



ACTAS Derma-Sifiliográficas

Full English text available at
www.actasdermo.org



VIDEOS OF SURGICAL PROCEDURES IN DERMATOLOGY

Axillary Sentinel Lymph Node Biopsy: Video of the Surgical Procedure[☆]



Biopsia selectiva del ganglio centinela de localización axilar. Video quirúrgico

D. Moreno-Ramírez,^{a,*} L. Ferrándiz,^a T. Ojeda-Vila,^a F.M.I. Mendonça,^a P. de la Riva^b

^a Unidad de Gestión Clínica de Dermatología Médico-Quirúrgica y Venereología, Hospital Universitario Virgen Macarena, Sevilla, Spain

^b Unidad de Medicina Nuclear, Hospital Universitario Virgen Macarena, Sevilla, Spain

Introduction

Selective sentinel lymph node biopsy (SLNB) is the gold-standard technique for lymph node staging in patients with primary cutaneous melanoma. However, over the last 2 decades, the debate about SLNB has focused on the absence of any direct benefit on patient survival.¹ SLNB was developed as an alternative technique for lymph node staging with a lower surgical morbidity than prophylactic lymphadenectomy, which was performed on all patients with primary melanoma up to the 1990s. SLNB is now a surgical technique that, thanks to marking using nuclear medicine, can be highly selective. Marking also enables targeted dissection to be performed; this is associated with a lower surgical morbidity.²

The video is a step-by-step presentation of the standard surgical technique for axillary SLNB. We show the whole procedure in a 48-year-old man with an ulcerated primary melanoma in the left scapular region with a Breslow thickness of 1.60 mm (stage T2b), with scintigraphic identification of 3 sentinel lymph nodes (SLN) in the left axillary region.

Description of the Technique

The day before the operation, in the nuclear medicine department, the patient receives intradermal injections of 2 mCi of Nanocoll divided between 4 points around the scar of the primary melanoma. Dynamic study (60 images/20 s) is performed immediately, and static images (300 s) and multimodality single-photon emission computed tomography associated with x-ray computed tomography images are also obtained. The area of projection of the SLN is marked on the skin with permanent ink. The day of the operation, 20 to 30 min before anesthetic induction, Linfazurin patent blue dye, 2 ml, is injected (0.5 ml at each of 4 points around the scar of the primary tumor).³ Under general anesthesia, in the supine position and with abduction of the ipsilateral upper limb to 90° to 100°, the site of the SLN is determined percutaneously by portable gamma camera (Sentinella Oncovision). Using a gadolinium probe, the exact site of the surgical field is marked at the point of maximum uptake, and an incision of 4 to 6 cm is made. Subcutaneous dissection is continued until the clavipectoral fascia is identified. The manual probe is used as often as necessary to guide dissection until blue-green stained structures, corresponding to the SLNs to be excised, are identified in deeper planes. After excision, uptake by the SLN is checked ex vivo using the manual probe in association with the portable gamma camera; this must be performed away from the surgical field to avoid detecting the uptake in the area of the primary tumor. Similarly, uptake in the surgical field

[☆] Please cite this article as: Moreno-Ramírez D. Biopsia selectiva del ganglio centinela de localización axilar. Video quirúrgico. Actas Dermosifiliogr. 2016;107:425–426.

* Corresponding author.

E-mail address: dmoreno@e-derma.org (D. Moreno-Ramírez).

is checked using the portable gamma camera directly over the surgical wound; this must be done to exclude persistent foci of uptake corresponding to additional SLNs. If a positive reading is obtained, the identified structures must be excised. After confirming an absence of uptake in the surgical field, hemostasis is checked and the wound is closed by tissue planes. The SLNs are sent to the pathology department in containers with formol, and histopathology is performed with hematoxylin and eosin and immunohistochemistry with HMB-45, S-100, and Melan-A stains.³

Finally, in the same operation, after excision of the SLNs, the surgical margins are enlarged. When enlarging the margins, the radioactivity emitted by the area of the primary tumor may be found to overlap that from the lymph node region, as occurred in the case presented. In this situation, the gamma camera allows us to perform anteroposterior, lateral, and oblique projections and, together with the use of lead plates over the area of the primary tumor, this helps to differentiate the 2 zones.

The video presented was recorded using a GoPro® Hero4 (GoPro Inc, USA) handheld camera fixed to a headset worn by the surgeon, with a resolution of 720 p, 60 fps and narrow field.

Indications/Contraindications

SLNB is indicated in patients with primary cutaneous melanoma with tumor stage T1b or higher (Breslow thickness ≥ 1 mm or with ulceration and/or a mitotic index ≥ 1 mitoses/mm²). In those cases of primary melanoma with Breslow thickness less than 1 mm, and with mitoses, SLNB can be considered with a Breslow thickness above 0.75 mm.⁴

The contraindications of SLNB are determined by the general state of health of the patient, severe comorbid conditions, and anesthetic risk established using scales such as the Karnofsky and American Society of Anesthesiologists indices.

Complications

The complication rate of SLNB is less than 5%.² In a series by the Melanoma Unit of Hospital Universitario Virgen Macarena, the only complication observed was localized seroma, which developed in 3.64% of patients who underwent the operation.³ However, possible complications of the procedure include seroma-lymphorrhoea, hemorrhage, hematoma, infection, wound dehiscence, and complications associated with general anesthesia or spinal anesthesia (in the case of inguinal SLNB).

Conclusions

Instruments now available for the intraoperative identification and mapping of SLNs have changed SLNB into a technique with a low morbidity. For the surgical dermatologist, accustomed to complex reconstructions, the technique may be considered of intermediate complexity. However, as with all surgical techniques, SLNB requires appropriate training (> 20 cases), and routine practice with a minimum monthly number of operations (> 3 cases/month),⁵ in order to perform the operation with greatest safety and the lowest possible rate of error.^{5,6} In those centers in which these conditions are satisfied, knowledge of the natural history of melanoma and the surgical ability of the dermatologist will possibly make this specialist the most appropriate professional to indicate and perform SLNB.

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.2016.03.010.

References

1. Botella-Estrada R, Nagore E. Estado actual del ganglio centinela en el melanoma. *Actas Dermosifiliogr.* 2011;102:749–53.
2. Landi G, Polverelli M, Moscatelli G, Morelli R, Landi C, Fiscelli O, et al. Sentinel lymph node biopsy in patients with primary cutaneous melanoma: Study of 455 cases. *J Eur Acad Dermatol Venereol.* 2000;14:35–45.
3. Peral-Rubio F, de la Riva P, Moreno-Ramírez D, Ferrándiz L. Biopsia selectiva del ganglio centinela radioguiada mediante gammacámara portátil. Estudio observacional. *Actas Dermosifiliogr.* 2015;106:408–14.
4. NCCN Melanoma Guidelines 2015 [consultado 3 Sep 2015]. Disponible en: http://www.nccn.org/professionals/physician_gls/PDF/melanoma.pdf
5. Cox CE, Salud CJ, Cantor A, Bass SS, Peltz ES, Ebert MD, et al. Learning curves for breast cancer sentinel lymph node mapping based on surgical volume analysis. *J Am Coll Surg.* 2001;193:593–600.
6. Tafta L. The learning curve and sentinel node biopsy. *Am J Surg.* 2001;182:347–50.