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VIDEOS OF SURGICAL PROCEDURES IN DERMATOLOGY

Inguinal Sentinel Lymph Node Biopsy: Surgical Technique☆

Biopsia selectiva del ganglio centinela de la región inguinal: técnica quirúrgica

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Introduction

Sentinel node biopsy (SNB) is the gold standard technique for lymph node staging in patients with primary cutaneous melanoma. Since its introduction by Morton et al. in the 1990s, SNB has been performed routinely patients with medium-risk primary melanoma.[1]

Preoperative and intraoperative mapping with Tc^{99m} labelling and the currently available guidance instruments (portable gamma camera and hand-held gamma probe) have made the identification and dissection of sentinel nodes a highly selective and targeted procedure.[2] As a result, SNB is now a minimally invasive surgical technique with low morbidity.[3]

This video shows the standard procedure for SNB in the inguinal region. The patient is a 62-year-old woman who had a primary melanoma on the right leg. The tumor had a Breslow thickness was of 1.8 mm and was not ulcerated (T2a). Scintigraphy identified 2 sentinel nodes in the right inguinal region.

Description of the Technique

The day before the operation, in the nuclear medicine department, the patient had received intradermal injections of 4 mCi of Nanocoll, which was distributed between 4 points around the scar of the primary melanoma. Dynamic study (30 images/20 s) was performed immediately, and static images (300 s) were also obtained. The skin overlying the SLNs was marked using indelible ink.[3]

Under general anesthesia in the supine decubitus position with slight external rotation of the right lower limb, the site of the SLNs is verified by portable gamma camera (Sentinella, Oncovision). Guided by this percutaneous localization of the site of the SLNs, the surgeon makes a superficial linear incision of 3 cm to 4 cm in the right inguinal region using a scalpel with a number 15 blade. The dissection is continued using Farabeuf separators, an electrosurgical forceps in coagulation mode, and blunt-tipped

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instruments (Bengolea forceps) until the fascial plane is reached. Throughout the procedure, the hand-held gamma probe is used as needed to guide the selective lymph node dissection. The areas of maximum scintigraphic uptake indicate the sites of the SLNs. When an SLN has been identified, peripheral tissue is separated and the node is excised, with careful coagulation of the pedicle.

After an SLN has been extracted, uptake is checked ex vivo with the handheld probe and portable gamma camera. This should be done away from the surgical field to avoid detection of uptake from the area around the primary tumor. Uptake in the surgical field is also rechecked by aiming the portable gamma camera directly at the surgical wound to rule out the persistence of foci of uptake corresponding to additional SLNs. If any more SLNs are identified, they must also be excised. In the case shown in this video, scintigraphy the day before the procedure identified 2 SLNs. However, the extraction of these 2 nodes revealed a third. This is a common occurrence in scintigraphy due to the overlapping of adjacent lymph nodes or nodes situated on superimposed planes. When the absence of further uptake in the surgical field has been confirmed, hemostasis is checked and the wound is closed by tissue planes. The SLNs, packed in containers with formalin, are sent to the pathology department, where histopathology is performed with hematoxylin and eosin and immunohistochemistry with HMB-45, S100, and Melan-A stains.

During the same operation, after excision of the SLNs, the surgical margins of the primary tumor are enlarged.

This video was recorded using a tripod-mounted Canon EOS 200D camera (Canon Inc., Japan) with a full high definition resolution of 1920 $\times$ 1080 pixels and 25 frames per second.

Indications, Contraindications, and Complications

SNB is a staging technique indicated in patients with primary cutaneous melanoma with a tumor stage of T1b or higher (Breslow thickness $\geq$ 1 mm or with ulceration and/or a mitotic rate $\geq$ 1 mitosis/mm^2). In patients with a primary melanoma having a Breslow thickness of less than 1 mm and mitosis, SNB is considered when the Breslow thickness is greater than 0.8 mm.[4]

Contraindications for SNB are determined by the patient's general state of health, the presence of severe comorbid conditions, and anesthesia risk. These aspects are assessed using tools such as the Karnofsky scale, the ECOG Performance Status, and the American Society of Anesthesiologists classification.

SNB is associated with a complication rate of less than 5%. The most common complications are as follows: seroma, lymphorrhea, hemorrhage, hematoma, infection, wound dehiscence, lymphedema, and complications associated with general or spinal anesthesia.[2,5,6]

Conclusions

SNB is a technique of intermediate difficulty for a surgical dermatologist specifically trained in the procedure. The availability of surgical procedures recorded in audiovisual formats, such as the one presented here, facilitates initial learning by demonstration for surgeons interested in gaining expertise in a particular technique.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.adengl.2018.05.004.

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