The Dens of Deception: Retro-Odontoid Pannus Mimicking Occipital Neuralgia, A Case Report

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Introduction

Diffuse idiopathic skeletal hyperostosis (DISH) and ossification of the posterior longitudinal ligament (OPLL) are well-recognized causes of cervical stiffness, myelopathy, and spinal cord compression (1).

However, upper cervical involvement with atlantoaxial instability and retro-odontoid pannus causing occipital neuralgia-type headache is uncommon.

A patient with symptoms of unilateral occipital headache and neck pain refractory to conservative management was found with diffuse cervical OPLL/DISH and a large retro-odontoid pannus at C1–2 and ultimately improved after surgical intervention.

This case highlights **upper cervical instability** and **retro-odontoid pannus** presenting as **occipital neuralgia** in **diffuse cervical DISH/OPLL**.

Posterior C1-2 stabilization improved symptoms, supporting stabilization without anterior decompression, **emphasizing craniocervical pathology in refractory occipital neuralgia**.

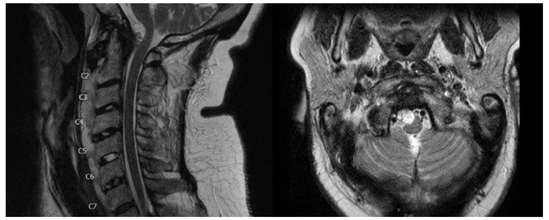


Figure 1. Cervical imaging prior to C1-2 stabilization

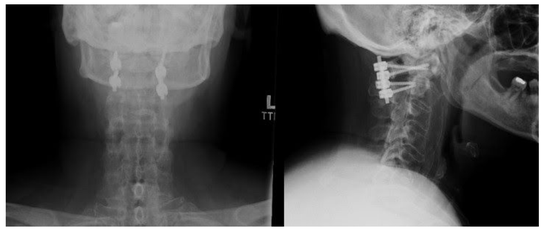


Figure 2. Post-instrumentation

Result and Discussion

At 6-week follow-up: Our patient demonstrated marked improvement in ambulation, hand dexterity, and daily functioning. Severe occipital pain and headache had substantially improved, and imaging demonstrated stable instrumentation.

Occipital neuralgia initially obscured cervicomedullary pathology in this patient, but progressive neurological deficits after temporary nerve block relief prompted advanced imaging and neurosurgical evaluation (2). Subaxial ankylosis may increase stress at C1-2, predisposing to instability and pannus, especially with her history of rheumatoid arthritis (3). Surgical instrumentation improved symptoms, supporting stabilization without anterior decompression (4).

This case emphasizes the importance of considering craniocervical pathology in refractory occipital neuralgia.

Patient Presentation

SETTING
Outpatient pain clinic

OUR PATIENT
66-year-old woman presenting for headache
- Past medical history: rheumatoid arthritis and lumbar spondylosis

DIFFERENTIAL DIAGNOSES
Occipital neuralgia · Cervical radiculopathy · Cervical spondylosis

FAILED CONSERVATIVE TREATMENT
- Acetaminophen, gabapentin, tizanidine, and activity modification
- Ultrasound-guided right occipital nerve block with dexamethasone and bupivacaine produced only transient relief

SYMPTOM PROGRESSION

Persistent headache

+

Severely restricted cervical rotation

+

SIGNS OF CERVICAL MYELOPATHY
- Hyperreflexia
- Bilateral Hoffman's signs
- Ataxic gait
- Hand dysfunction
- Diffuse extremity paresthesias

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Neurosurgical evaluation

IMAGING & MANAGEMENT

CT: Extensive cervical DISH

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ADDITIONAL IMAGING · FIGURE 1
Diffuse subaxial DISH/OPLL
Bridging anterior osteophytes and facet fusion
Large retro-odontoid pannus → cervicomedullary compression

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MULTIDISCIPLINARY INTERPRETATION
Pannus likely developed from atlantoaxial instability at the nonfused C1–2 segment, in the setting of diffuse subaxial ankylosis and rheumatoid arthritis.

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SURGICAL MANAGEMENT · FIGURE 2
Given progressive myelopathy and failure of conservative measures, she underwent C1-2 instrumented fusion

References

1. Anshori F, Hutami WD, Tobing SDAL. Diffuse idiopathic skeletal hyperostosis (DISH) with ossification of the posterior longitudinal ligament (OPLL) in the cervical spine without neurological deficit - A Case report. Ann Med Surg (Lond). 2020;60:451-455. Published 2020 Nov 13. doi:10.1016/j.amsu.2020.11.028
2. Djavaherian DM, Guthmiller KB. Occipital Neuralgia. [Updated 2023 Mar 6]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538281/
3. Subagio EA, Wicaksono P, Faris M, Bajamal AH, Abdillah DS. Diagnosis and Prevalence (1975-2010) of Sudden Death due to Atlantoaxial Subluxation in Cervical Rheumatoid Arthritis: A Literature Review. ScientificWorldJournal. 2023;2023:6675489. Published 2023 Oct 5. doi:10.1155/2023/6675489
4. Bannach MA, Fernandes MNF, Cavalcante RAC (2023) Hypertrophic Dens (Retro Odontoid Pseudotumor) Spinal Compression Treated with C1-C2 Fixation: Case Report and Review. J Surg 8: 1844 https://doi.org/10.29011/2575-9760.001844