

Letter to the Editor



Letter to the Editor: Commentary on Acute Paraparesis Caused by Spinal Epidural Fluid After Balloon Kyphoplasty for Traumatic Avascular Necrosis: A Case Report (Korean J Neurotrauma 2023;19:398-402)

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OPEN ACCESS

Received: Aug 31, 2024
Accepted: Sep 11, 2024
Published online: Sep 26, 2024

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Funding

No funding was obtained for this study.

Conflict of Interest

The author has no financial conflicts of interest.

► See the article “Acute Paraparesis Caused by Spinal Epidural Fluid After Balloon Kyphoplasty for Traumatic Avascular Necrosis: A Case Report” in volume 19 on page 398.

I am writing to share insights into a recent case involving balloon kyphoplasty for Kummell's disease that revealed some notable complications. As highlighted by a number of authors, Kummell's disease involves delayed collapse of the vertebral column following trauma. Additionally, it is believed to be a form of pseudo-arthritis, where the intravertebral cleft indicates nonunion of the fracture and the presence of mobility within the vertebra.¹⁾ Although the efficacy of vertebroplasty and balloon kyphoplasty (BK) for this condition is well documented, recent observations suggest that further attention should be given to the advantages and disadvantages of BK.^{2,3)}

BK is designed to create a space via the balloon tamponade effect, thereby reducing pressure during cement injection and minimizing the risk of cement leakage while facilitating vertebral body height restoration.¹⁾ However, in the context of Kummell's disease, where cystic spaces due to avascular necrosis are already present, the benefits of this procedure may be compromised. Specifically, if the fracture line extends to the posterior endplate, the space created by the balloon can reduce the pressure, thereby hindering proper cement penetration. Moreover, preexisting damage to the anterior or posterior endplates may cause balloon inflation to further increase the space, potentially resulting in cement migration.^{4,5)}

There have been reports of dynamic instability and spinal canal violation due to inadequate coverage of the posterior fracture segment, even when patients initially experience pain relief post-procedure.⁵⁾ These complications suggest that although BK remains a viable option for treating Kummell's disease, careful consideration of factors such as vertebral body height reduction and endplate damage is essential.

To improve outcomes and reduce complications, it may be beneficial to implement additional postprocedural measures. These include the use of immobilization braces and osteoporosis medications to support new bone growth and prevent issues related to cement migration.

I hope these observations contribute to a broader understanding of BK in the management of Kummell's disease and stimulate further discussion on optimizing treatment strategies for this complex condition.

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