbi.nlm.nih.gov/9757975/.
[14] Y. Jayasinghe, A. Rane, H. Stalewski, S. Grover, The presentation and early diagnosis of the rudimentary uterine horn, Obstet. Gynecol. 105 (2005) 1456–1467. The presentation and early diagnosis of the rudimentary uterine horn - PubMed (nih.gov).
[15] A. Tsafrir, N. Rojansky, H.Y. Sela, J.M. Gomori, M. Nadjari, Rudimentary horn pregnancy: first trimester prerupture sonographic diagnosis and confirmation by magnetic resonance imaging, J. Ultrasound Med. (2) (2005) 219–223.
[16] V. Ulker, A. Gedikbasi, C. Numanoglu, S. Saygı, H. Aslan, A. Gulkilik, Incidental adnexal masses at caesarean section and review of the literature, J. Obstet. Gynaecol. Res. 36 (2010) 502–505. https://pubmed.ncbi.nlm.nih.gov/20598028/.
[17] R. Hooda, K. Agarwal, D. Sirohiwal, P. Bishnoi, Ruptured rudimentary horn pregnancy masquerading as caesarean scar rupture in third trimester, Med. J. Dr. D.Y. Patil Vidyapeeth 11 (3) (2018) 261–263. https://www.mjdrdypv.org/article.asp?issn=2589-8302;year=2018;volume=11;issue=3;spage=261;epage=263;aulast=Hooda.
[18] A. Elif, P. Nurullah, Y. Mustafa, M.F. Fatih, S.E. Mehmet, G. Talip, Rudimentary horn pregnancy — ten years of experience, Ginekol. Pol. 91 (3) (2020) 117–122. https://journals.viamedica.pl/ginekologia_polska/article/view/66545.
[19] RCOG, Obtaining Valid Consent (Clinical Governance Advice No. 6). https://www.rcog.org.uk/guidance/browse-all-guidance/clinical-governance-advice/obtaining-valid-consent-clinical-governance-advice-no-6/, 2015.
[20] WHO, The WHO Surgical Safety Checklist World Health Organization. https://www.who.int/teams/integrated-health-services/patient-safety/research/safe-surgery/tool-and-resources, 2009.