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Kyphoplasty Issue

The International Myeloma Foundation (IMF) is pleased to present our first issue of CITINGS focused on kyphoplasty. Kyphoplasty is an innovative, minimally invasive surgical procedure for treating osteoporotic and cancer-related fractures in which an orthopedic balloon is inserted into the fractured bone in order to restore the bone to its pre-fracture height, and a cement-like material is then injected directly into the void created by the balloon. The procedure shows great promise in the treatment of painful osteoporotic or cancer-related vertebral compression fractures.

CITINGS is a relatively new, quarterly publication of the IMF. The goal of CITINGS is to provide the latest, most up-to-date list of publications on a key issue related to myeloma, along with a citation, web address, and brief summary of the study. CITINGS focuses on new treatments, drug regimens, and procedures that affect myeloma patients. We welcome your input via (800) 452-CURE or www.myeloma.org. We hope you will find this issue of CITINGS focused on kyphoplasty both interesting and useful.

Susie Novis, IMF President

- Percutaneous kyphoplasty: indications and technique in the treatment of vertebral fractures from myeloma. Masala S, et al.
 - Tumori (2004) Jan-Feb;90(1):226.
- http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15143966
 - This is a case report of patients who underwent kyphoplasty for myeloma-related vertebral compression fractures (VCFs). The authors determined that kyphoplasty was safe and effective for myeloma-related VCFs.
- Wyphoplasty enhances function and structural alignment in multiple myeloma. Lane JM, Hong R, Koob J, et al.

 Clinical Orthopedics and Related Research (2004) (426):49-53.
- http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15346051
 - The authors conclude that kyphoplasty improves pain and function in patients with myeloma-related VCFs to an extent similar to that seen in osteoporotic VCFs.
- Biomechanical comparison of unipedicular versus bipedicular kyphoplasty. Steinmann J, Tingey CT, Cruz G, Dai Q. Spine (2005) Jan 15;30(2):201-5.
- http://www.spinejournal.org/pt/re/spine/abstract.00007632-200501150-00007
 This study is primarily biomechanical, focusing on the surgical technique.

- The contrast study between single and double balloon bilateral dilatation of kyphoplasty. [Article in Chinese] Yang HL, Niu GQ, Liang DC, Wang GL, Meng B, Chen L, Lu J, Zhou Y, Mao HQ, Zhao LJ, Liu XY, Gu XH, Ni CF, Tang TS. Zhonghua Wai Ke Za Zhi (2004) Nov 7;42(21):1299-302. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15634429 The authors conclude that, as a promising minimally invasive surgery, balloon kyphoplasty can provide early relief of pain and improve function as well as spinal alignment. Balloon Kyphoplasty aims to restore lost vertebral body height and correct the angulation of the collapsed vertebral body. Single balloon-inflated kyphoplasty can orthopedically reduce VCFs as well as does double balloon. The effect on anterior column loading due to different vertebral augmentation techniques. Ananthakrishnan D, Berven S, Deviren V, Cheng K, Lotz JC, Xu Z, Puttlitz CM. Clinical Biomechanics 20: 1; 25-31. http://linkinghub.elsevier.com/retrieve/pii/S0268-0033(04)00208-6 The data from this study demonstrates that both vertebroplasty and kyphoplasty allow the disc to generate higher nuclear pressures, while neither treatment increases nucleus pulposus pressure above the level of the intact state. A review of complications associated with vertebroplasty and kyphoplasty as reported to the food and drug administration medical device-related web site. Nussbaum DA, Gailloud P, Murphy K. Journal of Vascular and Interventional Radiology (2004) Nov;15(11):1185-92. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15525736 The authors address the safety and efficacy of both vertebroplasty and kyphoplasty for the treatment of vertebral compression fractures by reviewing both the current literature and data reported to the Food and Drug Administration (FDA). Balloon kyphoplasty for the treatment of pathological vertebral compressive fractures. Gaitanis IN, Hadjipavlou AG, Katonis PG, Tzermiadianos MN, Pasku DS, Patwardhan AG. European Spine Journal (2004) Oct 8. http://www.springerlink.com/app/home/contribution.asp?wasp=2l5x18d0wpduql8bbe27&referrer= parent&backto=issue,20,56;journal,1,56;linkingpublicationresults,1:101557,1 The authors conclude that associated spinal stenosis with osteoporotic vertebral compression fracture (OVCF) should not be overlooked; short tau inversion recovery (STIR) MRI is a good predictor of deformity correction with balloon kyphoplasty. The prevalence of a new OVCF in the adjacent level is low. Incidence of subsequent vertebral fracture after kyphoplasty.
- This study concludes that patients with an increase in back pain after kyphoplasty should be evaluated carefully for subsequent adjacent fractures.

http://www.spinejournal.org/pt/re/spine/abstract.00007632-200410150-00013

Fribourg D, Tang C, Sra P, Delamarter R, Bae H. Spine (2004) Oct 15;29(20):2270-6; discussion 2277.

