## **Comments on Brown Tumor of Cervical Spines**

Selahattin Ozyurek<sup>1</sup>, Aziz Atik<sup>2</sup>

<sup>1</sup>Department of Orthopaedics and Traumatology, Aksaz Military Hospital, Mugla, Turkey <sup>2</sup>Department of Orthopaedics and Traumatology, Balikesir University Hospital, Balikesir, Turkey

Dear Editor,

We enjoyed reading the case report entitled "Brown tumor of the cervical spines: a case report with literature review" by Alfawareh et al. [1]. We would like to commend the authors for their detailed and valuable work.

Brown tumor, an uncommon focal giant cell lesion, is a nonneoplastic and reactive process that occurs due to bone resorption and localized benign clinical osseous lesions appearing as a skeletal manifestation of primary or secondary hyperparathyroidism. Spinal involvement (cervical, thoracic, and lumbar spine) with brown tumor (osteoclastoma) in patients with hyperparathyroidism, although rare, may be the initial manifestation of HPT [1,2].

However, we believe that some important additional comments are necessary. In the article, the authors stated that there are only four cases of cervical spine involvement reported, three of which are of secondary hyperparathyroidism. Only one reported case involves the axis, the second cervical vertebra, in secondary hyperparathyroidism. To their knowledge, theirs was the first reported case of axis brown tumor due to primary hyperparathyroidism, the second reported case for cervical spine involvement of primary hyperparathyroidism and the fifth reported case of cervical spine brown tumor [1]. Nevertheless, we would like to call the attention of the readers to the fact

that the literature contains additional case reports related to cervical spine brown tumor (Table 1) [1-11].

Again, we appreciate the work by the authors, which adds to our knowledge of this difficult clinical problem.

## **Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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Department of Orthopaedics and Traumatology, Aksaz Military Hospital, 48700 Marmaris, Mugla, Turkey Tel: +90-2524210161, Fax: +90-2524210415, E-mail: fsozyurek@yahoo.com



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Received Apr 27, 2015; Accepted Apr 28, 2015

Corresponding author: Selahattin Ozyurek

	Study	Age (yr)	Sex	Location	Symptoms	Type of hyperpara- thyroidism	Treatment
1	Ericsson et al. [2] 1978	47	Female	Cervicothroacic (C7, T1)	Pain, right upper limb paresis	Secondary	Tumor resection, fusion with bone graft+parathyroidectomy
2	Graziani et al. [3] 1991	64	Female	C6	Unilateral paresis, arm pain	Primary	Tumor resection parathyroid adenoma resection
3	Barlow and Archer [4] 1993	31	Female	C5	Neck pain, cervicobrachial neuralgia	Secondary	Minerva jacket 3 months+parathyroidectomy
4	Ashebu et al. [5] 2002	27	Female	C6	Lethargy, weakness, bone pain, tender anterior tibial swellings and bilateral renal calculi (multipl brown tumors)	Primary	Parathyroid adenoma resection calcium, magnesium and vitamin D therapy
5	Gheith et al. [6] 2010	25	Female (patient 2)	C4, C5	Pain, numbness	Secondary	Tumor resection parathyroidectomy
6	Mateo et al. [7] 2010	34	Female	C2	9-month history of persistent neck pain	Secondary	Orthosis+parathyroidectomy
7	Szeverenyi et al. [8] 2011	9	Male	C7	Growing neck tumor	Secondary	Tumor resection parathroidectomy
8	Resic et al. [9] 2011	27	Male (case 1)	C6, C7	Neck, arm, and leg pain	Secondary	Tumor resection+five subtotal parathyroidectomies+Cervical spine stabilisation
9	Kerstens et al. [10] 2014	55	Male	C7, L3	Weight loss, diffuse bone pain	Primary	Parathroidectomy+a left-sided hemithyroidectomy with ipsilateral paratracheal nodal dissection
10	Khalatbari and Moharamzad [11] 2014	52	Female (case 3)	C6	Neck pain, right C6 radicular pain/ paresthesia at right C6 dermatome	Primary	Tumor resection, lateral mass screw fixation, and parathyroidectomy
11	Alfawareh et al. [1] 2015	26	Female	C2	Axial neck pain, hand mild weakness	Primary	Orthosis+parathyroidectomy

Table 1. Summary of the previously reported Brown tumor cases related to primary or secondary hyperparathyroidism and their main features

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