Laparoscopic Removal of a Symptomatic Rudimentary Uterine Horn in a Perimenarchal Adolescent

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ABSTRACT

An adolescent patient with a symptomatic, noncommunicating, rudimentary uterine horn is described. Diagnosis was suggested by ultrasonography and treatment was by laparoscopic resection. A review of other pediatric cases as well as the adult literature gives evidence that laparoscopic resection is worth considering in such cases.

Key Words: Congenital uterine anomalies, Noncommunicating rudimentary uterine horn, Unicornuate uterus.

INTRODUCTION

A unicornuate uterus with a noncommunicating rudimentary horn is a rare mullerian anomaly that is most often incidentally found in adults; this condition is often asymptomatic due to the lack of functional endometrium. However, when the horn is lined with functional endometrium, the resulting obstructed menstrual flow may cause severe cyclic pelvic pain shortly after menarche. The marked lower abdominal and pelvic pain may lead to the need for an ultrasound, computed tomographic scan, or magnetic resonance imaging, which demonstrates a pelvic mass. Accordingly, a surgeon skilled in laparoendoscopic surgery may become involved.

In the adolescent, the traditional surgical approach to treatment of this problem has been through laparotomy and removal of the dilated noncommunicating horn. However, at least in the adult, a number of reported cases have now been treated successfully by laparoscopic removal. We present the second reported case of primary laparoscopic removal in an adolescent, giving further evidence that it may be worthwhile to consider this approach in this age group also.

CASE REPORT

A 14-year-old virginal female presented to her pediatrician with cyclic pain in her right lower quadrant with onset shortly after menarche. The pain would last up to 3 days and started 1 to 2 days after ending her menstrual period. Menses were usually regular, though she did miss her period sporadically. An initial abdominal ultrasound suggested a right hemorrhagic ovarian cyst with free fluid in the cul-de-sac. The pain was initially treated conservatively with nonsteroidal antiinflammatory agents. An initial abdominal ultrasound suggested a right hemorrhagic ovarian cyst with free fluid in the cul-de-sac. The pain was initially treated conservatively with nonsteroidal antiinflammatory agents. When the cyclic pain and mass persisted, she was referred to a gynecologist whose pelvic examination revealed a normal cervix and a palpable mass in the right adnexa. A repeat pelvic ultrasound revealed a complex right pelvic mass separate from the right ovary with a central spherical area of low echogenicity (Figure 1). This was thought to possibly be a noncommunicating uterine horn dilated by blood. The patient was referred to a surgeon experienced in operations for uterine anom-
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A laparoscopy was performed that demonstrated a left unicornuate uterus with a separate right uterine horn (Figure 2). Lack of communication was verified by tubal dye studies with methylene blue. This also confirmed a normal patent left fallopian tube, suggesting the possibility of subsequent fertility. The right fallopian tube was atrophic, and the right uterine horn was filled with cystic spaces with old blood. No endometriosis was noted.

Laparoscopic resection of the noncommunicating right uterine horn was then performed. First the right ureter was identified coursing well beneath the uterine horn. Then, the right uterine horn and right tube were removed by sequentially electrocoagulating with bipolar forceps and cutting the band of fibrous tissue that stretched from the right uterine horn to the left uterine horn, followed by the round ligament, uterine artery, and utero-ovarian ligament. The right ovary was left in place as was the left unicornuate uterus and tube and left ovary (Figure 2). Once the right horn was completely freed up, it was incised in multiple places to decrease its size by releasing trapped blood. Then a plastic bag was placed through an 11-mm port, and the suprapubic incision was widened to 2.5 cm for removal. Total operating time was 78 minutes, and postoperative time to discharge was 4 hours. The patient recovered without complications. Pathology of the specimen showed a large right uterine horn measuring 6.5 by 5.5 by 3.5 cm.

