Sentinel lymph node mapping in early-stage ovarian cancer: surgical technique in 10 steps

Nuria Agusti 1, Pilar Paredes 2,3,4, Sergi Vidal-Sicart 2,3, Ariel Glickman 1, Aureli Torne 1,3,4, Berta Díaz-Feijoo 1,3,4

1Institute Clinic of Gynecology, Obstetrics, and Neonatology, Hospital Clinic of Barcelona, Barcelona, Spain
2Department of Nuclear Medicine, Hospital Clinic of Barcelona, Barcelona, Spain
3Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain
4Faculty of Medicine, University of Barcelona, Barcelona, Spain, Hospital Clinic of Barcelona, Barcelona, Spain

Correspondence to
Dr Nuria Agusti, Department of Gynecologic Oncology, Hospital Clinic de Barcelona, Barcelona, Spain; NAGUSTI@clinic.cat

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Systematic pelvic and para-aortic lymphadenectomy is part of early-stage epithelial ovarian cancer staging surgery. Although lymph node involvement rate is only 15% (6%–30%), this procedure is associated with a potential severe morbidity with no evidence suggesting a therapeutic value. Detection of the sentinel lymph node (SLN) in patients with early-stage epithelial ovarian cancer is in an experimental phase. Standardization and description of the technique are the main objectives of this video article. It has been performed in the context of a clinical trial called MELISA (Mapping Sentinel Lymph Node in Initial Stages of Ovarian Cancer-NCT05184140).

We present a step-by-step video demonstration (Video 1) of the technique performed at the Hospital Clinic of Barcelona. We divided the surgical procedure into the 10 following steps: (1) selection of the patient; (2) materials; (3) radiotracer injection; (4) adnexectomy; (5) frozen section; (6) ovarian lymphatic mapping with a portable gamma camera; (7) indocyanine green injection; (8) detection of a SLN with a fluorescence camera and gamma probe; (9) excision of SLN and performance of staging surgery; (10) ultrastaging of SLN.

Unlike other gynecologic cancers, the choice of a particular tracer and the injection time remain the most controversial aspects since final diagnosis is usually done intra-operatively after the frozen section.

As the 99mTc-albumin nanocolloid radiotracer remains trapped in the lymph nodes for a long period it can be injected before the adnexectomy. The injection at this time is supposed to be the ideal setting since the lymphatic pathways have not yet been disrupted. As evidence suggests that a dual method allows a better...
the injection of indocyanine green is performed after confirmation of the malignancy. The small size of indocyanine green molecules causes rapid lymphatic migration and makes it difficult to accurately identify the first node, especially after a few minutes. In order to identify the first lymphatic node in real time, a lymphatic mapping is checked with the portable gamma camera (Figure 1).

In conclusion, the description of this new surgical procedure in 10 steps allows its standardization and distribution among surgical teams.

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ORCID iDs Nuria Agusti http://orcid.org/0000-0002-1165-0661
Sergi Vidal-Sicart http://orcid.org/0000-0002-6303-3606
Aureli Torne http://orcid.org/0000-0003-4700-9507
Berta Diaz-Felip http://orcid.org/0000-0002-6451-1817

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