AMBIGUOUS LYMPHATIC DRAINAGE IN PATIENT WITH PRIMARY CUTANEOUS MELANOMA: THE IMPORTANCE OF LYMPHOSCINTIGRAPHY

RAFAEL BANDEIRA LAGES,1 FLÁVIA LOGATTI,2 SABAS CARLOS VIEIRA,3 LINA GOMES DOS SANTOS,3 AND BENEDITA ANDRADE LEAL DE ABREU4

CASE REPORT

ABSTRACT

Introduction. Although in most patients lymphatic drainage from the primary melanoma first reaches a standard lymph node basin, a sentinel lymph node may be identified in an unusual location, in particular when the skin lesion is located in trunk, head and neck. Lymphoscintigraphy provides an objective and reliable method of locating sentinel lymph node and demonstrates that confident prediction of their location is not possible on clinical grounds.

Case report. A 58-year-old woman presenting a malignant melanoma located in the right subscapular region, with no palpable lymph nodes, was underwent a lesion excision with margins and sentinel lymph node biopsy. The preoperative lymphoscintigraphy revealed bilateral axillary drainage and the histopathological examination of these lymph nodes did not show presence of metastatic cells.

Comments. In the present case, the use of lymphoscintigraphy was extremely useful, especially for identify the presence of lymphatic drainage for two distinct basins. This case reinforces the usefulness of lymphoscintigraphy technique in primary cutaneous melanoma.

Key words. Lymphoscintigraphy; sentinel lymph node biopsy; melanoma; lymphatic metastasis

RESUMO

DRENADE LINFÁTICA AMBÍGUA EM PACIENTE COM MELANOMA CUTÂNEO PRIMÁRIO: IMPORTÂNCIA DA LINFOSCINTILOGRAFIA

Introdução. Na maioria dos pacientes, a drenagem linfática do melanoma atinge primeiro uma base linfonodal padrão. Porém, um linfonodo sentinela pode ser identificado em uma localização anormal, particularmente quando a lesão cutânea é localizada em tronco, cabeça ou pescoço. A linfoscintilografia mostra-se como método objetivo e confiável para localização de linfonodo sentinela e mostra que a predição dessa drenagem não é possível por parâmetros clínicos.

Relato de caso. Paciente de 58 anos com melanoma maligno na região subescapular direita, sem linfonodos palpáveis, foi submetida à excisão da lesão com margens e pesquisa de linfonodo sentinela. A linfoscintilografia pré-operatória revelou drenagem axilar bilateral e a análise histopatológica desses linfonodos não evidenciou metástases.

Comentários. No presente caso, o uso da linfoscintilografia foi extremamente útil, especialmente por identificar a presença de drenagem linfonodal para cadeias bilaterais. Este caso reforça a utilidade da técnica no melanoma cutâneo primário.

Palavras-chave. Linfoscintilografia; biópsia de linfonodo sentinela; melanoma; metástase linfática

INTRODUCTION

The concept of sentinel lymph node biopsy in melanoma relates to the fact that the tumor drains in a logical way through the lymphatic system, from the first to subsequent levels. Therefore, the first lymph node encountered (the sentinel lymph node) will most likely be the first to be affected by metastasis, and a negative sentinel node makes it highly unlikely that others nodes in the same lymphatic basin are affected. The histologic status of the sentinel lymph node has been found to be the strongest prognostic factor for survival and recurrence in patients with clinical negative lymph nodes.1,2

An essential prerequisite for a successful sentinel lymph node biopsy procedure is an accurate map of the pattern of lymphatic drainage from the primary tumor site in each patient. The preoperative lymphoscintigraphy

1 Graduate medical student, Universidade Federal do Piauí, Brazil.
2 Graduate medical student, Universidade de Ribeirão Preto (Unapuerp), São Paulo, Brazil.
3 MD, PhD, professor of Universidade Federal do Piauí, Brazil.
4 MD, PhD, professor of Universidade Estadual do Piauí, Brazil.

