Placement of a Malecot catheter to enable embryo transfer after radical trachelectomy

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Objective: To describe the use of a Malecot catheter as a stent after radical trachelectomy (RT).
Design: Case report.
Setting: Assisted conception unit at a teaching hospital in the United Kingdom.
Patient(s): A 36-year-old woman undergoing IVF after her cervix had been excised for cervical carcinoma. Previous attempts at embryo transfer (ET) had been very traumatic and required a transmyometrial transfer on one occasion.
Intervention(s): A Malecot catheter was inserted into the uterine cavity after a dilatation procedure had been performed and removed before ovarian stimulation.
Main Outcome Measure(s): Ease of ET.
Result(s): The subsequent ET was much more straightforward.
Conclusion(s): This technique can facilitate ET after RT if the passage is found to be stenosed. (Fertil Steril® 2005;83:1842.e5–8. ©2005 by American Society for Reproductive Medicine.)

Key Words: Radical trachelectomy, embryo transfer, IVF

Surgery to the uterine cervix may make the important step of embryo transfer (ET) more difficult. The new operation of radical trachelectomy (RT) to completely excise the cervix can produce particular challenges to reproductive physicians.

CASE REPORT

A 36-year-old woman was referred to the regional gynecological oncology team after a loop excision of the cervix showed incompletely excised invasive squamous cell carcinoma. A right salpingectomy had been performed the year before for a tubal ectopic pregnancy and she was awaiting assisted conception treatment in the form of IVF. She was very keen to preserve her reproductive potential, as a result rather than undergo a radical hysterectomy she elected to proceed with an RT; an operation developed as an alternative treatment for patients with small volume disease, confined to the cervix, who wish to retain their fertility. This procedure allows removal of the primary disease with wide surgical margins including parametrial tissue, and preserving the uterine corpus.

Laparoscopic bilateral pelvic lymph node dissection was carried out to exclude nodal metastasis. The cervical resection was carried out through a vaginal approach with the uterine cervix, along with a cuff of paracervical and 2–3 cm of vaginal tissue, being removed. A nonabsorbable monofilament suture was inserted at the uterine isthmus as a prophylactic cerclage. The vaginal epithelium was then anastomosed to the isthmus at the uterine margin.

Histology demonstrated no residual disease with nodes negative for metastases and a magnetic resonance image (MRI) scan 6 months later showed no evidence of recurrent disease. Regular menses returned soon after the operation.

A cycle of IVF treatment was planned and, as a difficult ET was anticipated, a dummy catheter test was performed. Attempts at passage of an empty ET catheter were found to be too uncomfortable, therefore a transfer under general anesthesia was planned. She underwent standard long protocol of ovarian stimulation (1) and seven oocytes were collected, five of which fertilized. Even under general anesthesia it was not possible to negotiate the isthmovaginal opening, therefore a transmyometrial ET was performed but no pregnancy ensued.

A subsequent examination under anesthesia and dilatation of the tract was performed in the cycle before frozen embryos were replaced. This procedure involved both reproductive physicians and gynecological oncologists, but by the time of ET the opening was found to be stenosed. Despite the use of general anesthesia the transfer was very traumatic, requiring further dilatation. It did not result in a pregnancy.

To try to improve the embryo transfer for the next cycle of IVF it was planned to again perform a dilatation of the isthmovaginal opening but to place a stent to prevent stenosis.

After discussion with a microbiologist, a topical antibiotic gel (containing colistin, tobramycin, and amphoteracin) was administered per vaginum for 3 days before the procedure to

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reduce the microbial load within the vagina. Twenty-four hours before the procedure oral ciprofloxacin (500 mg twice daily) and clarithromycin (500 mg twice daily) was commenced and continued until the stent was removed in an attempt to prevent ascending infection into the uterus.

Placement of a stent was performed in a similar manner to that described by Yanushpolsky et al. (2) for patients with tortuous or stenotic cervical canals. The opening was dilated by the oncological surgeon who performed the original RT. A 12-Fr Malecot catheter (Cook Ltd., Hertfordshire, UK), usually used as a nephrostomy drain, was passed through into the body of the uterus and the stylet withdrawn so that the mushroom tip opened, thereby securing the catheter stent in place (Fig. 1). The catheter was then cut short to leave the distal end protruding from the opening without emerging from the introitus.

