



## OSTEOCHONDROMA OF LAMINA OF C2. A CASE REPORT WITH A RARE LOCATION

### *C2 LAMINASININ OSTEOKONDROMU. NADİR LOKALİZASYONLU BİR OLGU SUNUMU.*

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#### SUMMARY:

Osteochondroma is the most frequently encountered benign bone tumor, and often it originates from the metaphyseal region of long bones. Osteochondroma is a pathology which may cause neurologic dysfunction and rare neck pain, it is rarely seen in the spinal column. However, when it involves the spine inferior cervical region is the most affected region and usually posterior components are affected. In this paper, a case originating from C2 vertebral laminae is presented. In our case, involvement of C2 laminae is a rare condition instead of commonly involved regions. Solitary lesions have 1% and multiple lesions have 5-25% malignant transformation rate. Growth of tumoral mass and severe pain are the most important signs of malignant transformation.

A 31-year-old female patient had complaints of neck pain that is resistant to all nonsteroidal anti-inflammatory drugs, and left arm for nearly six months. She has not any neural deficit. In the hospitals she has previously referred, the case was considered as a cervical disc hernia and was medically treated and has been followed up without any further investigation. CT and MRG imaging have led to prediagnosis of osteochondroma and since she has severe pain and there was suspicion for malignant transformation surgical excision was planned and tumor has been removed by a large resection. In pathological examination no malignant cell was found but all of her complaints were dissolved.

In the light of these data, when there is very severe pain close to cranial base, presence of a benign bone lesion located in this area should be considered and further investigations should be carried out.

**Key words:** Cervical vertebra, osteochondroma, spinal tumor, severe cervical pain

**Level of evidence:** Case report, Level IV.

#### ÖZET:

Osteokondrom uzun kemiklerin metafizlerinden köken alan en sık görülen benign kemik tümörüdür. Omurgada nadir görülür ve nadiren ağrı ve nörolojik bozukluğa yol açar. Ancak omurgada en sık alt servikal bölgeyi ve genellikle arka elemanları tutar. Bu çalışmada C-2 omurganın lamasından köken alan bir olgu sunulmuştur. Bu tutulum diğer sık görüldüğü bölgelere nazaran nadir bir tutulumdur. Soliter tek lezyonlar % 1, çoklu lezyonlar ise % 5-25 oranında malign değişime uğrar. Tümöral kitlenin büyümesi ve ağrılı hale gelmesi malign değişim için önemli işaretlerdir.

31 yaşında bayan hasta 6 aydır süren tüm nonsteroid antiinflamatuar ilaçlara dirençli sol kola yayılan ağrı nedeniyle başvurdu. Nörolojik defisiti yoktu. Servikal herni düşünülerek medikal tedavi uygulanan hastaya herhangi bir tetkik yapılmamıştı. CT ve MR incelemelerde osteokondrom saptanan hastada ciddi ağrı olması nedeniyle malign değişim düşünülerek cerrahi planlandı. Patolojik incelemede tipik histopatolojiye sahip kitlenin osteokondrom olduğu saptandı ve postoperatif hastanın yakınmaları tamamen geçti.

Bu verilerin ışığı altında kafa kadesine yakın bölgelerde ciddi ağrısı olan hastalarda, osteokondrom gibi benign bir kitlenin basısının ağrıya yol açabileceği düşünülerek mutlaka ileri tetkik yapmanın gerektiği fikri elde edildi.

**Anahtar Kelimeler:** Servikal omur, osteokondroma, spinal tümör, ciddi servikal ağrı.

**Kanıt Düzeyi:** Olgu sunumu, Düzey IV

## INTRODUCTION:

10-15 % of all bone tumors and 20-50 % of all benign bone tumors consist from osteochondromas<sup>6,9,12</sup>. Generally, they are seen in metaphyseal regions of long bones, distal part of femur, proximal part of humerus and tibia; however, they may also become manifest in small bones of hands and feet in 10 %, pelvis in 5 %, scapula in 4 % and vertebrae in 2 % of the cases<sup>1,17</sup>.

The huge osteochondromas in adults suggest malignant transformation. Solitary lesions have 1% and multiple lesions have 5-25% malign transformation rate<sup>4,16</sup>. As understood from a literature survey, it generally emerges during the second and third decades of life and it is seen two times more frequently in men when compared with women<sup>11</sup>. Our case is a cervical vertebral osteochondroma with a rare location and resistant to NSAID.

