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Early Vertebroplasty for Spinal Metastatic Pain and Metastatic Fractures

Pankaj Nishikant Surange

Interventional Pain and Spine Centre, India

Pain due to Spinal Bony Metastasis and Metastatic Fractures is not uncommon. Most of these patients suffer from severe pain and do not respond adequately to medical management. Moreover, some of these patients have limited life expectancy and some of them have already reached the maximum radiation dose or have considerable side effects of radiotherapy, which is the mainstay of treatment. Specially, with Metastatic Fractures, it becomes difficult to heal due to loss of bony structures and these fractures make them crippled and leads to other complications related to loss of movements like Deep Vein Thrombosis, Bed-sores, Atelectasis.

90% of Vertebral Column Tumors are caused by metastasis from other organs. The vertebral column is the most common site of metastasis within the skeletal system, with 70% of diagnosed patients showing bone metastasis. Sites of metastasis break down to 60-80% in the thoracic spine, 15-30% in the lumbar spine and <10% in the cervical spine. In 30% of Vertebral Metastasis from solid tumors, VCF occurs by reduction of vertebral bone strength via osteoblastic or osteoclastic activity. Spinal Metastasis can lead to economic loss, severe pain, neurologic injury, decreased life quality and even death.

Early diagnosis and treatment of Spinal Metastasis and Metastatic fracture can preserve the patient's quality of life and the possibility of physical activities. Conventional treatments include surgery, chemotherapy, hormone therapy, and medical therapy. Although treatment can increase the median survival rate, for most patients, the purpose of treatment is reduction of pain, local disease progression, spinal instability, and neurologic complications. Pharmacotherapy using anti-inflammatory drugs (NSAID) and opioids are first used to treat pain but requires extended periods of bed rest. Since cancer and its treatment reduce the patient's immunity and cause the patient to be in a hyper-coagulation state, prolonged bed rest may increase morbidity from infection, Pneumonia, Deep Vein Thrombosis,

and Pulmonary Embolism. External Beam Radiation Therapy (EBRT) is effective against pain but requires at least 2-6 weeks to obtain results. Also, since continuous conventional EBRT can injure normal tissues and the nearby spinal cord, the procedure is limited by inevitable reduction of radiation dosage.

PVP is a minimally invasive method that can be performed under local anaesthesia with few complications; it can lead to rapid and effective cancer pain reduction with mechanical stability. Pain reduction after PVP is due to increased spine stability, tumor necrosis, and sensory nerve ending destruction. Tissue destruction occurs through highly exothermic reactions and local cytotoxic effects of Polymethyl Methacrylate (PMMA) polymerization. Furthermore, PMMA not only acts as an analgesic but also has antitumor effects. PMMA applied to a malignant vertebral body can cause tumor necrosis through its cytotoxic activity, thermal effect, and ischemia effect. Space-occupying cement blocks tumor cell growth. An early management with Percutaneous Vertebroplasty in Spinal Metastasis and particularly in Metastatic fracture can improve the quality of life and reduce their sufferings and complications.

Speaker Biography

Pankaj Nishikant Surange has completed his MBBS from G R Medical College, Gwalior, India; after which he had done MD (Anesthesiology) from Army Base Hospital, New Delhi, India. He has also done fellowship on Interventional Pain Practice-Budapest at Hungary. Currently he is director at Interventional Pain and Spine Center (IPSC India) located at New Delhi, India. He is Honary Secretary of Indian society for study of pain. He is Ex-Chairman of World Institute of Pain, India Sri Lanka Bangladesh and Pakistan Section; Founder member and Treasurer for Musculoskeletal Ultrasound Society of India and Founder member and Hon Secretary, Neuromodulation Spine society of India International Member of Spine Intervention Society. He is Academic head of Symbiosis International University for Pain management courses and invited faculty at various national and International conferences 2 Editorials and 3 International and 5 National Publications Book Chapters: 3. He was Recipient of Pain Awareness Ambassador Award 2015, Excellence in pain practice award by World Institute of pain 2017 and National Pain Physician of the year Award 2016.

e: moazzem.iacib@gmail.com



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