



Case #103

NAME Educational Activities Committee

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1. A 35-year-old man with a medical history of hypertension was found unresponsive, prone on the couch in his residence. Autopsy revealed intense lividity on the anterior aspects of the body, including neck and face. On reflecting the scalp, the finding depicted in the image was observed.

This finding is most likely associated with which of the following?

- Increased fragility of the bone
- Calcium chelation and incorporation in bone tissue
- Metastatic skin malignancy
- Abnormal morphology of the thyroid cartilage
- Postmortem artifact due to intense lividity and prone position

Answer...

B. Calcium chelation and incorporation in bone tissue (CORRECT ANSWER, 46.11% of responses)

“Black bone” refers to a rare side effect of long-term tetracycline antibiotic therapy, including minocycline, where calcium chelation can result in bone discoloration. This phenomenon occurs due to the deposition of the tetracycline compound in bone tissue, leading to a characteristic dark discoloration, often described as black or brown. Discoloration/hyperpigmentation may also involve the inner part of the calvarium, cranial bases, and other body districts.

In the presented case, the subject was on minocycline therapy, and autopsy also revealed black discoloration of the thyroid gland.



Other responses

A. Increased fragility of the bone (6.08% of responses)

Bone fragility refers to a condition where bones become weak and brittle, making them more susceptible to fractures even with minimal trauma or stress. This condition is often associated with reduced bone mass and deterioration of bone tissue, but bone discoloration is typically not seen. Pathologic conditions and factors leading to bone fragility include osteoporosis, osteomalacia, Paget's disease of the bone, hyperparathyroidism, and certain medications.

C. Metastatic skin malignancy (3.21% of responses)

While bone metastases are common in melanoma, they mostly involve the spine and pelvis, and only rarely affect the skull. Metastases generally appear as focal nodules rather than widespread discoloration of the bone.

D. Abnormal morphology of the thyroid cartilage (8.78% of responses)

While the thyroid gland and the larynx might become black with minocycline use, there is no evidence of thyroid cartilage morphologic abnormalities.

E. Postmortem artifact due to intense lividity and prone position (35.81% of responses)

Position can cause severe subscalpular and galea capitis congestion but not direct black discoloration of the bone.

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