

Laparoscopic management of cervical agenesis

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Objective: To assess the possibility of laparoscopic management of cervical agenesis.

Design: Case report.

Setting: Patient recruited from a tertiary referral hospital.

Patient(s): Adult female with diagnosis of cervical agenesis.

Intervention(s): Laparoscopic uterovaginal anastomosis.

Main Outcome Measure(s): The patency of the anastomosis site was assessed with hysteroscopy.

Result(s): Patient was menstruating normally and had been sexually active at 6 months after the procedure.

Conclusion(s): Laparoscopic treatment of these cases is feasible and should be considered as a first-line treatment option. (Fertil Steril® 2006;85:1510.e13–5. ©2006 by American Society for Reproductive Medicine.)

Key Words: Cervical agenesis, cervical aplasia, Müllerian anomalies, laparoscopic surgery, uterine malformations

Congenital absence of the cervix is a rare condition and occurs in 1 in 80,000 to 100,000 births (1). It is known to be associated with both partial and complete vaginal aplasia and with renal anomalies. According to the American Fertility Society (2), cervical agenesis should be classified as a type Ib müllerian anomaly. Presentation is usually with primary amenorrhea and cyclical lower abdominal pain, as was seen in our patient. Endometriosis or pelvic infection may result from the chronic hematometra. In a recent retrospective review of 18 patients, 39% had associated vaginal aplasia (3).

CASE REPORT

We report the case of a 16-year-old female referred to our unit with primary amenorrhea and long-standing pelvic pain that was not cyclical. Before her referral, she had been prescribed Microgynon (Schering, Berlin, Germany), a combined oral contraceptive pill, continuously, which had relieved the pelvic pain. On examination she had normal secondary sexual characteristics. There was no significant medical or surgical history.

During initial investigation at the referring hospital, all routine blood tests and hormone profiles were normal. A normal female (XX) karyotype was reported. A provisional diagnosis of imperforate hymen was made, and the patient was prepared for surgery. When examined under anesthetic, she was found to have a blind-ending vagina. At this point the procedure was abandoned, and she was referred to our unit for further investigation and treatment.

Magnetic resonance imaging scan was performed and demonstrated an absent cervix with a normal distal vagina.

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There appeared to be no communication between the distal vagina and the lower uterus (see Fig. 1). She was duly counseled and admitted for surgery to connect the uterus to the proximal vagina.

A single intravenous dose of antibiotic was given with induction of anesthesia. The patient was prepared for surgery and cleaned and draped. She was initially placed supine without any table tilt. The legs were placed in a lithotomy position at an angle of 30° at the hips. A size 14 Foley catheter (Bard, Covington, GA) with 5 mL of water in the catheter balloon was placed in the bladder.

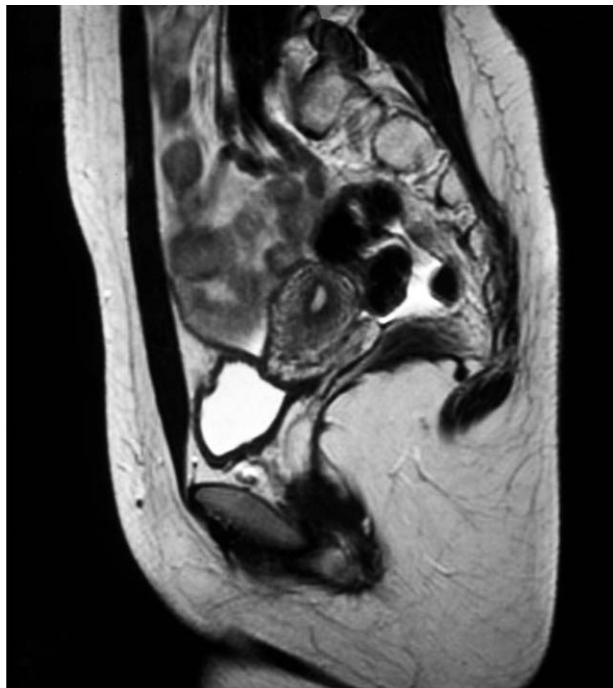
A Verres needle (Ethicon, Cincinnati, OH) was used to obtain a pneumoperitoneum. An incision was made in the umbilical region. The needle first was directed toward the sacral promontory, and when the characteristic clicks of passing through the layers were felt, the needle then was directed toward the pelvis. A water test was used to confirm entry into the correct space, and the abdomen was insufflated. Insufflation was ceased when flow ceased as a result of the preset pressure of 20 mm Hg. The main 11-mm trocar then was placed through the umbilical region.

