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HASA FIRST LAPAROSCOPIC SENTINEL LYMPH NODE MAPPING WITH INDOCYANINE GREEN TRACER FOR EARLY-STAGE ENDOMETRIAL CANCER

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Introduction

Laparoscopic surgery for gynaecological malignancy offers the advantages of reduced post-operative pain, and decreased risk of incisional hernia as well as adhesion-related complications, to name a few. Patients may also avail of faster adjuvant treatment as swift recovery is achieved in laparoscopic surgery compared to laparotomy.

Sentinel lymph node mapping (SLNM) is an acceptable alternative to systematic pelvic lymphadenectomy in the surgical management of early-stage endometrial cancer as it reduces the risk of lower limb lymphedema. On 7th November 2023, gynaecologic oncology unit of Hospital al-Sultan Abdullah (HASA) marked a new milestone by performing its first laparoscopic SLNM using indocyanine green (ICG).

Team members

The team members participating in the surgery were Dr. Noor Azura Noor Mohamad (first on left), Dr. Zatul Akmar Ahmad (not in the picture), Dr. Nur Faezza Mohd Mohtar (first on right), Dr. Nurulhuda Ahmad Sani (second on right), and invited consultant gynaecologic oncologist from Institut Kanser Negara, Dr. Jamil Omar (second from left) as shown in the picture.

Preoperative preparation

The patient was a 41-year-old lady with newly diagnosed endometrial cancer and concurrent triple-negative breast cancer. She was counseled to undergo laparoscopic SLNM, total hysterectomy, and bilateral salpingo-oophorectomy (THBSO) before embarking on neoadjuvant chemotherapy for breast cancer. ICG tracer of 2.5mg/mL was prepared by mixing 25mg of tracer dye with 10 ml sterile water within 3 hours before operation.

Intraoperative procedure

The patient was put in Lloyd Davis lithotomy position once under general anaesthesia, followed by draping, and insertion of laparoscopic trocar and camera. We utilized the state-of-the-art Karl Storz Rubina 4K Camera System with ICG fluorescence imaging guided by Miss Nicole Yeoh, the representative officer from UMMI Surgical. The ICG solution of 0.5ml was injected into the cervical stroma at 10mm depth, followed by another 0.5ml at 1-2mm depth at 3 and 9 o'clock. Uterine manipulator J-Singh was utilized to manipulate the uterus for the SLNM and THBSO. Below shows the operating room setup during the laparoscopic procedure.

Pelvic retroperitoneal space was entered with near-infrared (NIR)/ICG visualization mode turned on to avoid disrupting the lymphatic channels. Lymphatic channels from the cervix were then followed through to identify the sentinel lymph node. The pictures showed successful mapping of the pelvic sentinel lymph node at right and left hemi-pelvis. Sentinel lymph nodes were then sent for histopathologic assessment together with the uterus, cervix, bilateral ovaries, and bilateral fallopian tubes, which were subsequently resected after SLNM.

Technical challenge

The length of the surgical procedure was extended due to the presence of intra-abdominal adhesion at the anterior abdominal wall, as well as dense adhesion between the bladder and lower uterus, as the patient had three previous lower-segment cesarean sections. Despite that, there was no intention to convert to laparotomy as adhesiolysis was better performed laparoscopically, given excellent visualization of pelvic organs. The procedure was completed with no allergic reaction towards ICG and no injury to the blood vessels, obturator nerve, or bladder. The patient was discharged well on day-2 post-surgery.

Conclusion

The first laparoscopic SLNM with ICG for early-stage endometrial cancer was a successful event for the HASA gynaecologic oncology unit. The accomplishment lies in the good collaboration between gynaecologic oncologists, skilful gynaecologists in performing advanced laparoscopic procedure, excellent teamwork within operating theatre team, and the availability of advanced laparoscopic instruments in HASA. We hope to expand this surgical option to other suitable patients soon to keep abreast with contemporary medicine.