

# Osteoid Osteoma of the Atlas

Spinal osteoid osteoma of the atlas has previously been reported very rarely in the published literature.

Valluzzi et al. reported the first case of osteoid osteoma involving the atlas associated with adverse local tissue reaction <sup>1)</sup>.

## Diagnosis

Among the several etiologies mentioned for neck pain and torticollis, osteoid osteoma of the first 2 cervical vertebrae should be considered as a possible but rare cause <sup>2)</sup>. In the era before the MRI, if standard cervical spine radiographs are negative, isotope scanning and computed tomography can help to establish the diagnosis. <sup>3)</sup>.

## Treatment

The traditional standard treatment has been a surgical resection of the nidus.

Even though different kinds of management have been mentioned for osteoid osteoma, resection of the lesion remains the best option for achieving a cure <sup>4)</sup>.

Computed tomography (CT)-guided radiofrequency ablation (RFA) has gained favor as a more precise alternative treatment. The technique might be contraindicated when the nidus is less than 2 mm away from the neural structures <sup>5)</sup>.

## Case reports

Valluzzi et al. reported a case of an vertebral osteoid osteoma involving the atlas in a 6-year-old boy, who presented with suboccipital pain and torticollis. Initial radiological findings were ambiguous as magnetic resonance imaging showed mainly edema of upper cervical spine soft tissues. The subsequent computed tomography depicted a lesion of left lamina of C1. As conservative treatment failed, the lesion was surgically resected and the patient became pain free. This is the first case of osteoid osteoma involving the atlas associated with adverse local tissue reaction reported in literature <sup>6)</sup>.

A case of osteoid osteoma of the C1 lateral mass treated successfully using CT-guided RFA. A 30-year-old woman who presented with a four-month history of occipital and suboccipital pain was treated by CT-guided RFA. The visual analog scale (VAS) assessed the pain before and after RFA. The patient reported significant pain relief and normal activities. The VAS score reduced from 8/7 to 1/0 after the procedure. Therefore CT-guided percutaneous RFA of C1 vertebral osteoid osteoma is a safe and

effective method. The technique might be contraindicated when the nidus is less than 2 mm away from the neural structures <sup>7)</sup>.

---

Amirjamshidi et al. reported 4 cases of upper cervical osteoid osteoma, 1 involving C-1 and the other 3 C-2, and they discuss different aspects of management in similar cases. The patients were 14, 17, 35, and 46 years old, and all presented with neck pain and various degrees of painful limitation of head rotation not ameliorated by ordinary analgesics. Radionuclide isotope bone scans, CT scanning, and MR imaging were helpful preoperative diagnostic modalities. The first attempt at eradication of the lesions failed in 2 cases and the lesions could be excised totally at a second approach. Postoperatively, the patients all became pain free and gained full range of neck motion. There has been no tumor recurrence and no sign of instability in short- to medium-term follow-up. Among the several etiologies mentioned for neck pain and torticollis, osteoid osteoma of the first 2 cervical vertebrae should be considered as a possible but rare cause. Even though different kinds of management have been mentioned for osteoid osteoma, resection of the lesion remains the best option for achieving a cure <sup>8)</sup>.

---

Occipital headache, which was relieved by salicylates, was the major symptom reported by two adolescents. In the first patient, a lesion of C1 was seen on plain radiographs. In the second patient, the diagnosis of osteoid osteoma was suggested by scintigraphic imaging and subsequently by computed tomography.

The pain disappeared in both cases after surgical excision of the lesion. Histologic examination disclosed characteristic features of osteoid osteoma.

Occipital pain in adolescents, which is relieved by [aspirin](#), should raise suspicion about the possibility of an osteoid osteoma of the atlas. If standard cervical spine radiographs are negative, isotope scanning and computed tomography can help to establish the diagnosis. Complete excision eliminates the lesion and produces immediate relief for the patient <sup>9)</sup>.

---

Jones DA. Osteoid osteoma of the atlas. J Bone Joint Surg Br. 1987 Jan;69(1):149. doi: 10.1302/0301-620X.69B1.3818723. PMID: 3818723.

## References

<sup>1)</sup> , <sup>6)</sup>

Valluzzi A, Donatiello S, Gallo G, Cellini M, Maiorana A, Spina V, Pavesi G. Osteoid Osteoma of the Atlas in a Boy: Clinical and Imaging Features-A Case Report and Review of the Literature. Neuropediatrics. 2020 Oct 27. doi: 10.1055/s-0040-1715488. Epub ahead of print. PMID: 33111305.

<sup>2)</sup> , <sup>4)</sup> , <sup>8)</sup>

Amirjamshidi A, Roozbeh H, Sharifi G, Abdoli A, Abbassioun K. Osteoid osteoma of the first 2 cervical vertebrae. Report of 4 cases. J Neurosurg Spine. 2010 Dec;13(6):707-14. doi: 10.3171/2010.5.SPINE09297. PMID: 21121747.

<sup>3)</sup> , <sup>9)</sup>

De Praeter MP, Dua GF, Seynaeve PC, Vermeersch DG, Klaes RL. Occipital pain in osteoid osteoma of

the atlas. A report of two cases. Spine (Phila Pa 1976). 1999 May 1;24(9):912-4. doi: 10.1097/00007632-199905010-00014. PMID: 10327515.

<sup>5)</sup> <sup>7)</sup>

Yang J, Li W, Yin Y, Li Z, Ni C. Radiofrequency ablation of osteoid osteoma in the atlas: A case report. Interv Neuroradiol. 2018 Feb;24(1):88-92. doi: 10.1177/1591019917742889. Epub 2017 Nov 20. PMID: 29157057; PMCID: PMC5772548.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=osteoid\\_osteoma\\_of\\_the\\_atlas](https://neurosurgerywiki.com/wiki/doku.php?id=osteoid_osteoma_of_the_atlas)

Last update: **2024/06/07 02:49**

