



An incidental finding of a unicornuate uterus with non-communicating rudimentary horn in a 30-year-old female with recurrent abortion

Sule MB¹, Sa'idu SA¹, Ma'aji SM¹, Danfulani M¹, Yunusa GH¹, Umar AU², Gele IH^{1,*}

¹ Radiology Department, Usmanu Danfodiyo University, Sokoto, Nigeria.

² Radiology Department, Gombe State University, Gombe

*Corresponding author Email: muhammadsule@yahoo.com

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Abstract: Unicornuate uterus is a form of uterine anomalies which arise from failure of development and fusion of the Mullerian ducts, and accounts for about 2.4-13% of all Mullerian anomalies. This is a 30-year-old housewife referred for hysterosalpingography (HSG) on account of secondary infertility. The patient also had history of recurrent abortion in the first trimester. The HSG showed an ellipsoidal or Banana shaped uterus in the left lateral pelvic cavity with prominent left fallopian tube that showed peri-fimbrial spillage of contrast medium with non-demonstration of a communicating rudimentary horn. She also had a pelvic ultrasound that showed an empty uterus with a right hypoechoic solid area most likely the right rudimentary horn. We report the radiologic features of Unicornuate uterus due to its rare nature and peculiar presentation.

Keywords: Unicornuate, Female, Hysterosalpingography, Anomaly.

KEY LEARNING POINTS

1. Unicornuate uterus belongs to fusion anomalies of the Mullerian ducts and are very rare accounting about 2.4-13% of all Mullerian anomalies.
2. Unicornuate uterus often has an accompanying rudimentary horn which may either be communicating or non-communicating, these determine the outcome and associated complications.
3. Unicornuate uterus should be suspected in women complaining of gynecological symptoms most of which are dysmenorrhea, recurrent abortions especially towards the end of the second trimester, preterm labor and uterine rupture.
4. Non-invasive imaging which are basically ultrasonography, hysterosalpingography (HSG) and magnetic resonance imaging are vital in the diagnosis of a Unicornuate uterus and other uterine anomalies.
5. The classical appearance of a laterally deviated banana shaped uterus terminating superiorly as a single fallopian tube are the features demonstrated following HSG. Communication with a rudimentary horn is also demonstrated following HSG.
6. Laparoscopic management of uncomplicated cases of Unicornuate uterus is the main treatment. Complicated cases as in ectopic gestation occurring in the rudimentary horn require laparotomy.

1. Introduction

This is a failure of one of the Mullerian ducts to elongate or reach the urogenital sinus during the 9th week of gestation. It is classified as being with or without a contralateral rudimentary horn [1]. This has an incidence of 3-6-20% of uterine anomalies which may be associated with infertility in 5-20% [2]. A unicornuate uterus is a form of uterine anomalies that arise from the failure to develop and fuse the Mullerian ducts. It is classified as type II by the American Society for Reproductive Medicine Classification of uterine anomalies [3-5].

The unicornuate uterus has varying appearances which are either; a: Reduced uterine volume, b: Asymmetric ellipsoidal uterine configuration located in lateral aspect of pelvis and c: Solitary fusiform banana shaped uterine cavity with lateral deviation within the pelvis terminating in a single fallopian tube on hysterosalpingography (HSG) [1,2].



Uterine anomalies are collectively rare and most times asymptomatic, but when present, are often responsible for causing complications like recurrent abortions, malpresentation, preterm labor, uterine rupture and menstrual disturbances [3].

A unicornuate uterus is further classified into communicating, no cavity, and no horn. The rudimentary horn in most cases is noncommunicating and often has a cavity, pregnancy in this horn is usually very rare and usually complicated by rupture of the uterus most times towards the end of the second trimester [3, 4, 6].

This malformation is usually associated with various complications throughout a female's reproductive life, most times from onset of menarche following hormonal stimulation, causing endometrial activation of the rudimentary horn [7]. In the unicornuate uterus, pregnancy occurring in the noncommunicating rudimentary horn is often regarded as a rare form of ectopic gestation and the incidence is estimated between 1/100000 to 1/140000 [7-9]. Pregnancies occurring in the semi-uterus of this malformation are usually associated with an increased incidence of abortion, preterm labor and malpresentation with an increased incidence of cesarean deliveries [7,10,11].

Women with uterine anomalies, especially the Unicornuate type, often have associated congenital anomalies, the renal anomaly is reported in about 40% of the cases [7]. The Unicornuate uterus is detected most times following imaging, which are hysterosalpingography (HSG), ultrasonography and magnetic resonance imaging [7]. Following HSG, the uterus is deviated laterally and appear as a banana shaped structure with a single fallopian tube [7].

Unicornuate uterus with rudimentary horn has been treated by laparoscopic management, laparotomy in case of complications like ectopic pregnancy, hysteroscopy for separation of the two horns and the use of automatic endoscopic staplers instead of diathermy [12-14].

2. Aim

To present the imaging features of Unicornuate uterus with a non-communicating rudimentary horn following HSG and ultrasonography.