Primary and secondary osteoporosis' incidence of subsequent vertebral compression fractures after kyphoplasty.

Harrop JS, Prpa B, Reinhardt MK, Lieberman I.

Spine (2004) Oct 1;29(19):2120-5.

http://www.spinejournal.org/pt/re/spine/abstract.00007632-200410010-00007

This study concludes that the kyphoplasty protocol with concurrent medical osteoporotic regimen does not appear to increase, and may serve to reduce, the incidence of remote and adjacent fractures for primary osteoporotic fractures.

Minimally invasive treatments for metastatic tumors of the spine.

Binning MJ, Gottfried ON, Klimo P Jr, Schmidt MH.

Neurosurgery Clinics of North America (2004) Oct; 15(4):459-65.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15450881

The authors contend that minimally invasive approaches are finding their way into all aspects of metastatic spinal disease from diagnosis to treatment of patients who are diagnosed early in their course as well as patients with multifocal metastases.

Wyphoplasty: a new opportunity for rehabilitation of neurologic disabilities.

Masala S, Tropepi D, Fiori R, Semprini R, Martorana A, Massari F, Bernardi G, Simonetti G. *American Journal of Physical Medicine & Rehabilitation (2004) Oct;83(10):810-2.*

http://www.amjphysmedrehab.com/pt/re/ajpmr/abstract.00002060-200410000-00013

Kyphoplasty is a new method for treatment of vertebral collapses consequent to osteoporosis, aggressive hemangiomas, myelomas, and metastases. The authors conclude that kyphoplasty may aid in the rehabilitation of the underlying systemic neurologic disorder if the pain is interfering with those therapies.

Pulmonary embolism of polymethyl methacrylate during percutaneous vertebroplasty and kyphoplasty.

Choe DH, Marom EM, Ahrar K, Truong MT, Madewell JE.

American Journal of Roentgenology (2004) Oct; 183(4):1097-102.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15385313

This study concludes that pulmonary embolism of cement is seen in 4.6% of patients after percutaneous vertebroplasty or kyphoplasty. The characteristic radiographic findings should be recognized by radiologists.

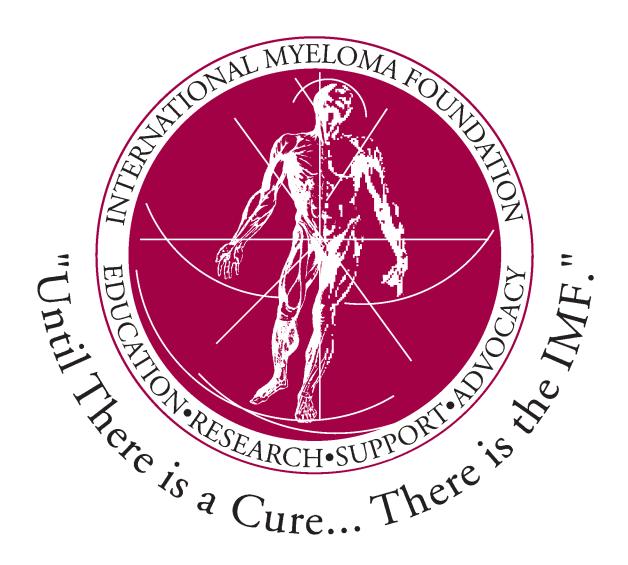
Wyphoplasty for treatment of osteoporotic vertebral fractures: a prospective non-randomized study.

Berlemann U, Franz T, Orler R, Heini PF.

European Spine Journal (2004) Oct;13(6):496-501. Epub 2004 Apr 09.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids =15083353

The authors conclude that kyphoplasty is an effective treatment of vertebral body compression fractures (VBCFs) in terms of pain relief and durable reduction of deformity. Whether spinal realignment results in an improved long-term clinical outcome remains to be investigated.



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