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# Petrified Ears: Benchmark for a Systemic Disease

Taşlaşmış Kulaklar: Sistemik Hastalık için Bir İşaret

## **Dear Editor,**

Calcification of the auricular cartilage termed as "petrified ears" is a rare condition characterized by stiffness of auricular cartilages making them non-malleable and unable to get folded. Though appearing as an insignificant finding, it may be manifestation of an underlying systemic condition with masked systemic deteriorations. We present here report of a patient who presented with petrified ears and was found to have alkaptonuria.

Our patient, a 40-year-old male, presented with three-years' history of progressive stiffness of ear pinna, two-years' history of off and on swelling of knees and one-year history of discoloration of skin over thumb, index, and middle fingers in both hands. He also had a lifelong history of darkening of urine. On examination, he had non-foldable, thickened, firm pinna with a few palpable hard papules and hyperpigmentation of overlying skin (Figure 1a, 1b). The ulnar borders of hands and fingers showed bluish-grey hyperkeratotic plaques of variable sizes (Figure 1c, 1d). He had wasted right leg with atrophy of overlying skin and right sided pes cavus (Figure 1e). Crepitus was positive in both knees and straight leg raising was normal. He had no tenderness over spine. His hemoglobin was 11.9 g/dL (normal:  $\geq 13 \text{ mg/dL}$ ) and total leucocyte count was slightly low ( $3.5 \times 10^9$ /L; normal:  $5-11 \times 10^9$ /L), however, platelet count, thyroid function tests, plasma glucose, serum calcium, parathyroid hormone, and vitamin D<sub>3</sub> levels, and urine routine examination were normal. On urine visual examination,



Figure 1. (a, b) Thickened pinna with palpable hard papules and hyperpigmentation of overlying skin (c, d) bluish-grey hyperkeratotic plaques over ulnar borders of hands and fingers (e) right sided pes cavus (f) dark colored urine after 24-hour exposure to open air

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Turkish Journal of Dermatology published by Galenos Publishing House. his urine turned dark when kept open in the air for 24 hours (Figure 1f). The X-rays showed osteoarthritic changes in knees (Figure 2a, 2b), calcification of ear pinna (Figure 2c, 2d) and intervertebral discs (Figure 2e, 2f), and varus deformity of the right foot. Histopathological evaluation was refused by the patient because of its invasiveness. Thus, clinical findings, urine darkening, and cartilage calcifications on X-rays supported the diagnosis of alkaptonuria, though the patient never reported back pain and his spine examination was clueless.

Petrified ears are the pathological result of either calcification or very rarely ossification, both being clinically indifferent. The predisposing pathologies are trauma, frostbite, Addison's disease, hypo or hyperthyroidism, hypopituitarism,



Figure 2. X-rays showing (a, b) reduced tibiofemoral joint space and patellar lipping with soft tissue calcifications (c, d) calcification of both ear pinna (e, f) intervertebral disc calcification and vacuum phenomenon i.e. loss of intervertebral disc hypoparathyroidism, vitamin D intoxication, sarcoidosis, scleroderma, diabetes mellitus, and alkaptonuria (1-5).

The exact incidence of petrified ears is not known because of rarity of reporting. The auricular cartilages are affected often bilaterally, either partially or completely. The patient presents with stiffness of ears with or without pain and/ or cosmetic defacement (6). Once noticed, the useful investigations to identify a systemic disorder are: a complete blood count, serum calcium, phosphate, vitamin D, and parathyroid hormone levels, liver, renal, and thyroid function tests, and fasting plasma glucose levels (6). A skull X-ray may demonstrate the pinnal hyperdensity, however, a temporal bone computerized tomography scan may delineate the ossification more precisely (4,7). The histopathological examination differentiates between calcification and ossification but is not necessary for diagnosis (4,5).

Petrified ears have a self-limiting course. Nevertheless, the underlying systemic condition must be evaluated and corrected or controlled and the ear must be protected from future trauma (6). For symptomatic patients, the treatment is generally symptom oriented because reversal of ossification or calcification is not possible. Surgical management, through wedge resection of the affected cartilage or reduction of concha has been successful in few reported cases (4,7).

Concluding, petrified ears can be an indication of the underlying systemic disorder with masked findings and must be expeditiously explored to reduce patient's morbidity due to adverse effects of the disorder.

### Ethics

Peer-review: Externally peer-reviewed.

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