

# A Tattoo and Localized Lymphadenopathy: A Case Report

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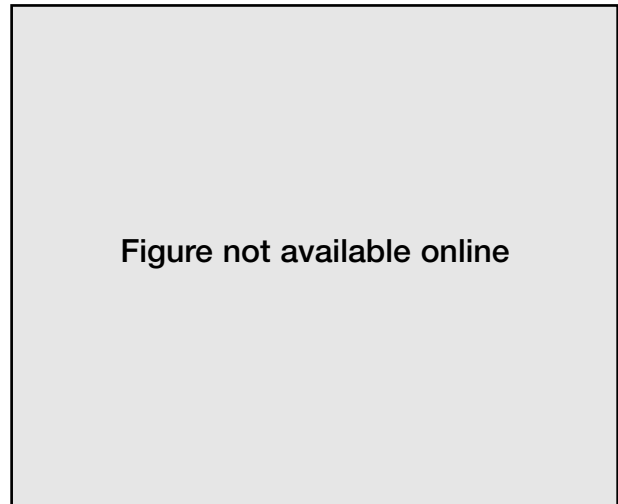
*We report the case of a left inguinal lymph node enlargement in a young man. A tattoo was present in close proximity to the lymph node and had preceded its enlargement by several years. The lymph node was removed surgically, and pathologic examination showed it to contain dark pigment material characteristic of a tattoo. The clinical significance of this finding is discussed, and the relationship of tattoo lymphadenopathy to inflammatory skin reactions and to dermatopathic lymphadenopathy is considered.*

## Case Report

A 30-year-old male with no previous medical problems presented with a 2-year history of a painless swelling in the left groin. Physical examination was negative except for a 3.0-cm raised, subcutaneous, soft, mobile, nontender, oval mass in the left midinguinal region. A butterfly tattoo measuring 6 cm in diameter, composed of red, green, purple, and black pigments, was present on the anterior left thigh 3.5 cm lateral to the mass. According to the patient, the tattoo had been present for 10 years. Surgical exploration of the mass (Figure 1) revealed an enlarged lymph node, which was excised and sent for pathologic examination.

The lymph node was accessioned shortly after surgical removal, without any fixative. After sectioning, it was placed in 10% formalin. Slides were prepared with hematoxylin and eosin and reticulin stains and, later, peroxidase bleaching to remove melanin. The sections were examined at low and high-dry powers (original magnification  $\times 40$ ) with optical microscopy and polarized light.

The specimen consisted of a lymph node measuring 2.5 cm in diameter. The capsule was thin and



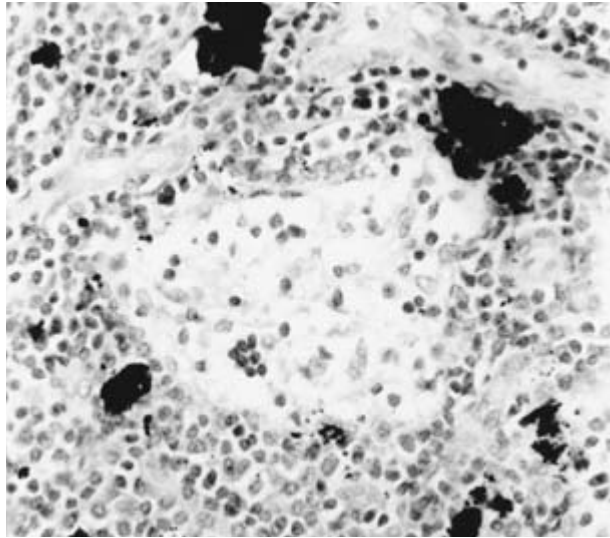
**Figure 1.** A butterfly tattoo measuring 6 cm at its largest diameter on the anterior left thigh. Adjacent scar tissue from the excision of a lymph node is present on the left groin (arrow).

smooth, and the cut surface was soft, pinkish-grey, and flat. Microscopic examination revealed normal lymph node architecture with areas of lymphoid hyperplasia and sinus histiocytosis. Proliferation of small blood vessels was also prominent. In several places, particularly in regions of paracortical lymphoid hyperplasia, there was a scattering of irregularly shaped particles of intensely black amorphous material ranging from less than 1  $\mu\text{m}$  in diameter to aggregates of approximately 50  $\mu\text{m}$  in diameter (Figure 2). In one focus, particles of this material were found close to a group of Russell bodies. Several tiny bluish particles were found within or near the black material. This material was nonrefractile in polarized light and was not removed by bleaching.

## Comment

Tissue reactions to tattoos are rare and are usually localized to the site of the tattoo.<sup>1</sup> These reactions are inflammatory and are of both the granulomatous and nongranulomatous type. Granulomatous reactions

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**Figure 2.** Photomicrograph of excised lymph node. Black irregular particles of tattoo pigment, ranging from less than 1  $\mu\text{m}$  to about 50  $\mu\text{m}$  in diameter, are scattered in the paracortical lymphoid tissue. The sinuses are filled with histocytes (H&E, original magnification  $\times 400$ ).

are of 2 types: sarcoidal or foreign-body. Nongranulomatous reactions show a perivascular lymphocyte infiltrate with pigment-containing macrophages. A lichenoid response that can resemble lichen planus is sometimes seen. Alternatively, the reaction may assume a pseudolymphomatous nature with a dense lymphocyte infiltrate containing histiocytes and tattoo pigment granules.

Reactions in lymph nodes that drain the site of a tattoo are rare. A computerized MEDLINE search of the literature failed to reveal a single article of such a reaction in the past 34 years. In chronic skin conditions such as exfoliative dermatitis or psoriasis, enlargement of superficial lymph nodes, particularly in the axilla or inguinal regions, frequently develops.<sup>2</sup> This phenomenon is called dermatopathic lymphadenopathy. Macroscopically, the nodes are usually

no more than 2 cm in diameter. The cut surface of the nodule sometimes shows a distinct yellowish-brown mottling. Histologically, there is expansion of the paracortex with an infiltrate of pale staining phagocytic cells, which may contain granules of melanin or lipid material. In neoplastic skin disorders such as mycosis fungoides, the accompanying dermatopathic lymphadenopathy may have the additional feature of a malignant lymphoid cell infiltrate.<sup>3</sup> Lymph-node biopsy is rarely performed in cases of dermatopathic lymphadenopathy because either the cause of the enlarged lymph node is apparent or the node is not large enough to attract attention.

A common feature of dermatopathic lymphadenopathy is the presence of pigment granules; in the former, granules of tattoo pigment, in the latter, melanin. Tattoo lymphadenopathy could be considered a specialized case of dermatopathic lymphadenopathy, which has been reported as a result of allergy to a foreign substance.<sup>4</sup>

Despite the apparent rarity of clinically significant tattoo lymphadenopathy, this diagnosis should be considered in the appropriate setting of an enlarged lymph node near the site of a tattoo.

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