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LETTER TO THE EDITOR

Solitary syndesmophyte in odontoid process of a patient with ankylosing spondylitis

Hong Ki Min[1], Se Hee Kim[1], Hae-rim Kim[2], Sang-heon Lee[2]

[1]Division of Rheumatology, Department of Internal Medicine, Konkuk University Medical Center, Seoul, Republic of Korea
[2]Division of Rheumatology, Department of Internal Medicine, Research Institute of Medical Science, Konkuk University School of Medicine, Seoul, Republic of Korea

A 22-year-old male patient was admitted to the rheumatology clinic due to neck and back pain with morning stiffness for 12 months. He suffered from right knee and heel pain six months ago. He showed increased levels of high-sensitivity C-reactive protein (2.20 mg/dL, reference range: 0.01-0.3 mg/dL) and erythrocyte sedimentation rate (67 mm/h, reference range: 0-15 mm/h). To evaluate neck and back pain, the physician performed computed tomography (CT) of the whole spine. The CT finding was absence for herniated nucleus pulposus nor neural foramen stenosis. All vertebral corners of whole spine were clear (Figure 1a), except for bony spur at odontoid process of C2 (Figure 1b, white arrow).

Upon suspicious of ankylosing spondylitis (AS), CT scan for sacroiliac joints and sacroiliac joint, and human leukocyte antigen (HLA)-B27 was tested. The CT scan showed bilateral Grade 2 sacroiliitis which was compatible with AS Figure 1c), and positive result for HLA-B27. The most widely used method for evaluating spinal structural damage, the modified Stoke Ankylosing Spondylitis Spinal Score only includes anterior aspect of C2 lower border to T1 upper border and T12 lower border to sacrum upper border,[1] and novel method using CT of whole spine (CT syndesmophyte score) includes lower border of C2 to upper border of sacrum.[2] These methods do not count the syndesmophyte on odontoid process of C2. The patient showed a rare case of AS which only showed syndesmophyte on odontoid process of C2.

Risks of osteoporosis and consequent vertebral fracture are increased in AS patients[3] and rarely fracture on odontoid process is reported.[4] Also, the low bone mineral density is associated with syndesmophyte progression in patients with AS.[5] Therefore, physicians should be aware of possibility of fracture or syndesmophyte progression on odontoid process when pain on upper cervical area occurs in AS patients.

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Correspondence: Hong Ki Min, MD, PhD. Division of Rheumatology, Department of Internal Medicine, Konkuk University Medical Center, Seoul, 120-1, Neungdong-ro, Gwangjin-gu, Seoul, Republic of Korea.

E-mail: alsghdrl1921@naver.com

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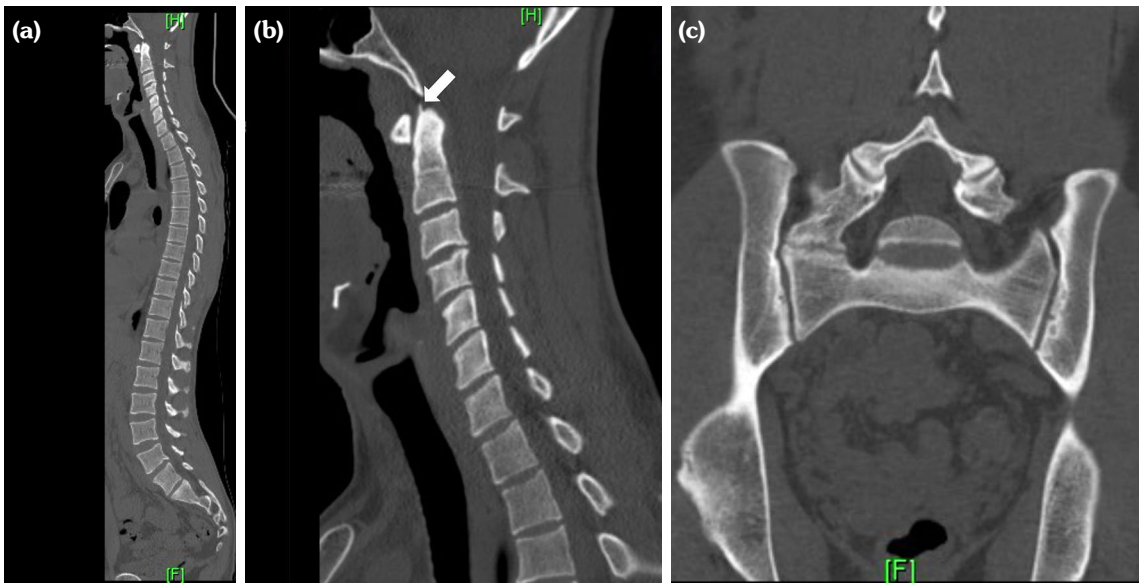

Figure 1. Computed tomography images of **(a)** whole spine, **(b)** syndesmophyte on odontoid process of C2 (white arrow), and **(c)** sacroiliac joint.

Ethics Committee Approval: The present study was approved by the Institutional Review Board of Konkuk University Medical Center (KUMC 2022-07-002). The study was conducted in accordance with the principles of the Declaration of Helsinki.

Patient Consent for Publication: A written informed consent was obtained from the patient.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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