


Case Report

A case of mid-thoracic osteoporotic vertebral fracture with the inability to belch syndrome

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ABSTRACT

Background: Osteoporotic vertebral fractures (OVF) commonly occur at the thoracolumbar junction, but are less frequently encountered in the mid-thoracic region. Here, a 69-year-old female presented with back pain and the new onset of symptoms characterized by the inability to belch.

Case Description: A 69-year-old female presented with back pain. 2 months later, she developed anorexia and difficulty belching. The thoracic magnetic resonance (MR) demonstrated a T7 OVF. As she ultimately underwent a balloon kyphoplasty (BKP), as conservative treatment was unsuccessful.

Conclusion: OVF should be suspected in elderly females with the inability to belch accompanied by chest and back pain. The diagnosis is best established with a spinal MR imaging and should be followed by BKP.

Keywords: Balloon kyphoplasty, Gastroesophageal reflux disease, Inability to belch, Mediastinal triangle, Osteoporotic vertebral fracture, Spinal deformity

INTRODUCTION

In Japan, the number of osteoporosis patients has reached 10 million, is still increasing resulting in a poorer quality of life, and increased morbidity/mortality.^[2] Here, a 69-year-old female with a T7 osteoporotic vertebral fracture (OVF) presenting with the inability to belch; following a balloon kyphoplasty (BKP) this complaint and other accompanying symptoms resolved.

CASE REPORT

A 69-year-old female presented with chest and severe upper back pain, but neurologically intact. The first chest computed tomography (CT) was interpreted as normal [Figure 1a]. Over the next 2 months, she progressively developed anorexia and the inability to belch. Esophageal stricture and thoracic vertebra OVF were suspected based on the results of the second chest CT [Figure 1b]. Thoracic magnetic resonance (MR) and CT studies revealed a T7 OVF with a kyphotic deformity [Figure 2]. Twice, she underwent esophagogastroscope that showed no obstruction. As her symptoms were attributed, therefore, to the T7 OVF, she underwent a T7 BKP resulting in an improved kyphotic angle from 22.4 degrees to 17 degrees

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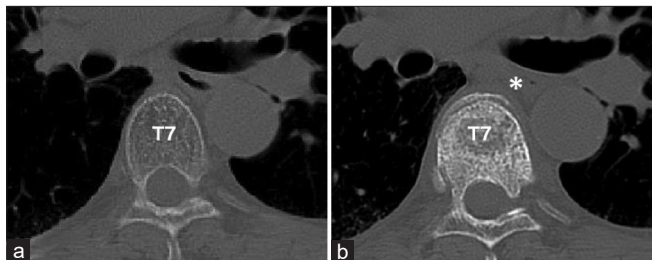


Figure 1: (a) Initial chest computed tomography (CT) showed no obvious abnormal findings. (b) No air in the esophagus was seen on CT 2 months after onset (asterisk).

[Figure 3]. In addition, this resulted in resolution of her symptoms.

DISCUSSION

Gastroesophageal reflux disease (GERD) is known to be a post OVF spinal deformity gastrointestinal symptom, and vertebral body fractures and kyphosis at the thoracolumbar junction are considered contributing risk factors.^[4,5]

In this case report, the patient did not have GERD, but rather, the inability to belch that was attributed to her T7 OVF. The

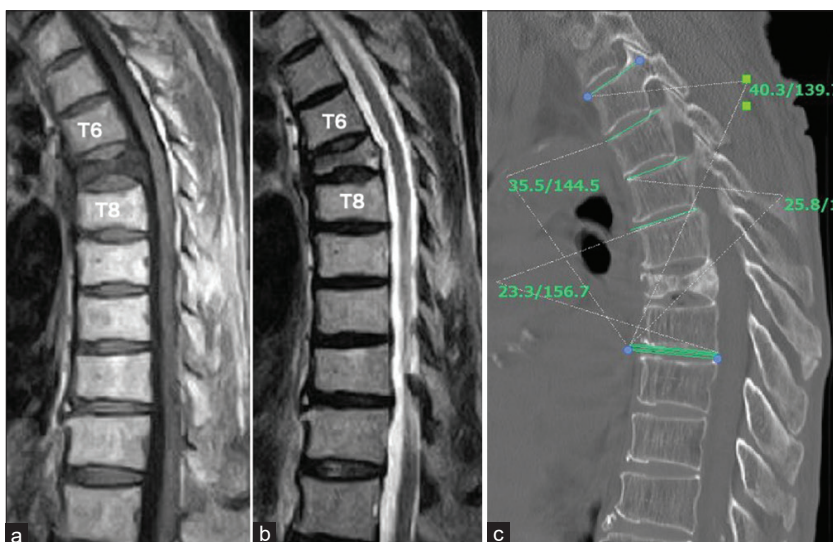


Figure 2: (a) Thoracic magnetic resonance imaging showed low intensity on T1WI and isointensity on T2WI at T7. (b) Thoracic kyphosis deformity was seen on thoracic spinal computed tomography after 2 months of initial onset.

