CASE REPORT

Mullerian duct anomaly in a Nigerian woman with recurrent pregnancy loss

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Abstract

A case of late first trimester/early second trimester recurrent pregnancy loss in a 30-year-old para 3+0 Nigerian woman is reported. She was referred to the Radiologist for Hysterosalpingography (HSG) work-up following repeated spontaneous abortions at early pregnancy stage. There was no history of trauma, surgery, alcohol/drug abuse or haematological disorder such as sickle cell anaemia or Thalassemia. Her body weight was 105kg. Systemic examination was normal. The HSG however demonstrated widely separated horns of the single endometrial cavity with intercornual angle measuring 107 degrees indicating a congenital abnormality of bicornuate type.

Key words: Congenital uterine anomaly, spontaneous abortion, Nigerian, hysterosalpingogram

Date of Acceptance: 27-Jan-2010

Introduction

The incidence and prevalence of Mullerian duct anomalies vary widely. This is because studies have been performed on different populations with no standard classification system as well as differences in acquisition of diagnostic data. However, prevalence ranging from 0.16 to 10% has been reported.[1] A prevalence of 0.4% has been reported in women who were investigated with ultrasonography because of nonobstetric indications,[2] while a prevalence of 8–10% has been reported in women investigated with hysterosalpingography (HSG) because of recurrent pregnancy loss.[2]

The data available suggest that the prevalence of Mullerian duct anomalies in women with normal fertility and in those with infertility approximates 1% and the prevalence in women with repeated pregnancy loss approximates 3%.[3-5] Among the Mullerian duct anomalies, the bicornuate uterus from incomplete fusion of the uterovaginal horns at the level of the fundus and accounts for approximately 10% of such anomalies.

This case is reported because of its rarity and to highlight the role of radiological imaging in the management of this congenital anomaly.

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Case Report

Mrs. B.O. is a 30-year-old ParaO^{+3} woman who was referred to Pix Center, a private radiological imaging center in Port Harcourt for HSG. She presented with a clinical history of recurrent pregnancy loss for 2 years. She had recurrent spontaneous abortions at the 13th–14th week of gestation three consecutive times. The last episode was in June 2002. There was no history of trauma during pregnancy. There was also no history of alcohol intake, ingestion of quinine or surgical termination of pregnancy in the past. She is Rhesus positive and her genotype is HBAA. She has normal flow, with ketamania of 4/29. Past medical history was not contributory.

Physical examination revealed an obese woman (weight 105 kg) who was not pale or jaundiced. There was no pedal edema or peripheral lymphadenopathy. The abdomen and cardiovascular, respiratory and central nervous systems were normal. Pelvic examination revealed normal vulva, nonbulky uterus, free adnexae and nonpatulous or dilated cervix.

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Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/1119-3077.79254

HSG demonstrated widely separated horns of the single endometrial cavity with intercornual angle measuring 107° [Figure 1]. She was offered surgery in the referring hospital to correct the anomaly, but she declined.

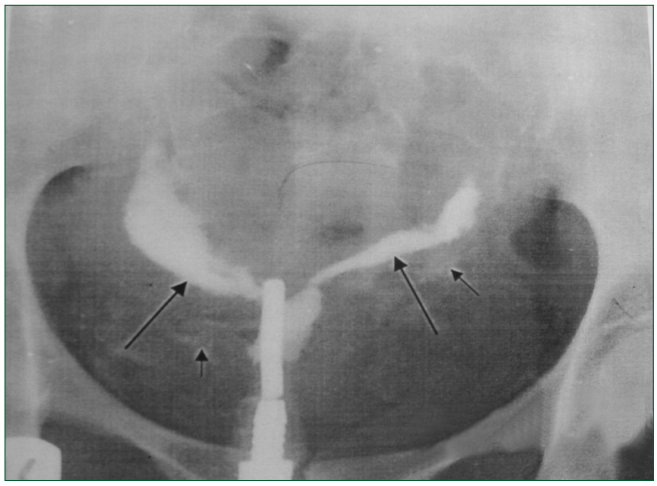

Figure 1: Hysterosalpingography demonstrating each half of the uterine cavity as a spindle-shaped structure, which inclines away from its fellow (making an angle of 107°) (long arrows). There is minimal intraperitoneal spillage of contrast (short arrows)

Discussion

A bicornuate uterus consists of two symmetric conua that are fused caudally, communicating with the endometrial cavity, most often at the level of the uterine isthmus. The intervening cleft of the complete bicornuate uterus extends to the internal os (bicornuate unicollis) while the cleft of a partial bicornuate configuration is of variable length. A bicornuate uterus is associated with a duplicated cervix, although a degree of communication is maintained between the two horns. Longitudinal upper vaginal septa are reported to coexist in 25% of the bicornuate uteri.[6] These were not demonstrated in our patient.

The majority of the bicornuate uterine abnormalities are considered to be sporadic or multifactorial in nature.[7] Extrauterine and intrauterine environmental factors such as exposure to ionizing radiation, intrauterine infection and drugs with teratogenic effects, such as diethylstilbesterol, can also cause defects of the developing fetal genital tracts.[7] We did not get any history of association with these environmental factors from our patient.

While the majority of women with Mullerian duct anomalies have little problem conceiving, they have higher rates of spontaneous abortion, as was noted in our patient. They also have associated premature delivery, abnormal fetal lie and dystocia at delivery.[8] Most studies have reported an approximate frequency of 25% for associated reproductive problems in women with Mullerian duct anomalies compared with 10% in the general population.[8] Wajntrub *et al.*[9] reported that cervical incompetence is associated with these anomalies. Buttram *et al.*[10] classified Mullarian duct anomalies based on the degree of failure of normal development. He separated these anomalies into classes that demonstrate similar clinical manifestations, treatment and prognosis for fetal viability.

Toaff *et al.*[11] described nine subtypes of septae and bicornuate uteri that are characterized by the presence of a communication between two otherwise separate uterocervical cavities.

Imaging modalities that are useful in the diagnosis of Mullerian duct anomalies (bicornuate uterus) are ultrasound, HSG and magnetic resonance imaging (MRI). On HSG, the horns of the endometrial cavity are usually greater than 105°, each horn has a fusiform appearance, with apices that taper and end in a single fallopian tube.[12] However, the radiographic appearance has such a large degree of overlap with that of the septate uterus that it makes it difficult to characterize the external contour of the uterus, and differentiation from the septate uterus is more often not possible. This radiographic appearance was demonstrated in our patient, where the intercornuate angle measured 107°.

On ultrasound images, a large fundal cleft will be seen with divergence of the uterine horns and associated echogenic endometrial complexes.[12,13] Transabdominal ultrasound image in our patient was not clear enough to demonstrate this finding because she was obese. However, transvaginal ultrasound will demonstrate the above ultrasonic appearances.

On MRI images, the bicornuate uterus demonstrates a cleft of at least 1.0 cm of the external fundal uterine contour. The horns demonstrate normal uterine zonal anatomy. The endometrial-to-myometrial ratio and width are usually normal.[12,13] MRI is not routinely used as an imaging modality in infertility.

Surgical approach for management of bicornuate uterus is usually not indicated. Strassman metroplasty has been identified; however, the benefits of metroplasty have not been formally studied in prospective trials.[12,13] The bicornuate uterus has been reported to have the highest associated prevalence (38%) of cervical incompetence among Mullerian duct anomalies.[14] Prophylactic placement of cervical cerclage in selected patients has been reported to increase the fetal survival rates.[14] Our patient was offered surgery, but she declined it for no obvious reasons.

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Source of Support: Nil, **Conflict of Interest:** Nil.