

# Recurrent cervical osteomyelitis after radiation therapy in a patient with oropharyngeal cancer

Yoji Hoshina<sup>1</sup> and Takashi Takeuchi<sup>2</sup>

<sup>1</sup>Chiba University Hospital Department of General Medicine

<sup>2</sup>Chiba University Hospital

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## Recurrent cervical osteomyelitis after radiation therapy in a patient with oropharyngeal cancer

Yoji Hoshina MD<sup>1\*</sup>, Takashi Takeuchi MD<sup>2</sup>

<sup>1</sup>Department of General Medicine, Chiba University Hospital, Japan

<sup>2</sup>Department of Radiology, Chiba University Hospital, Japan

### \*Corresponding author

Yoji Hoshina MD

Department of General Medicine, Chiba University Hospital

1-8-1, Inohana, Chuo-ku, Chiba-city, Chiba 260-8677, Japan

Tel: +81-43-224-4758

Fax: +81-43-224-4758

E-mail: yojihoshina0106@gmail.com

### Key Clinical Message

It is crucial to consider cervical osteomyelitis as a differential diagnosis for neck pain in patients who underwent radiotherapy for early diagnosis and management, thereby preventing the development of potentially debilitating neurologic symptoms.

**Key Words:** Vertebral osteomyelitis, Cervical osteomyelitis, Radiation therapy, Osteoradionecrosis

### Case description:

A 67-year-old man with a 10-year history of oropharyngeal cancer treated with chemoradiotherapy (70 Gy) presented with a five-week history of fever and neck pain. Past medical history revealed cervical osteomyelitis (C1/C2) four years ago. He was afebrile and had normal vital signs. Physical examination showed limitation of cervical range of motion in all directions due to pain. Laboratory examination demonstrated an elevated erythrocyte sedimentation rate (30 mm/h) without leukocytosis. Cervical magnetic resonance imaging revealed a new deformity at the C3-C4 vertebral endplates with hyperintense signals at C3/C4 intervertebral discs on T2 (Figure A). These findings were consistent with a diagnosis of recurrent cervical osteomyelitis.

We described a case of recurrent cervical osteomyelitis in a patient with oropharyngeal cancer following radiation therapy. Although only 14% of all vertebral osteomyelitis cases involve the cervical spine, cervical osteomyelitis has the highest risk for neurologic complications (i.e., motor weakness or paralysis).<sup>1</sup> Radiation

therapy for primary head and neck malignancies, especially when given at a high dose, is a known risk factor for osteomyelitis at the irradiated site.<sup>2</sup> The pathophysiologic mechanisms of radiation-induced osteomyelitis include osteoblast and osteoclast inhibition, vascular and lymphoid tissue damage, and mucosal ulceration, resulting in an increased susceptibility to infection.<sup>3</sup>

This case highlights the importance of considering cervical osteomyelitis as a differential diagnosis for neck pain in patients who underwent radiotherapy for early diagnosis and management, thereby preventing the development of potentially debilitating neurologic symptoms.

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Nothing to disclose.

## Conflict of Interest Statement

All authors have no conflicts of interest to declare.

## Figure

(A): T2-weighted magnetic resonance imaging (MRI) reveals a new deformity at the C3-C4 vertebral endplates and a hyperintense signal at C3/C4 intervertebral discs.

(B): Short tau inversion recovery (STIR) MRI shows a hyperintense signal at the C1-C2 vertebral bodies, suggesting the presence of inflammation.

