Laparoscopic management of non-communicating rudimentary horn in a dysmenorrheic and infertile patient

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ABSTRACT

A case of laparoscopic excision of non-communicating rudimentary horn. The anatomical features of this case were unique. A 19-year-old nulligravida presented with severe dysmenorrhea and primary infertility. Hysterosalpingogram revealed a left uterine horn that had a solitary patent tube. Magnetic resonance imaging showed a left unicornuate uterus continuous with the cervix and the vagina, and a rudimentary right uterine horn. This confirmed the diagnosis of non-communicating cavitated right rudimentary horn. At laparoscopy the patient had stage III endometriosis, and non-communicating right rudimentary horn, which was attached to the unicornuate uterus by a long fibrous band. The rudimentary horn was freed from the pelvic side wall, excised and removed laparoscopically with no complication.

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The most widely used classification of uterine anomaly has been described by the American Society for Reproductive Medicine (ASRM).[1] Unicornuate uterus with a rudimentary horn can vary in 2 basic ways. Firstly, it may or may not have an endometrial cavity. Secondly, if an endometrial cavity is present it may or may not communicate with the uterine cavity of the unicornuate uterus. Non-communicating cavitated rudimentary horns are the most clinically significant. They are more likely to be associated with dysmenorrhea, dyspareunia, infertility and pelvic pain from pelvic endometriosis and adhesions. Ruptured cornual pregnancies occurring within the first half of pregnancy are a well-known severe complication of these rudimentary horns.[2] In order to avoid maternal complications, excision of these horns is advised. Standard treatment of such Müllerian dysgenesis used to be via laparotomy; however, several investigators[3–7] have described laparoscopic management of non-pregnant rudimentary horn. We present a case of non-communicating rudimentary horn associated with unicornuate uterus managed laparoscopically.

Case Report. A 19-year-old nulligravida presented with a history of severe dysmenorrhea for the last 4 years, and primary infertility for the last 2 years. The patient experienced menarche at the age of 13 years and had regular cycles at 27-28 day intervals. Her menses lasted for 4-5 days with severe dysmenorrhea not responding to non-steroidal anti-inflammatory analgesics or birth control pills. Clinical examination

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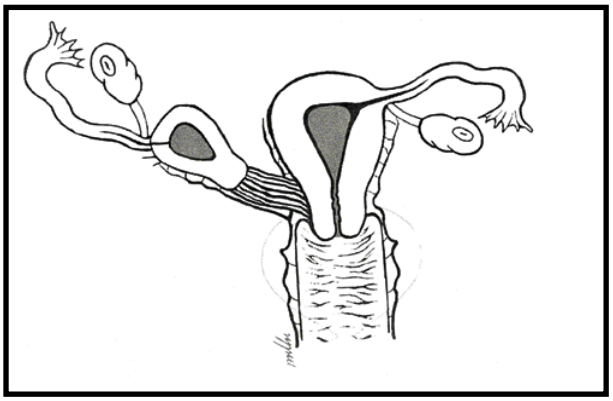

Figure 1 - Diagram shows a widely separated left unicornuate uterus and rudimentary non-communicating right horn connected to the unicornuate horn by a long fibrous band.

revealed a single cervix with no vaginal abnormality. Bimanual examination revealed a uterus that deviated to the left, with tender right adnexa. Pre-operative transvaginal ultrasound revealed the uterus deviated to the left measuring 7 x 4 x 3 cm, with endometrium measuring 10 mm. In the right adnexa, a structure appeared to be another uterine fundus and corpus measuring 5 x 3 x 2 cm with an endometrium measuring 11 mm. Both ovaries appeared normal. Hysterosalpingogram revealed a left uterine horn that had a solitary patent tube. Magnetic resonance imaging (MRI) showed a left unicornuate uterus continuous with the cervix and the vagina, and a rudimentary right uterine horn, which was separated from the left horn by a long fibrous band. This confirmed the diagnosis of non-communicating cavitated right rudimentary horn. Other investigations revealed a normal seminal analysis, and the intravenous pyelogram (IVP) revealed the absence of the right kidney and ureter. After obtaining an informed consent, a laparoscopy was performed with a 10 mm scope placed below the umbilicus. A 5 mm incision was made for a secondary trocar lateral to the deep epigastric vessels on the left, and a 5 mm trocar was used in the right lower quadrant. The patient was noted to have moderate endometriosis on the right side of the pelvis and had a right 5 x 3 x 2 cm rudimentary horn adherent to the right pelvic side wall and attached to the unicornuate uterus by a long fibrous band of tissue (**Figure 1**). A methylene blue dye injection showed free spillage from the left tube only with no communication to the right. A hemihysterectomy and a right salpingectomy were started by fimbriated end using bipolar cautery and scissors. The round ligament was then transected and the bladder peritoneum on the rudimentary horn was dissected downward. The long fibrous band connecting the 2 horns was coagulated and resected. The main blood supply to the rudimentary horn coursed below the fibrous band on the medial side of the horn. This was identified, dissected free, coagulated with bipolar cautery and transected. After lysis of adhesions, the rudimentary horn was then separated from the unicornuate uterus. The specimen was removed by enlarging the right 5 mm port to 15 mm for morcellation of the specimen. Blood loss was minimal and the operating time was 120 minutes. The patient was discharged on the following day. The pathology report revealed a luteinized endometrium and normal tube. After 6 month of follow-up, she had no dysmenorrhea and is currently pregnant.

Discussion. Unicornuate uterus is the 3rd most common uterine known anomaly. It occurs due to failure of development or hypoplasia of the contralateral Müllerian duct. This uterine anomaly is divided into 4 subgroups according to ASRM classification (class II a-d).[1] An estimated 75-90% of unicornuate uteri have a non-communicating rudimentary horn.[8] Two anatomical variations of non-communicating rudimentary horn have been described by Falcone et al.[7] Either the 2 horns are separated by a short fibrous band, in which case the uterine artery courses below the fibrous band and is easy to identify and coagulate, or the rudimentary horn is firmly attached to the unicornuate uterus which makes the dissection plane between the 2 horns difficult, and hemostasis more critical. Standard treatment of such Müllerian dysgenesis used to be via laparotomy, however, in recent years, laparoscopic resection has become a viable alternative to laparotomy for management of symptomatic rudimentary horn with a functioning endometrium. Preoperative MRI revealed the fibrous band type, different from that reported by Falcone et al.[7] In our patient the fibrous band connecting the 2 uteri was long and thick, which allowed the rudimentary horn to be adherent to the right pelvic side wall. It was easy to identify the uterine artery and achieve hemostasis, however, the difficulty was in freeing the adherent horn from the pelvic side wall. That required sharp and hydrodissection. In our patient, a finding of an absent kidney and ureter on IVP reduced the operating time as it was not necessary to identify and dissect out the right ureter.

In conclusion, and in agreement with previous reports, Müllerian anomalies can be managed by laparoscopy with an excellent reproductive outcome.

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