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Case report

Tumoral calcinosis of the cervical spine in a dialysis patient. Case report and review of the literature

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ABSTRACT

The authors present a case of tumoral calcinosis (TC) in a patient with chronic renal insufficiency. The clinical course, imaging features and microscopic findings are detailed. A 60-year-old woman with a 4-year history of hemodialysis presented with a painful mass in the right posterior cervical triangle. The neuroimaging revealed polycystic mass bulging from the C3–C5 facet joints and lamina on the right. The majority of cystic mass was excised and microscopic features of the specimen were consistent with TC. Tumoral calcinosis is a rare disease characterized by calcium salt deposits in periarticular soft tissue, which enlarge to form tumor-like cystic masses containing chalky calcareous material. TC is typically seen around large joints but rarely in the spine. Review of past publications provided six cases of TC involving the spine in dialyzed patients.

1. Introduction

Pathology and clinical manifestation. Tumoral calcinosis (TC) is characterized by calcium salt deposits in periarticular soft-tissue. The lesions enlarge over time and form cystic tumors with fibrotic capsule containing chalky semiliquid material [1–11]. Microscopically, the content is composed of calcium salt deposits (mainly calcium hydroxyapatite), intermixed with epithelioid elements, histyocytes, lymphocytes, macrophages and multinucleated giant cells [1–7,10,12]. The development of tumors is asymptomatic until compression of the surrounding structures occurs and causes local pain, joint motion limitation or neurologic symptoms. In advanced stages the cysts may evacuate through fistulae draining white chalky fluid [8,13]. TC most commonly involves extensor surface of large joints, like hip, elbow, shoulder, foot and wrist [1,5,6,8].

Spinal involvement. Spinal location, which was first recognized by Riemenschneider and Ecker in 1952 [9] is considered to be very rare [3,5,13–33]. In 2011, Kalani et al. reviewed the literature bringing to light 41 individuals with TC of the spine

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reported by that time [19]. Additionally, six cases were reported between 2011 and 2015 [2,15,16,19,21,33] and prior Pakasa and Kalengayi (1997) mentioned four cases diagnosed by means of biopsies of lumbar spine [7]. The largest clinical series of 21 patients with spinal TC was published in 2001 by Durant et al., who concluded that histology of paraspinal lesions was identical to that of TC seen elsewhere in the body [3]. We report cervical spine TC in a patient undergoing long-term hemodialysis. To the best of the authors' knowledge only six cases of spinal TC in dialyzed patients were described apart from this given report [11,14,15,18,22,27]. The aim of our paper is to accumulate the knowledge regarding this rare disease of the spine.

2. Case report

History and examination. A 60-year-old woman was admitted in April 2014 for treatment of cervical spine tumor. Since 2009 she has been on hemodialysis for chronic renal failure. She reported a 4-month history of progressive right-sided neck pain radiating to the occiput, right ear, right shoulder and arm associated with numbness of the right hand; she did not recall any trauma. Examination revealed a palpable tender mass in the right posterior cervical triangle while cervical rightward rotation was limited to 45°. Neurologic examination revealed paresis of right deltoid and biceps muscles (3/5), decreased right deep tendon reflexes (biceps, brachioradialis and triceps) as well as hypoesthesia of fingers of the right hand.

Laboratory studies. Laboratory tests showed slightly elevated serum phosphorus of 4.98 mg/dl (normal: 2.50–4.50), whereas white blood cell count, serum calcium, parathyroid hormone and C-reactive protein were all within normal limits.

Imaging findings. Cervical computed tomography (CT) scans revealed soft tissue partially calcified masses related to the right facet joints and right laminae from C3 to C5, partially sclerotic C4 vertebral body as well as spondylotic changes

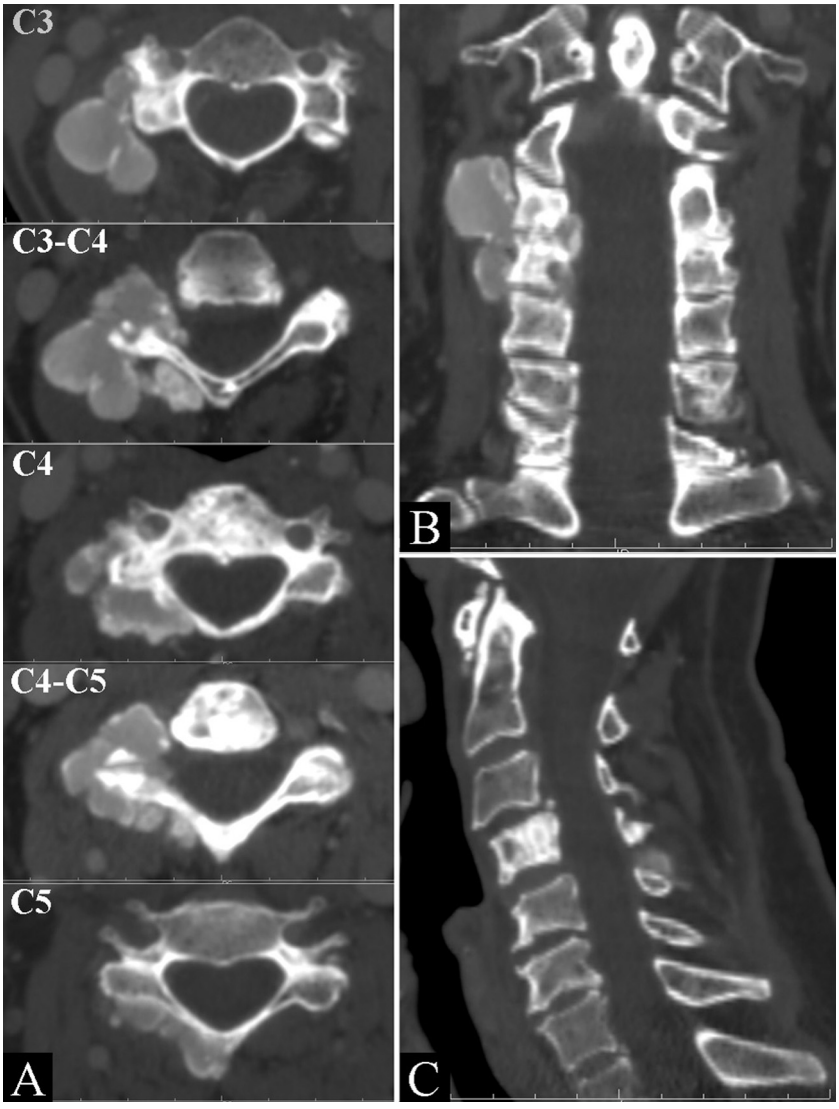

Fig. 1 – Axial CT scans (A) and coronal reconstruction (B) show lobulated partially calcified masses with sclerotic rim involving right facet joints and laminae of C3–C5 vertebrae. The masses narrow down the neural and transverse foramina also penetrate into the spinal canal at C3/C4 level. The sagittal reconstruction (C) show degenerative discs disease and anterior dislocation of C3; the C4 vertebral body appears sclerotic.

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