Sentinel lymph node mapping in endometrial cancer staging: Two-step technique with the da Vinci SP system

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In endometrial cancer surgical staging, cervical indocyanine green (ICG) injection method is technically convenient and widely used in sentinel lymph node (SLN) biopsy. However, this method is difficult to evaluate the paraaortic SLN thoroughly. Two-step SLN mapping (bilateral uterine cornus and cervical ICG injection) has been proposed to more accurately identify paraaortic SLN [1,2]. Our aim was to provide a stepwise demonstration of two-step SLN mapping in endometrial cancer staging using the da Vinci SP system (Intuitive Surgical, Sunnyvale, CA, USA).

A 72-year-old woman (gravida 2 para 2) with a history of abnormal uterine bleeding for a year visited the center. Endometrial curettage revealed an endometrioid carcinoma grade 2. Preoperative imaging studies indicated endometrial lesion with less than half of myometrial invasion without pathologically enlarged LNs. Serum CA 125 and CA 19-9 were 19.7 U/mL and 69.2 U/mL, respectively. Robot-assisted surgical staging including total hysterectomy, bilateral salpingo-oophorectomy, and retroperitoneal pelvic and paraaortic SLN biopsy was planned. Diluted ICG (1.25 mg/mL, Dongindang Pharmaceuticals, Siheung, Korea) was prepared with an injection needle (0.7 mm needle tip, 330 mm working length, 5 mm diameter, 20 mm needle length; RZ Mediz-intechnik GmbH, Tuttlingen, Germany). Fluorescent lymphatic channels were visualized using Firefly imaging system (Intuitive Surgical, Sunnyvale, CA, USA). In this video, we described the procedure in 10 steps: (1) Exploration of abdominal cavity; (2) Peritoneal cytology; (3) Bilateral tubal ligation at fimbria; (4) ICG injection on the bilateral uterine cornus; (5) Para-aortic SLN; (6) ICG injection on the uterine cervix; (7) Pelvic SLN biopsy; (8) Total hysterectomy with bilateral salpingo-oophorectomy; (9) Saline irrigation of pelvic cavity; (10) Vaginal vault closure.

Para-aortic SLNs were identified 15 minutes after ICG injection on the uterine cornus. After the para-aortic SLN biopsy, ICG was injected on the uterine cervix. Bilateral pelvic

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SLNs were also identified about 15 minutes after cervical injection. The operative time was 125 minutes (docking time 8 min, console time 66 min) and the blood loss was 20 mL. The patient was discharged 2 days later. The final pathologic reports confirmed stage IA grade 2 endometrioid adenocarcinoma with negative lymphovascular space invasion, and negative both pelvic and paraaortic SLNs.

Two-step SLN mapping in endometrial cancer staging using da Vinci SP seems to be a feasible method and could be utilized for paraaortic SLN mapping in various robotic platforms.

**Video related to this article**

The video related to this article can be found online at 10.36637/grs.2023.00192.

**Conflict of interest**

No potential conflict of interest relevant to this article was reported.

**References**