DISCUSSION

A unicornuate uterus with a noncommunicating rudimentary horn occurs when one mullerian duct develops abnormally such that fusion with the other duct does not occur. Rudimentary horns may or may not have a functioning endometrium. Associated medical problems include pelvic pain, infertility, endometriosis, and ectopic pregnancy. Urinary tract anomalies frequently occur due to the common origin of the mullerian ducts and upper urinary tract. Varying types of rudimentary horns may be present and may be classified according to the guidelines set by the American Fertility Society.

We present the case of a 14-year-old girl who had a unicornuate uterus with a noncommunicating uterine horn, dilated by blood from a functional endometrial lining. The resulting severe cyclic pelvic pain led to an ultrasound that demonstrated a pelvic mass. A follow-up ultrasound (Figure 1) performed at the referral center was sufficiently clear to include a noncommunicating uterine horn in the differential diagnosis. Magnetic resonance imaging and 3-dimensional ultrasound although
more costly may offer greater resolution of detail in demonstrating uterine anomalies if an initial ultrasound does not allow for an adequate assessment. Hysterosalpingography can demonstrate the communicating unicornuate uterus. Ultimately, laparoscopy is necessary for a definitive diagnosis. The differential diagnosis includes an ovarian neoplasm, ectopic pregnancy, a pedunculated fibroid, and a bicornuate uterus with an obstructed hemivagina. In the latter condition a bulge generally occurs in the vaginal wall and the ipsilateral kidney is absent.

Our report may be of interest to laparoendoscopic surgeons due to the rarity of the condition, the age of the patient, and the successful use of laparoscopy for removal of the abnormal uterine horn. The condition of a unicornuate uterus with a rudimentary horn is rare representing only 1% to 3% of congenital mullerian anomalies. Most of the information on this subject therefore comes from case reports such as this. In this case, a laparoscopic approach was used to excise the rudimentary horn. One other case of successful primary laparoscopic removal of a noncommunicating uterine horn in an adolescent (15-year-old) has been reported. In an additional reported case in a 15-year-old, a distended uterine horn was drained during a diagnostic laparoscopy and then later successfully removed at a subsequent laparoscopy. A number of cases of successful laparoscopic removal of noncommunicating uterine horns have been reported in adults, and this has been suggested to be the preferred approach. In the adult, the uterine horn tends to be small, nonfunctional, and incidentally discovered. We conclude that it may be worthwhile to consider the laparoscopic approach for this condition also for the larger functional uterine horns found in the adolescent population. There appears to be the potential benefit to the patient of shorter hospitalization time and decreased postoperative pain and recovery.

References:
1. Speroff L, Glass RH, Kase NG. Clinical Gynecologic Endocrinology and Infertility. 6th ed. Baltimore, Md: Lippincott, Williams & Wilkins; 1999:148.
2. March CM. Hysteroscopy and the uterine factor in infertility. In: Lobo RA, Mishell DR, Paulson RJ, Shoupe D, eds. Mishells' Textbook of Infertility, Contraception, and Reproductive Endocrinology. 4th ed. Malden, Mass: Blackwell Science; 1997:580-603.
3. Soundararajan V, Rai J. Laparoscopic removal of a rudimentary uterine horn during pregnancy: Case report. J Reprod Med. 2000;45:599-602.
4. The American Fertility Society. American Fertility Society classification of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, mullerian anomalies and intrauterine adhesions. Fertil Steril. 1988;49:944-955.
5. Shattman GL, Grifo JA, Birnbaum S. Laparoscopic resection of a noncommunicating rudimentary uterine horn: Case report. J Reprod Med. 1995;40:219-220.
6. Amara DP, Nezhat F, Guidice L, et al. Laparoscopic management of a noncommunicating uterine horn in a patient with an acute abdomen. Surg Laparosc Endosc. 1997;7:56-59.
7. Perrotin F, Bertrand J, Body G. Laparoscopic surgery of unicornuate uterus with rudimentary uterine horn: Case report. Hum Reprod. 1999;14(4):931-933.
8. Dicker D, Nitke S, Shoenfeld A, et al. Laparoscopic management of rudimentary horn pregnancy: case report. Hum Reprod. 1998;13(9):2643-2644.

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