

# ISOLATED CERVICAL OSTEOCHONDROMA MANIFESTING AS SPASMODIC TORTICOLLIS: A CASE REPORT

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## • ABSTRACT

We present a 30-year-old man with cervical spine osteochondroma who manifested as spasmodic torticollis. The patient was treated medically for three years without any improvement. Eventually patient's medical records was reviewed and a structural disparity was detected in plain radiography. Further study confirmed a bone tumor in the left pedicle of third cervical vertebra. Upon surgical excision of the mass, the C3 spinal root was released and main bulk of the tumor was resected. Pathologic findings was in favor of osteochondroma and clinical symptoms was fully abated after surgery. Cervical spine tumors such as osteochondroma is an uncommon cause of spasmodic torticollis, however, always should be kept in mind as one of the etiologies.

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**Key Words • Osteochondroma • spasmodic torticollis**

## Introduction

Spasmodic torticollis is one of the common causes of postural abnormalities of head and neck in the third to fifth decades of life.<sup>1</sup> It is generally a late onset focal dystonia most commonly attributed to striatal and vestibular dysfunction.<sup>2</sup> Although the pathogenesis is uncertain, a variety of medical disorders such as encephalitis, multiple sclerosis. are to be suspected.

Establishing the exact etiology of torticollis may enable the physician to treat abnormal movements accordingly. Occasionally isolated upper cervical tumor, traumatic, infectious and degenerative lesions can produce postures mimicking spasmodic torticollis.<sup>3-5</sup>

Altered head posture secondary to upper cervical spine tumors is an uncommon differential diagnosis of spasmodic torticollis.<sup>6</sup>

Osteochondroma, a rare tumor of the cervical spine, is usually painless, but may occasionally enlarge and produce neurological symptoms in adjacent nervous system mostly in the form of myelopathy or radiculopathy due to nerve root impingement.<sup>7-9</sup> Cervical osteochondroma is rarely cited as a cause of spasmodic torticollis.<sup>10</sup>

## Case Report

A 30-year-old male, war veteran with abnormal neck posture simulating spasmodic torticollis was admitted to our center. The patient's complaint went back to 3 years prior to referral and had remained refractory to conventional therapeutic measures.

On physical examination, no significant neurological or psychological findings were found except for severe and periodic painful spasms of the neck musculature on the left side which caused head and neck tilt toward the right side and back of the patient. Allegedly the abnormal posture occurred also during

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sleep. Brain CT scan, brain and cervical MRI, as well as carotid and vertebral angiography were considered unremarkable. However, plain cervical radiography showed the head tilt and the structural disparity of C2/C3 facets on the left side (Fig. 1). An isotope scan indicated

a markedly high radioactive uptake in the left C2/C3 facet joint. Repeated cervical CT scan, with thin slices through suspected area showed hyperdense mass measuring 2 cm in diameter in superior facet of C3 (Fig. 2). Surgical management was decided for the patient, and via a small fenestration between C2/C3 laminae, the medial portion of the tumor was approached and a C3 foraminotomy was performed. The tumor was greyish blue in color and had a cartilaginous cap-like appearance. Microscopic finding showed a partially calcified cartilaginous cap with unremarkable underlying bone marrow tissue (Fig. 3). After post-operative care patient was discharged without external neck support and there was complete recovery of the abnormal movements. In the subsequent one and a half year follow-up period, no complaint of abnormal movement was noticed.

## Discussion

Osteochondromas comprise 30-40% of all benign bone tumors with a tendency to affect males more than female. One to four percent of osteochondromas occur in the spine with a predilection for cervical region<sup>1,11</sup> This tumor rarely reported in association with torticollis.<sup>12,13</sup> The tumor usually measures 1-2 cm, by the time of diagnosis and occasionally may reach up to 10 cm. The dimension of that area in our case was about 1.5 cm. If it has rapid growth and becomes painful, malignancy should be suspected. The radiological presentation would be a bony projection occasionally having a cystic appearance and CT scan is the best diagnostic modality, however, MRI may be useful in delineating tumor margins in some cases.<sup>14-16</sup> Histologically it resembles a normal growing cartilage, occasionally with irregular appearance.

Spasmodic torticollis usually has been reported secondary to vascular malformations of the caudate nucleus and mid-brain lesions involving interstitial nucleus of Cajal.<sup>2</sup> In addition; trauma, rheumatoid arthritis, degenerative processes and cervical spine tumors can also cause the same picture.

We encountered only one case report of spasmodic torticollis caused by osteochondroma in the literature.<sup>10</sup>

However it should be mentioned that other cervical spinal tumors have been more commonly blamed in the past.<sup>3-5</sup>

While the exact pathogenesis of this particular form of spasmodic torticollis remains unexplained, the irritant effect of osteochondroma on cervical roots has been reported as the cause in some cases.<sup>7,17</sup> The altered head posture decreases nerve root irritation causing pain relief and periodic occurrence of this phenomenon in our case could produce the episodic movements mimicking spamodic torticollis.

Following C3 root decompression, nerve root irritation, especially in the vicinity of radicular arteries, was abated and may explain improvement in the patient's clinical picture.

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