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Undiagnosed Ochronosis Presented as Severe Osteoarthritis With Concomitant Osteoporotic Fracture

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I read with interest the article by Zabihiyeganeh et al., titled: "undiagnosed ochronosis presented as severe osteoarthritis with concomitant osteoporotic fracture" (1). While appreciating the great effort of the authors to report this interesting case, I am concerned whether the evidence presented in this paper was convincingly adequate to support the diagnosis of ochronosis/alkaptonuria. According to the literature, diagnosis of ochronosis depends on a combination of clinical findings and paraclinical investigations (2); however, I believe this article did not provide enough information required to establish this diagnosis.

Other than degenerative joint disease, which is a common and non-specific finding in this patient's age group (56-year-old), this paper mainly relies on the pigmentation of the first and second fingers as well as the presence of dark urine to confirm the diagnosis of ochronosis. No laboratory or histopathological investigations were performed to back up the diagnosis.

Hyperpigmentation limited to the first and second fingers, as happened in this patient, is not a typical ochronotic finding. Characteristically, patients with this metabolic disorder present with pigmentation and discoloration of the areas at the head and neck regions (i e, ear cartilage, eye and sclera and around the nose and mouth). Indeed, a major group of these patients are asymptomatic until ochronotic changes, in the form of bluish pigmented patches in the sclera or thickened discoloration of the ear cartilage, occur in the 4th decade of life (2). In fact discoloration of fingers in this patient, as was shown in Illustration 1 in the article, may simply occur following prolonged use of some topical creams such as hydroquinones that are commonly used among females for cosmetic purposes (3).

Furthermore, ochronosis is defined as "deposition of dark pigments in cartilage and connective tissues due to abnormal metabolism of homogentisic acid (alkaptonuria)" and previous reports of total joint arthroplasty (either in hip or knee joints) in these patients revealed a gross black discoloration of the cartilage, joint capsules and ligaments, intraoperatively (4). Although this patient underwent a total hip replacement, during surgery these findings were not noted.

Authors of this article did not mention the frequency or characteristics of the dark urine in this patient, however, a variety of medical, surgical or pharmacological factors may contribute to the change of the urine color. The corner stones of diagnosis of ochronosis are the examination of the urine to measure homogentisic acid (HGA) or histopathological examination with hematoxylin-eosin staining confirming the ochronotic pigments in the tissue (2, 5). Synovial fluid examination of affected joints also may show characteristic frequent pigmented fibrillar connective tissue, which are golden-brown with microscopy, while being black on gross examination. Unfortunately none of these critical tests, as honestly was mentioned by the authors, were performed in this report.

Finally, it is shown that prolonged exposure to silver (Ag) or arsenic may be associated with similar symptoms (6). This report did not include any clues showing the authors had already considered these conditions in the differential diagnoses.

I believe this interesting study could be improved by considering these points in its context.

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