## CASE REPORT:

A 31-year-old female patient had complaints of neck and left arm pain for nearly six months. Despite NSAID use the complaints have gradually increased. Physical and neurologic examination results of the patient who was evaluated in our outpatient clinic were trivial. Cervical plain radiograms and 3-D cervical computed tomography (CT) and magnetic resonance imaging (MRI) were requested. On her cervical MRI, a bone lesion with 13 x 5 mm dimensions which demonstrated exophytic extension from the left lamina of C2 vertebra upwards and depressed left lamina of C1 was observed (Figure-1).

The patient underwent C1 and C2 left-sided laminectomy (Figures-2).

Pathology preparation was stained with hematoxylin eosine (Figure-3).

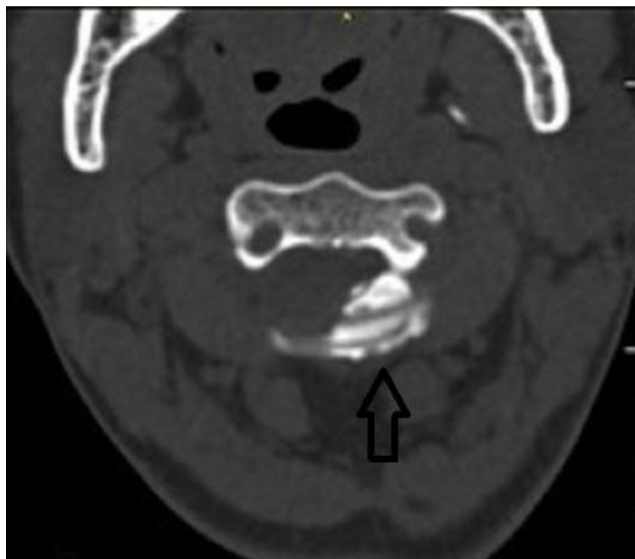
At the first postoperative week, in the control visit of the patient whose pathology report revealed presence of osteochondroma, wound site was clean without any collection and also her complaints have regressed markedly.

## DISCUSSION:

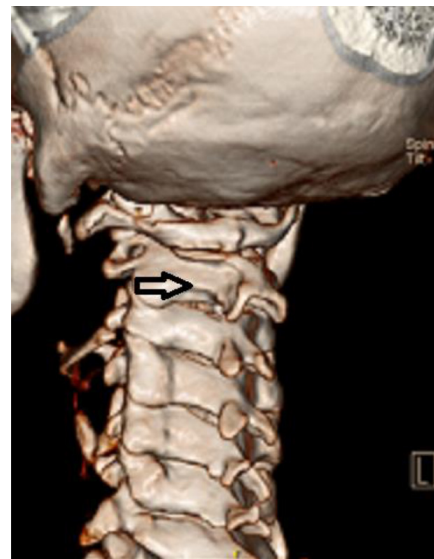
Osteochondromas are most frequently seen benign tumors of the skeletal system<sup>3,13</sup>. Osteochondromas are most often seen during an adolescent age where the growth of the body accelerates. Mostly, they are symptomless<sup>13</sup>. In case there are symptoms, the most frequently encountered symptom is pain. However, it's usually mild and responds to analgesics. Apart from this symptom, impingement on nerve and restriction of ROM of the affected joint have been reported<sup>3,13</sup>.

Osteochondroma can be seen as a solitary or multiple mass lesions. Since nerve compression, swelling and growth problems can develop in osteochondromas with hereditary characteristics, evaluation of these cases should be performed more carefully<sup>6,13</sup>. Besides, the risk of malignant transformation in this type of osteochondromas is greater relative to solitary forms<sup>15</sup>. Especially in the hereditary form malignant transformation has been reported in 3-5 % of the cases<sup>14</sup>.