3. Case Description

A 30-year-old with a history of four miscarriages (P0+4) was referred to our department

(radiology) for HSG on account of secondary infertility. She attained menarche at 17 years with a menstrual flow of about 4-5 days in every 30 days associated with dysmenorrhea. No history of heavy menstruation or dyspareunia.

She has a height of about 175cm with an estimated body weight of about 75kg. Her blood pressure is 110/60 mmHg. The patient is not in any form of respiratory difficulty. She is conscious and alert, not pale or dehydrated.

The HSG done revealed a contrast opacified diminished sized uterine cavity with a banana appearance and deviated to the pelvic cavity's left lateral aspect. The uterus terminated into a single fallopian tube, which showed minimal dilatation in keeping with a hydrosalpinx. Loculated collection of contrast medium with intravasation of contrast into the pelvic vessels was also demonstrated. No communication with the rudimentary horn was shown. See figure 1.



Figure 1 Hysterosalpingogram showing a left laterally deviated banana shaped uterus with a single cornua and a left fallopian tube that show some prominence most likely hydrosalpinx with spillage of contrast medium and intravasation of contrast into pelvic vessels. No communication with the rudimentary horn is demonstrated.

Pelvic ultrasonography revealed a normal sized uterus with an antero-posterior diameter of about 3cm. There is a hypochoic area adherent to the fundal and



right-lateral aspect of the uterus, most likely a rudimentary horn labeled as POD collection in figure 2.



Figure 2 Transabdominal pelvic ultrasonogram showing a uterus (UT) that is normal sized and empty with a solid component in the POD most likely the right rudimentary horn (Labelled POD COLL) and a urinary bladder (UB). No gestational sac demonstrated currently.

A scout abdominal ultrasonography showed normal abdominal situs with normally positioned kidneys bilaterally and a well outlined normal wall urinary bladder.

A diagnosis of a Unicornuate uterus with a non-communicating right rudimentary horn was established. The examination findings were given to the patient for onward submission to the referring physician at the primary health facility.

The physician was advised on possible consideration of the case's referral to a higher centre for definite and better management, however, no further information was obtained following her discharge from the radiology department.

4. Discussion

A Unicornuate uterus (UU) is a type II classification with unilateral hypoplasia or agenesis that can be further subclassified into communicating, no cavity, and no horn [15-18]. This index case showed a rudimentary horn that showed no communication with the uterine cavity. Non-communicating rudimentary horn is further classified to group II-b by the American Society of Reproductive Medicine [1,7].

Uterine anomalies are collectively rare and, most times asymptomatic. Still, when present, they are often responsible for causing complications like recurrent abortions [3], the index case was also asymptomatic till she had four episodes of abortion that prompted the clinical evaluation and subsequent diagnosis, thereby conforming to this literature.

There is often a history of miscarriages and infertility as reported in some literatures [7, 10, 11]; the index case had secondary infertility with four abortions, usually in the first trimester of every pregnancy. The Unicornuate uterus is detected most times following imaging, which are hysterosalpingography (HSG), ultrasonography and magnetic resonance imaging [7]. The index case was diagnosed following HSG and pelvic ultrasonography, conforming to this literature.

The classic HSG finding is usually a uterus that is deviated laterally and appears as a banana shaped structure with a single fallopian tube [7], the same result was also demonstrated in this patient following HSG conforming to this literature.

Pelvic ultrasonography often shows a small-sized uterus termed a semi-uterus [7] with an accompanying solid hypoechoic rudimentary horn as reported in the literature; the index case also had similar findings, thereby conforming to that reported in the literature. Women with uterine anomalies, especially the Unicornuate type, often do have associated congenital anomalies. The renal anomaly is reported in about 40% of the cases [7]. The index case had no form of congenital anomaly invariance to this literature.

In the unicornuate uterus, pregnancy occurring in noncommunicating rudimentary horn is often regarded as a rare form of ectopic gestation [7-9]. The index case had no history of ectopic gestation. The treatment is often laparoscopic surgery to remove a non-communicating rudimentary horn that results in abdominal pain due to the inability of menstrual blood to flow to the main uterus and specialized care during pregnancy/delivery to reduce the risk of complications, including preterm delivery, miscarriages, or breech birth as reported in some literatures [12-14]. The index case, however, never got such care. The referring physician was advised on patient referral to higher centers for the appropriate management.



5. Conclusion

Patients presenting with recurrent abortions and other associated gynecological complaints should have basic imaging like pelvic ultrasonography and hysterosalpingography to rule out uterine anomalies thereby reducing the chances/rates of complications associated with such anomalies.

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Authors Contribution

Data collection, analysis and preparation of initial draft (SSA, MSM, DM, YGH, UAU & GIH); Designing the study, data collection, analysis, preparation and finalising the manuscript (SMB).

Data sharing statement

No additional data are available

Ethics Approval

Approval was sought and granted by the Departmental Ethics Committee.

Informed consent

Informed written consent obtained from the participant

Conflict of interest

The authors declare no conflict of interest.

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