A few menstrual-like cramps were felt postoperatively but these settled within 24 hours. It had been planned that the catheter would stay in situ for 2 weeks and be removed at the next menses, at which time the next cycle of ovarian stimulation would commence. However, menstruation came earlier than expected (after 4 days), therefore it was elected to leave the catheter in until the next cycle.

After 29 days the catheter was carefully withdrawn and the tip sent for microbiological examination but no signs of infection were seen.

A short cycle of IVF was performed using cetrorelix (Cetrotide, Serono, Welwyn Garden City, UK) to reduce the interval between catheter removal and embryo transfer and hence avoid stenosis of the opening. After 12 days 12 oocytes were collected under sedation, of which 6 fertilized.

Embryo transfer was performed without sedation or anesthesia using transabdominal ultrasound guidance. Attempts to pass a soft catheter found the vault opening to have stenosed once again, therefore the embryos were returned to the incubator. Using a stylet (Rocket medical plc, Tyne and Wear, UK) as a gentle sound, the vault skin was gently opened, the tip passing in only a few millimeters. This then allowed a straightforward passage of the soft catheter into the body of the uterus. The echogenic tip transfer catheter (Cook) was advanced so the tip was 15 mm from the fundus and the embryos expelled. The flow of fluid and air was clearly seen on the ultrasound picture.

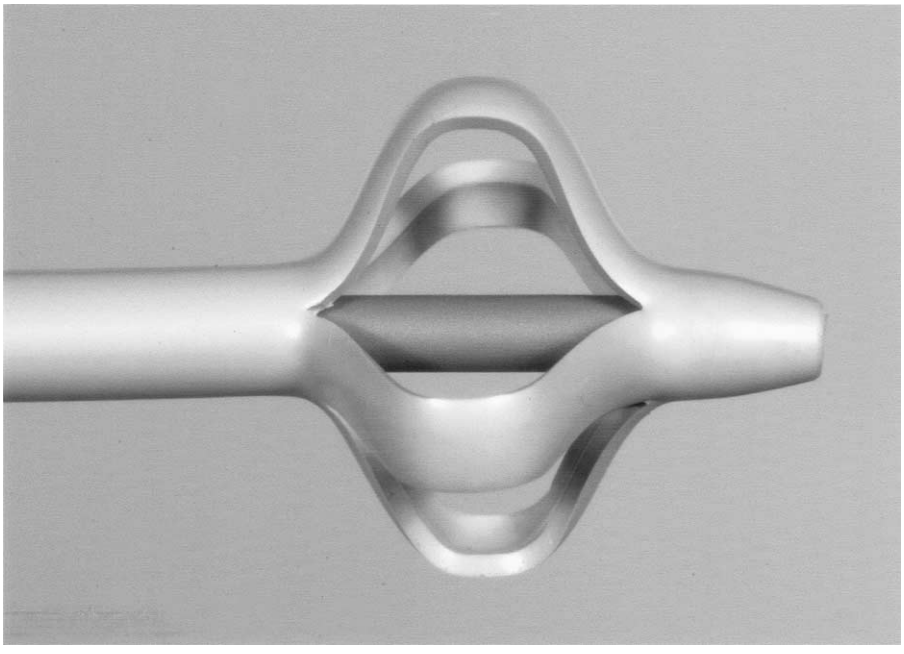
Unfortunately a urinary pregnancy test 2 weeks later was negative. A further cycle of IVF is currently being planned.

DISCUSSION

A number of small series show that the efficacy of RT and radical hysterectomy, in terms of prevention of recurrence of carcinoma in the short term, are similar (3–6). Where the treatments do differ, however, is that radical hysterectomy induces a state of absolute sterility, whereas RT retains the possibility of a future pregnancy. There is, as yet, a paucity of long-term follow-up data and hence this procedure must still be regarded as requiring further evaluation before widespread introduction into practice.

FIGURE 1

Malecot catheter tip with inner stylet. The stylet is withdrawn once the catheter is in place.



Aust. Malecot catheter after radical trachelectomy. Fertil Steril 2005.