

TATTOO INK MIMICS LYMPHOMA

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The diagnosis seemed obvious, as the young Australian woman presented with symptoms that suggested lymphoma. However, to the surprise of the pathologist, there was not a cancer cell to be found in her lymph node tissue.

Instead, after undergoing a full workup that included blood work, scans, and biopsies, her physicians concluded that she had granulomatous lymphadenitis that was probably triggered by a hypersensitivity reaction to tattoo pigment.

The case report was [published](#) October 3 in *Annals of Internal Medicine*.

The authors report that the patient, a 30-year-old woman, presented with bilateral axillary lumps that had persisted for the preceding 2 weeks. Upon physical examination, several "rubbery nontethered nodes up to 1.5 cm in diameter" were detected on both sides, although there was no other palpable lymphadenopathy.

She also had a large black-ink tattoo that covered her back, which was 15 years old, and a second, more recent, black-ink tattoo on her left shoulder.

Positron emission tomography–computed tomography revealed multiple enlarged lymph nodes in the axillary, hilar, and mediastinal areas, report the authors, "with a peak standardized uptake value of 17.7 (markedly glucose-avid) and maximal size of 13 × 23 mm."

These findings were interpreted "as consistent with lymphoma."

"Ninety-nine times out of 100, [this] will be lymphoma," said coauthor Christian Bryant, BSc, MBBS, PhD, from the Royal Prince Alfred Hospital in Sydney, Australia, as [reported](#) by CNN.

The patient reported no other symptoms, such as fever, night sweats, weight loss, or respiratory problems. She was a nonsmoker, reported a history of cluster headaches, and had previously undergone breast augmentation surgery about 10 years earlier. The patient was also not receiving any medications except for oral contraceptives.

A fine-needle aspiration was inconclusive, and a subsequent excisional biopsy of a left axillary node revealed an enlarged, black node (28 × 17 × 13 mm). Microscopic examination showed that the nodal architecture had been replaced by well-formed epithelioid granulomas with scattered multinucleate giant cells.

Results of all tests for mycobacteria, fungi, and malignancies were negative.

The authors note that the pigments used to create a tattoo can cause an inflammatory reaction in the epidermis and dermis, which occasionally leads to reactive local lymphadenopathy.

Additionally, there have been cases reported of delayed lymphadenopathy related to tattoo pigment, including one that occurred 30 years after the tattoo was made. In these reports, they write, "lymphadenopathy was initially mistaken for malignant disease, particularly for melanoma." As [previously reported](#) by *Medscape Medical News*, tattoo ink from 14 tattoos that extensively covered the legs of a patient with cervical cancer migrated into the lymph nodes and was mistaken for metastatic disease. The patient was initially diagnosed with stage IB disease, and her condition was upgraded; 40 of the patient's lymph nodes were surgically removed.

Tattoo ink has also migrated to the [regional nodes](#) in patients with breast cancer, melanoma, testicular seminoma, and vulvar squamous cell carcinoma. But whether tattoos are related to the development of cancer is unclear.

As [reported](#) by *Medscape Medical News*, a recent review found that pigments in tattoo ink migrate from the skin to the lymph nodes, leading to chronic enlargement. The particles ranged in size in the human skin samples, but only the nanoparticles migrated into the lymph nodes. The long-term effects of this were not studied and are yet unknown.

In the present case report, the patient noted that her tattoos had become raised and itchy for few days each month. However, after being monitored for 10 months, her symptoms appear to have subsided.

What is unusual about this patient, the authors emphasize, is that it seems to be the first known case of a tattoo causing a reaction in the lymph nodes without causing one on the skin. Granulomatous reactions to tattoo pigment have been well described, they point out, and can manifest as foreign-body type, sarcoidal, or necrobiotic. Sarcoidal granulomas involving tattooed skin can be the first presentation of systemic sarcoidosis, but in this case, the situation is "unique in that there was no skin reaction, only granulomatous change within the lymph nodes," write Dr Bryant and coauthors.

"In addition, no cutaneous, pulmonary, or systemic symptoms were observed to suggest systemic sarcoidosis," they add.

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