Figure-1. Preoperative Cervical CT

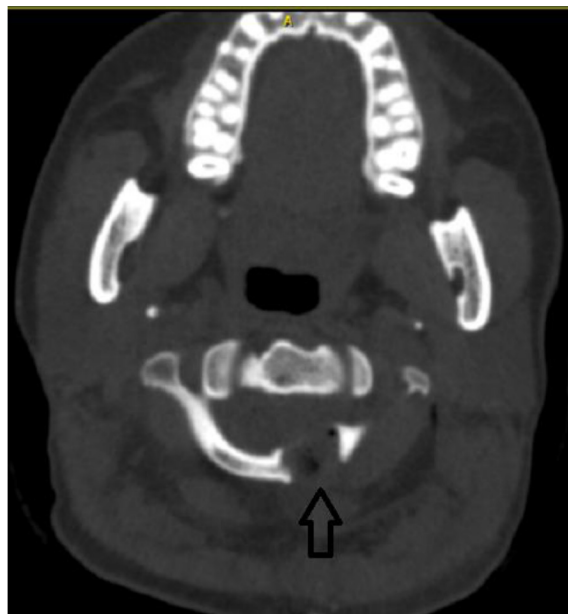


a-Axial section



b- 3-D cervical CT

**Figure-2.** Postoperative Cervical CT

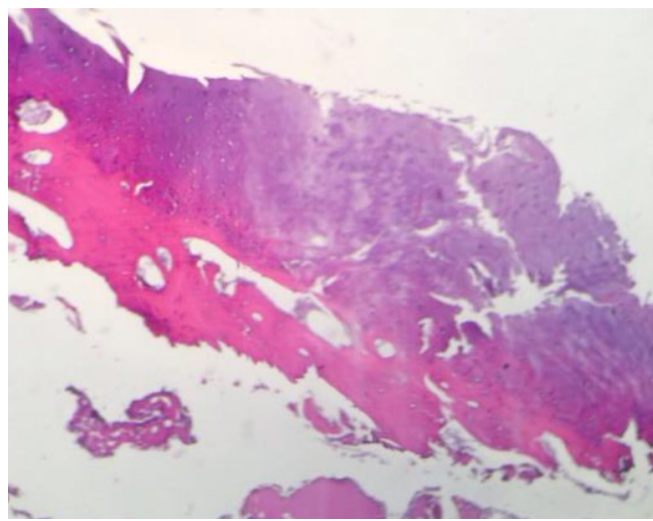
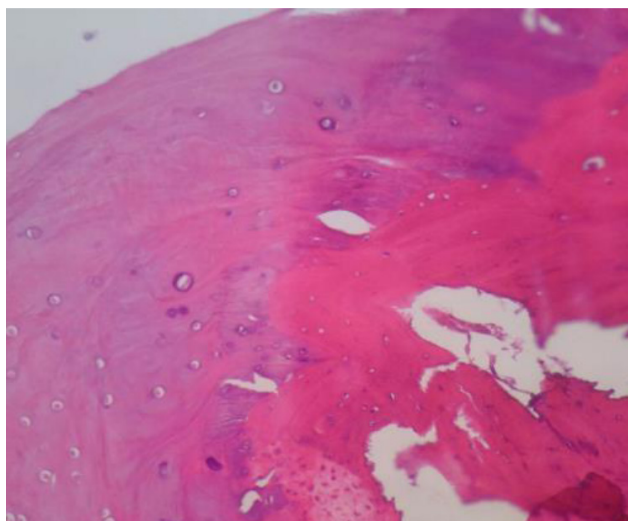


c- Axial section



d- 3-D cervical CT

**Figure-3.** Pathology preparation stained with hematoxylin eosine



The sudden and rapid growth of the mass lesion, the persistence of its growth after cessation of the development of the skeletal system and pain indicate risk of malignant transformation. As has been reported, it most frequently transforms into chondrosarcoma and rarely into osteosarcoma between 20 and 40 years of age<sup>7-8</sup>.

As potentially effective factors on the formation of osteochondromas, iatrogenic damage on growth plaque following surgery or traumatic event and radiation exposure have been reported<sup>3,13</sup>. In the literature, development of

osteochondroma has been reported in patients who had undergone radiotherapy<sup>6,9,12</sup>.

Direct plain radiograms have an important place in the diagnosis of osteochondromas. One of the characteristic features of osteochondromas is the continuum between the mass lesion and the medulla of the bone where it originated<sup>6,12</sup>. Definitive diagnosis is based on histopathological examination. The presence of a bone tissue covered with a hyaline cartilage which is in continuum with the bone where it originated establishes the diagnosis<sup>6</sup>. In the presence of pain, neurovascular compression, skeletal deformities, abnormal

developmental process, the risk of malignant transformation and restriction of articular range of motion, surgical treatment is recommended<sup>1,3,6,9,11,13,17</sup>. Since direct radiograms can hardly diagnose spinal osteochondromas, in our study CT, MRI were used.

CT is required for more precise evaluation of skeletal structures, while MRI is necessitated for the detection of both extradural intracanalicular components of the tumor and also the severity of compression on the neural tissue<sup>2,10</sup>. In cases where the cervical spine was involved, following decompression symptomatic improvement is seen, even in cases of inadequate excision, disease recurrence is rarely seen.

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