Once the scope was inserted, the abdominal contents were examined, and the patient was placed in a head-down tilt. All additional ports were placed under direct vision to avoid injury to viscera or vessels. We placed two lateral 5-mm ports and one suprapubic 11-mm port. We used an 11-mm port with a variable top for ease of placing sutures through the ports (Ethicon). The lateral ports were placed at least 8 cm from the midline at the level of the umbilicus. A fifth 5-mm port was placed 4 cm above the level of the umbilicus just to the left of the midline. This port was used to enable access to the uterine cavity.

A 2–0 prolene suture (Ethicon) on a straight needle then was passed through the anterior abdominal wall just above the left lateral port. The needle was picked up with a lapa-

FIGURE 1

Magnetic resonance image demonstrated an absent cervix with a normal distal vagina.



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roscopic needle driver and passed through the left upper portion of the uterus. It then was passed through the anterior abdominal wall beside the entry point. This was repeated on the right side. The two sutures then were used as uterine retractors during the operation.

The bladder then was filled partly with saline via the Foley catheter to help identify its upper margin. The peritoneum at the lower edge of the uterus was incised, and the bladder was reflected in the midline. The uterine fundus then was incised in a sagittal direction with the harmonic scalpel (Ethicon). The incision was extended until the cavity was breached. The uppermost port then was used to insert a probe into the uterine cavity. This enabled the lowermost portion of the uterine cavity to be identified. The lowermost portion then was incised in a horizontal direction with the harmonic scalpel.

A probe was inserted vaginally into the top of the blind-ending vagina, and the top was incised laparoscopically with the harmonic scalpel. A size 12 Foley catheter was passed from the vagina and guided laparoscopically into the uterus. The incision at the top of the vagina was used to check its placement in the cavity before the balloon was inflated with 3 mL of saline. A McCartney tube (Tyco Healthcare, Mansfield, MA) then was inserted into the vagina to maintain the pneumoperitoneum. A 2-0 polydioxanone suture (Ethicon)

then was used to take a double bite of tissue on the lowermost portion of the uterus at 6 o'clock. This was repeated at 12, 3, and 9 o'clock. The fundus of the uterus then was closed with 2-0 Monocryl (Ethicon).

The uterine suspension sutures were removed to enable the uterus to be approximated to the top of the vagina. The stay sutures were passed to the vaginal surgeon, and each one was passed through the edge of the upper portion of the vagina. They then were tied. The catheter was left in the new tract to maintain patency. The abdominal ports were closed with an absorbable suture. The Foley was left in the bladder for 5 days.

The patient made an unremarkable recovery, apart from a chest infection that delayed her recovery. She therefore was kept on intravenous antibiotics and discharged on the 8th day once the chest infection had resolved. The vaginal and uterine catheter was planned to remain in situ for 12 weeks to prevent closure of the new tract; unfortunately, it fell out after only 4 weeks. At this point, a hysteroscopy was performed. During hysteroscopy, the uterovaginal anastomosis site was noted to be well healed, and the uterine cavity appeared intact (see Fig. 2). At 6-month follow-up, the patient reports normal menstruation and is able to use tampons; she also is sexually active without difficulty.

DISCUSSION

Previously, the recommended treatment for cervical agenesis was a hysterectomy because complications of recanalizing the cervix were common and the possibility of a viable pregnancy was unlikely (4, 5). Recent advances in reproductive technology and laparoscopic surgical techniques mean that conservative surgery is a possibility and perhaps should be considered as the first-line treatment option (6). The

FIGURE 2

Hysteroscopic view of uterovaginal anastomosis.



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largest study that examined outcomes in 18 patients after open uterovaginal anastomosis found that only 22% of patients required further surgery after the initial procedure. Furthermore, those investigators reported six spontaneous pregnancies in four of their patients (7). Despite these encouraging results, it is important to realize the possibility of sepsis and, in one case report (8), of death, as a result of ascending infection.

This case represents the first reported laparoscopic surgical uterovaginal anastomosis for a patient with cervical agenesis. There have been other case reports of laparoscopic techniques for müllerian anomalies, including a laparoscopic hemihysterectomy (9), and laparoscopically assisted skin grafting for reconstruction of the vagina and cervix (10). The benefits of laparoscopic over open surgery are well documented, and the shorter hospital stay and more rapid recovery times are of particular benefit in this group of young patients, many of whom are still in full-time education. The preoperative workup of these patients before laparoscopic surgery should include an intravenous urograph because there may be coexisting renal tract anomalies (11), and the possibility of duplex systems and the course of the ureters should be considered.

In conclusion, in patients with cervical agenesis, conservative laparoscopic surgery should be considered as first-line treatment. This surgery should be performed only in a highly specialized unit with the required expertise in laparoscopic surgery and in management of complex müllerian anomalies.

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