

Single-port Laparoscopic Ovarian Transposition in an 11-year-old Girl

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Abstract

Ovarian transposition was the first procedure proposed for children with cancer to preserve ovarian function from damage caused by abdominal and pelvic radiotherapy. In this paper, we describe the first paediatric case of single-port laparoscopic ovarian transposition.

Keywords: Children, ovarian transposition, single-port laparoscopic surgery

INTRODUCTION

More than one-half of women treated with pelvic irradiation for Hodgkin disease experience premature ovarian failure due to the sterilizing effects of therapy.^[1] In recent years, progress in assisted reproductive technologies has opened up new possibilities for the prevention and treatment of infertility. Ovarian transposition was the first procedure proposed for children with cancer to preserve ovarian function from damage caused by abdominal and pelvic radiotherapy.^[2] In this paper, we describe the first paediatric case of single-port laparoscopic ovarian transposition by use of a surgical glove-port.

CASE REPORT

An 11-year-old girl was diagnosed with stage IV Hodgkin disease with left sacral wing, left iliac bone and L2 vertebral body metastases on bone scan.

The patient had six sessions of chemotherapy with a good response. In order to protect right ovarian function from pelvic radiotherapy, a laparoscopic right ovarian transposition was proposed by oncologists.

We opted for the single-port laparoscopic surgery using surgical glove-port technique. This technique starts with a 2 cm incision at the level of the umbilicus, without dissection of subcutaneous tissue. After the incision, a small size ALEXIS® wound retractor (Applied Medical, Rancho Santa Margarita, CA, USA)

is placed in the wound. Afterward, a standard powder-free surgical glove is placed, surrounding the external ring of the retractor, and one 12-mm and two 5-mm trocars were placed through incisions made in the glove fingers by cutting the tips [Figure 1]. A rigid 30°, 5 mm endoscope and conventional laparoscopic instruments were used. The operative procedure began with careful inspection of the ovaries, peritoneum, and entire abdominopelvic cavity. Right ovary was mobilised and grasped. The right ureter was identified through the peritoneum. The uteroovarian ligament was cauterised and severed using bipolar forceps for coagulation and scissors alternatively. The right fallopian tube was separated from the ovary through the mesovarium. The peritoneum then was incised along the infundibulopelvic ligament to mobilize the ovary completely. Dissection of the ovarian vessels was performed up to the level of the aortic bifurcation. The ovary was transposed laterally to the right paracolic gutter and fixed securely with the use of two metal clips. The ovarian vessels were not tunneled. The operative time was 98 min, and the postoperative course was without complications.

DISCUSSION

Preservation of ovarian function by repositioning the ovaries out of the irradiation field was recommended in

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Figure 1: All trocars are inserted through fingers of the glove by cutting the tips

Hodgkin disease and other in childhood cancers.^[2] Ovarian transposition is a common method of avoiding irradiation damage. It is performed in young women who require radiotherapy for pelvic malignancy to preserve hormonal function and possibly, potential fertility.^[3] This is a simple procedure that can be performed laparoscopically, it is safe and effective.^[4] Ovarian transposition is usually done after neoadjuvant chemotherapy to attest tumour chemosensitivity and disease control.^[2] Successfully preserving ovarian function depends on the distance between the transposed ovaries and the edge of the radiation field. Therefore, the ovaries should be transposed as laterally and as cranially as possible from the pelvic brim. However, attention should be paid to avoid torsion and extension of the ovarian vessels, which may reduce the blood supply to the ovaries.^[5,6]

Innovations in technology have changed the traditional laparoscopy to be less invasive. Single-port laparoscopic surgery is a technique in laparoscopic surgery, which is based on the idea that all the laparoscopic trocars are inserted through the same incision. The advantages of the surgical glove-port technique compared to the single-port technique include its ease of placement and use of inexpensive surgical equipment.^[7,8] The glove-port technique allows simultaneous passage of several laparoscopic instruments through one small incision, and this fact can have several merits: the effect of the two rings of the wound retractor can prevent subcutaneous emphysema, port-site infection, and bleeding. The umbilical incision is minimised; this advantage can decrease the postoperative pain and the rate of surgical site hernia development.^[9] In this report, we could perform ovarian transposition in a reasonable time without operative complication. However, the single-port laparoscopic surgery has systemic limitations, including a crush between instruments or between instruments and endoscope, a limited amount of instruments and limited mobility of straight laparoscopic instruments because surgical instruments work through only one port. We have solved the technical problems using conventional laparoscopic instruments. A 40 cm length, 5-mm diameter, and 30° angled endoscope, and a 90° light cable

adaptor were used to avoid collision between the endoscope and surgical instruments. We believe that surgeons who wish to perform single-port laparoscopic ovarian transposition should have advanced laparoscopic skills and experience with conventional laparoscopic surgery. This can be overcome by embarking on extra-corporeal training with simulators or animal labs.^[10]

CONCLUSION

The glove-port is a feasible and aesthetic technique to perform laparoscopic ovarian transposition in children who require pelvic radiotherapy. Prospective randomised trials will permit the evaluation of potential benefits of this minimally invasive surgical technique.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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