

What Is the Color of Your Lymph Node?

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Summary: We describe a case of tattoo ink in an axillary lymph node, which was observed during an axillary dissection and mastectomy surgery. It is important to be aware of this phenomenon and correctly identify it at the time of surgery, as a misdiagnosis can have serious consequences. (*Plast Reconstr Surg Glob Open* 2018;6:e1990;doi:10.1097/GOX.0000000000001990;Published online 13 December 2018.)

Tattoos are becoming an ever-increasing phenomenon in western culture, though its exact prevalence remains unknown.¹ The tattoo, being composed of skin pigment deposits,² may occasionally migrate to regional lymph nodes, causing difficulty in identification and diagnosis of medical problems. These pigment deposits may be mistakenly identified as the blue dye in a sentinel node, clinically misdiagnosed as malignant melanoma nodal metastasis or mimic malignant calcifications in mammography.^{1,3-5} This phenomenon may mislead the surgeon and influence the surgical staging, the surgery, and the adjuvant treatment.

CASE

A 44-year-old woman presented to our breast clinic in September 2017 with an inflammatory breast cancer and positive axillary lymph nodes. She was planned for surgery, soon after completing neoadjuvant chemotherapy treatment (paclitaxel). She was advised to undergo a mastectomy and axillary dissection and a reduction mammoplasty to the contralateral side due to gigantomastia. Surgery was uneventful apart from a random finding of black axillary lymph nodes (Figs. 1, 2), which were sent for histologic examination. Her arm was heavily tattooed, raising the suspicion of tattoo pigment that migrated to the nodes. However, due to the dramatic presentation, the nodes were sent to pathological evaluation. The histologic examination indeed revealed a tattoo ink in the lymph nodes, with no signs of malignancy (Fig. 3).

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DISCUSSION

More popular than ever, tattoos have become part of the mainstream culture, shown to be decorating the bodies of 8.5–16% of the population in the United States and Australia.⁶⁻⁸ Dermal activated macrophages cells containing tattoo ink migrate to the draining lymph nodes and can cause reactive lymphadenopathy.^{1,2,9} However, more significant, these black dye-colored



Fig. 1. Ex-vivo photograph of tattooed axillary lymph node, a macroscopic identification of tattoo pigment in the lymph node cortex and the adjacent soft tissue.

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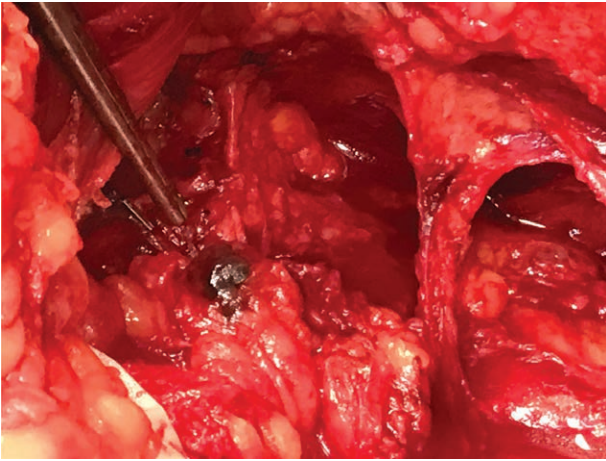


Fig. 2. Dark brown-black sentinel lymph node in vivo.

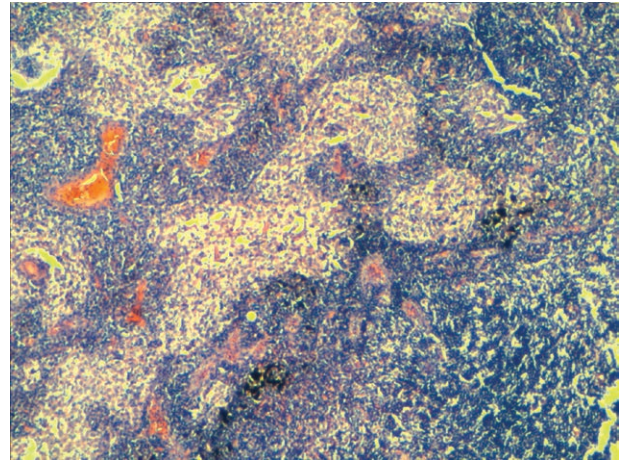


Fig. 3 Histopathologic specimen of the lesion, tattoo pigments deposits in axillary sentinel lymph node.

nodes have been misdiagnosed during surgery as melanoma metastases and led to abnormal identification of sentinel lymph node.^{6,9} Even in the western world, there is no standardization regarding tattoo dye ingredients, often containing heavy metals.¹ In our case, the patient had a big black tattoo in her right arm, the source for the incidental finding of a black lymph node during the axillary dissection. Though its color may vary depending on the tattoo composition,¹ the other differential diagnoses of dark colored lymph node are metastatic melanoma and a blue dye colored lymph node (used to identify the sentinel node).^{6,9} A thorough history and a comprehensive physical examination can aid in obtaining the correct diagnosis, followed by an accurate histological examination, leading to the final diagnosis.^{1,7,9} To the best of our knowledge, only a handful of cases describing such a finding have been previously described in the English literature.^{1,3,4,8,9}

In conclusion, tattooing, this ever-increasing custom, may cause pigment deposition leading to pigmented axillary nodes. It is important to be aware of this phenomenon and correctly identify it, as a misdiagnosis can have serious implications.

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