Kümmell’s disease: pathophysiology, diagnosis, treatment and the role of nuclear medicine. Rationale according to our experience

Charalampos Matzaroglou MD, PhD, Christos S. Georgiou MD, Kostantinos Assimakopoulos MD, PhD, Costas Giannakenas MD, PhD, Athanasios Karageorgos MD, PhD, Alkis Saridis MD, PhD, Konstantinos Kafchitsas MD, PhD, Hans J. Wilke PhD

1. Department of Orthopaedic Surgery,
2. Department of Neurosurgery,
3. Department of Psychiatry,
4. Department of Nuclear Medicine, University of Patras
5. Russian Ilizarov Scientific Center, Kurgan, Russia
6. Spine Department, University of Ioannina
7. Center of Musculoskeletal Diseases, University of Mainz, Johannes Gutenberg, Germany
8. Spine Research Group, Institute for Orthopedic Research and Biomechanics, University of Ulm, Germany

Keywords: Kümmell’s disease - Vertebral body collapse - Vertebral osteonecrosis - Intravertebral vacuum cleft - Kyphoplasty

Correspondence address:
C. Matzaroglou MD, PhD Consultant, Department of Orthopaedic Surgery, University of Patras, University Hospital of Patras, Rio, Greece, P.C. 26504
Tel: +30 2610 999556, E-mail: orthopatras@yahoo.gr

Received: 1 April 2011, Accepted revised: 20 October 2011

Abstract

Kümmell’s disease (KD) is a rare clinical entity and includes patients, who after a trivial trauma and an asymptomatic period, develop a progressive vertebral body collapse and a painful kyphosis. The main pathologic eliciting event still remains unclear. Vertebral body collapse can be the result of infection, malignant neoplasia or trauma. It may be difficult to distinguish among them, particularly in osteoporosis. To explain the time lag between initial trauma and vertebral collapse, the hypothesis of ischemic necrosis was suggested. Many authors considering KD as a case of mere vertebral osteonecrosis have wrongly reported cases of osteonecrosis without a spinal trauma, as KD. The fact that intravertebral vacuum cleft often coexists with vertebral osteonecrosis further added to confusion. Various imaging modalities including bone scan support the diagnosis of KD. It is described that bone single photon emission tomography (SPET) or SPET/computed tomography scintigraphy using dynamic and static, acquisition can identify the chronicity of the lesions.


Abstracted on line: 10 November 2011