Correspondence: Dr. Sabas Carlos Vieira. Rua Félix Pacheco, n.º 2159, sala 305, Centro/Sul, Teresina-PI, Zip 64001-160. Internet: sabas.vieira@uol.com.br

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Figure. Preoperative lymphoscintigraphy revealing drainage to both axillae

DISCUSSION

Systematic mapping of the lymphatic system that drains the skin has been studied for several centuries. The understanding of cutaneous lymphatic drainage for most of the 20th century was grounded in the classic 19th century studies of Marie Philibert Constant Sappey, a professor of anatomy in Paris who mapped the lymphatic by cutaneous injections of red oxide of mercury and published a detailed and comprehensive atlas of lymphatic anatomy in 1874. The pathways of lymphatic drainage described by Sappey were clinically predictable and according to him the drainage from the skin of the trunk was always to nodes in the nearest groin or axilla. More recent investigations using lymphoscintigraphy have determined that there were zones of ambiguity: the entire head and neck area and a wide band of 10 cm from the midline and that, although skin sites usually drain to ipsilateral lymph node fields, contralateral drainage is not uncommon. More recent investigations using lymphoscintigraphy have determined that there were zones of ambiguity: the entire head and neck area and a wide band of 10 cm from the midline and that, although skin sites usually drain to ipsilateral lymph node fields, contralateral drainage is not uncommon.
watershed regions where lymphatic drainage is not very predictable.3,8

Lymphoscintigraphy is the injection of radioactive particles that are then imaged as they pass through afferent lymphatic vessels to their respective lymph node drainage basins. It may be performed up to 24 hours before operative treatment. Colloidal suspensions represent most of the radiopharmaceutical drugs used on the detection of sentinel lymph node. This is possible because the colloidal suspensions are bound to a radioactive tracer, usually technetium-99m, which radioactivity can be detected on the images obtained in a scintillation chamber or a portable detector. The technetium-99m has a short half-life (around 6 hours), which results in smaller exposition of the patient besides easy biodisponibility and lower costs. Between the colloid-based radiopharmaceutical drugs for the sentinel lymph node biopsy procedure, the most used are dextran and phytate, both marked with technetium-99m.1,9

According to Paiva et al., there is no statistically significant difference between dextran and phytate in the sentinel lymph node identification, but the phytate migrated to fewer lymphatic basins beyond the SLN and with less intensity.9

The preoperative lymphoscintigraphy accurately maps lymphatic drainage from sites of cutaneous melanoma to the draining sentinel lymph nodes and, therefore, has been applied to the localization of the true nodal drainage basins of melanomas situated in regions of highly variable drainage, in particular trunk, head and neck.1,2,4 In a recent review of 1,135 melanoma cases, sentinel lymph node was detected with radioisotopes in 97% of patients, with a negative predictive value of 100%.8

In 412 (39%) of the 1,057 patients with primary cutaneous melanoma on the back who had lymphoscintigraphy at the Sydney Melanoma Unit, at least one sentinel lymph node was on the opposite side of the body to the melanoma site. As expected, most patients had drainage to the axilla, however, drainage was to the contralateral axilla in 256 (28%) patients, and to both axillae in 228 (25%) patients.1,6 Morris et al., found aberrant drainage in 12 (29%) of the 41 patients with truncal melanoma, with 5 (12%) patients presenting bilateral axilla pattern of drainage. Aberrant drainage was highest for head and neck lesions (64%), but uncommon for extremity lesions (6%).10

The possibility of lymphatic drainage to more than one sentinel lymph node and the presence of ambiguous drainage are factors that may greatly compromise the efficacy of lymphonodectomy in the treatment of melanoma. It is in these groups of patients, those with a meaningful risk of death from disseminated disease but no clinical proof of dissemination, that lymphoscintigraphy is becoming a necessary and powerful tool, allowing each nodal basin so identified to be evaluated with an sentinel lymph node biopsy.3,6,9,11 This case report reinforces the usefulness of lymphoscintigraphy technique in primary cutaneous melanoma.

DISCLOSURE

No potential conflict of interests was reported.

REFERENCES