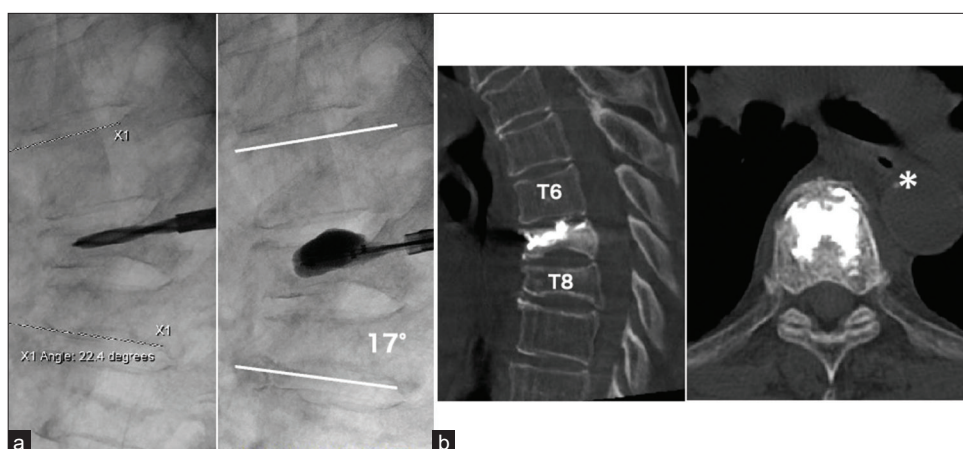


Figure 3: (a) Intraoperative balloon kyphoplasty (BKP) findings were correctable from 22.4 to 17 degrees. (b) Thoracic spine computed tomography after BKP surgery showed intraesophageal air (asterisk) was also confirmed.

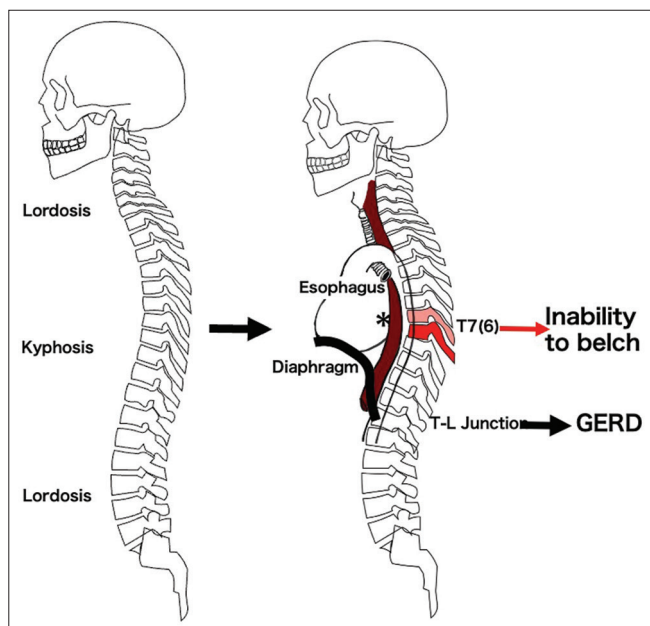


Figure 4: In humans, kyphotic deformation occurs in the middle thoracic spine due to aging (Left).^[3,6] Gastroesophageal reflux disease caused by osteoporotic vertebral fracture (OVF) occurs at the thoracolumbar junction around T12 levels. The inability to belch at the mediastinal triangle (asterisk)^[1] caused by OVF occurs in the middle (T6,7) thoracic spine (Right).

wedge kyphosis deformity of the mid-thoracic spine (i.e., T7 in this case) likely caused a localized minor narrowing of the esophagus, leading to air entrapment and making it difficult to belch [Figure 4].^[1,3,6]

CONCLUSION

Patients with back pain who have gastroesophageal symptoms such as the inability to belch may have a mid-thoracic OVF. In these cases, MR studies of the thoracic spine should be performed followed by the early performance of a BKP.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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