

Auricular calcification: Case report of petrified ears in a woman

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Abstract

Auricular calcification (Petrified ears) is one of the rare diagnoses in ENT outpatient clinics. Although auricular calcification is often asymptomatic and does not require treatment, it is a critical diagnosis since it may develop secondary to life-threatening endocrinopathies. A 33-year-old female patient was admitted to our clinic with increasing stiffening in both auricles for one year. On physical examination, bilateral tympanic membranes, external auditory canals, and auriculas had a natural appearance. Apart from lobules, the bilateral auricle had lost its elasticity. Computed tomography of the temporal bones showed bilateral calcification of auriculas and external auditory canals with normal soft-tissue density of the overlying subcutaneous tissues. In our study, a patient who was followed up due to pituitary insufficiency, and she has complained about the progressive loss of elasticity in both auricles was discussed.

Keywords: Auricula; calcification; endocrinopathy

INTRODUCTION

Auricular calcification (Petrified ears) is one of the rare diagnoses in ENT outpatient clinics. In previous studies, the prevalence of the disease varies between 0-23.5% in temporal computed tomography (CT) evaluations of selected patients (1,2). Since the patients are mostly asymptomatic, the diagnosis is usually made randomly (3). Patients usually have ectopic calcification or ossification secondary to hypercalcemia, which mostly results from endocrine and metabolic diseases. Trauma and frostbite are also common causes of the disease (3).

Although auricular calcification is often asymptomatic and does not require treatment, it is a critical diagnosis since it may develop secondary to life-threatening endocrinopathies. In our study, a patient who was followed up due to pituitary insufficiency, and she has complained about the progressive loss of elasticity in both auricles was discussed.

CASE REPORT

A 33-year-old female patient was admitted to our clinic with an increasing stiffening in both auricles for one year. There wasn't any abnormality in the audiometric examination. On physical examination, bilateral tympanic membranes, external auditory canals, and auricles had

a natural appearance (Figure 1). Apart from lobules, the bilateral auricle had lost its elasticity. Computed tomography of the temporal bones showed bilateral calcification of auricles and external auditory canals with normal soft-tissue density of the overlying subcutaneous tissues (Figure 2).



Figure 1. The patient's auricles with normal appearance

When the patient's detailed history is taken; It was learned that the patient had viral meningitis 2.5 years ago, and partial pituitary insufficiency developed accordingly. It was learned that the patient was diagnosed with

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autoimmune thyroid disease in the laboratory and that ultrasound examination was performed at the time. Also, the patient became pregnant three months after the diagnosis of pituitary insufficiency. The patient has been on hydrocortisone and levothyroxine sodium treatment for pituitary insufficiency. The patient had no local trauma and a cold bite history. The patient's laboratory examinations revealed that somatomedin-c was low. Other laboratory findings of the patient were within normal limits. An incisional biopsy was recommended for histopathological evaluation, but the patient did not accept the intervention. The patient was followed up, and control was recommended after six months.

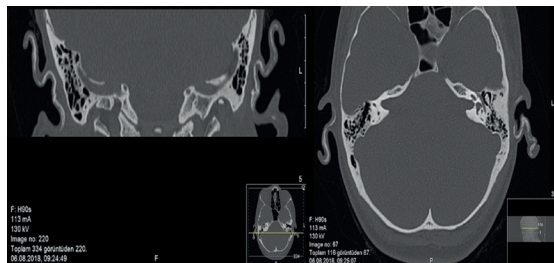


Figure 2. Computed tomography images of the patient; bilateral diffuse auricular calcification

DISCUSSION

Elastic cartilage contributes to the auricle, outer auditory canal, nose, and epiglottis in the head and neck region. Physiologically, ossification or calcification in cartilage does not occur in these areas. Auricular elastic cartilage is quite soft and painlessly manipulable. With calcification or ossification of this cartilage, its flexibility decreases and becomes petrified. Although petrification occurs mostly due to calcification, it can rarely develop due to ossification (4). The petrified ear may result from local damage such as cold bite, mechanical trauma, or as a result of systemic and inflammatory diseases (3).

The cold bite is the most common cause of auricular calcification and ossification (5,6). Other local causes; repeated cold exposure, mechanical trauma, repetitive auricle manipulation, radiotherapy, acne scar, and insect bite (7). Metastatic calcification of the auricle may be observed due to hypercalcemia in adrenal insufficiency. It is believed that cortisone deficiency contributes to the development of hypercalcemia not only in Addison's disease but also in pituitary insufficiency and adrenogenital syndrome (8, 9). Hypertension, diabetes, alkaptonuria, systemic chondromalacia, recurrent polychondritis, scleroderma, polyarthritis nodosa, acromegaly, hyperthyroidism, and hyperparathyroidism are other systemic causes of auricular calcification (6,10,11).

Machado et al. presented an encephalopathic case that developed a petrified ear due to pituitary insufficiency that occurs after pregnancy (12). Similarly, our patient has a history of intracranial infection, pregnancy, pituitary insufficiency. Furthermore, both our patient and the patient

presented by Machado et al. had autoimmune thyroid disease. The fact that there is such a similarity between the two cases suggests that intracranial infection, pituitary insufficiency, pregnancy, and autoimmune thyroid disease may contribute to the etiology of the petrified ear.

The clinical signs and symptoms of the petrified ear may be various. Although patients are generally asymptomatic, some patients feel discomfort when pressure is applied, such as sleeping on the ear. Hearing loss is rarely observed in these patients. There is no clinical difference between auricular calcification and ossification (13). Histopathological examination can be done to confirm the diagnosis and to distinguish between calcification and ossification. Most of the patients are asymptomatic, and there is no need for specific treatment. The disease may progress over time and also affect the outer ear canal. The disease generally demonstrates bilateral involvement and is more common in men. In a study by Gossner et al. he examined the CT images of 200 patients retrospectively; 6.5 % of the patients showed calcification or ossification in the auricula, 12.5% of the patients in the external ear canal, and 0.5% of the patients in both cartilages (2). In our patient, bilateral calcification of auriculas and outer auditory canals were observed.

CONCLUSION

In conclusion, auricular calcification is a rare clinical entity that accompanies endocrinopathies such as pituitary insufficiency. It is critical to evaluate these patients in terms of life-threatening metabolic, endocrine and other systemic diseases.

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Conflict of interest: The authors declare that they have no competing interest.

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