

A novel position for D2 kyphoplasty: Swimmer's position

Sir,

Kyphoplasty for benign osteoporotic fractures is mainly carried out under local anaesthesia. Kyphoplasty for malignant lesions (multiple myeloma) or spinal metastases from primary tumours elsewhere in the body (breast, prostate), often requires prone positioning under general anaesthesia using an armoured or flexometallic tube.^[1] These kyphoplasties are performed under portable C-arm/fluoroscopic guidance in the operation room. The two upper limbs are generally kept 90° abducted at the shoulder joint and 90° flexed at the elbow joint, the forearms lying parallel to the long axis of the pronated head. The forehead and chin rest against elevations on the head rest while supports are placed under the iliac crests and upper thorax.^[2] Care is taken to keep the eyeballs and abdomen free from contact with the operation table. All lumbar and almost all thoracic vertebrae lesions can be subjected to needle implantation and bone cement injection in this standard position. However, while imaging T1 and T2 lesions using the C-arm, with patient in standard position, the shoulder mass obstructs the view of lower cervical and first two thoracic vertebrae making surgery impossible. To overcome this predicament, we devised a special modified prone position, the 'Swimmer's position'

inspired by the cervicothoracic Swimmer's view X-ray (SVXR) for lateral projection in cervical spine X-rays.^[3]

The most common cervical projections in routine use in the radiology suite are the anteroposterior and lateral. Special projections such as the 'swimmer's view' may be employed for better demonstration of C-7 and T-1 to T-3 vertebrae, which on the standard lateral projection are obscured by the overlying clavicle and shoulder girdle soft tissues. The patient stands with his coronal plane perpendicular to the X-ray plate, raises one arm, lowering opposite shoulder and rotating both shoulders away from midline.^[3,4] The shoulder mass is moved aside, revealing the lower cervical, T1 and T2 vertebrae. Swimmer's View X Ray (SVXR) is a complicated X-ray for both the radiographers and patient because of complex patient positioning. The shoulders may have limited flexibility and particularly in trauma patients, pulling or adjusting the arms may worsen any cervical spine injury. SVXR has largely been replaced with newer imaging modalities such as computed tomography (CT) scan and magnetic resonance imaging (MRI) in the radiology suite.^[3] However, for D2 lesions being operated under fluoroscopic guidance, this position is a boon since CT and MRI imaging are not available as point-of-care facilities for the intraoperative period unlike the C-arm. Under general anaesthesia, there is a real risk of traction nerve injury in patients operated in the prone position. We obtained our Swimmer's position with the patient prone [Figure 1] and not



Figure 1: Intraoperative image of the Swimmer's position for D2-Kyphoplasty and a computed tomography scan image showing the D2 lesion

standing as in the radiology suite. The left arm was abducted 180° and left shoulder raised on a small sandbag while the right arm was adducted flush with the patient's body [Figure 2]. Proper padding of pressure points was done. We suspended the patient's breathing in full expiration at the time of C-arm exposure for a better image.

The Swimmer's position provided excellent intraoperative visualisation of the D2 lesion with no postoperative complications such as nerve traction injuries, attributable to the new modified prone position.

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Conflicts of interest

There are no conflicts of interest.

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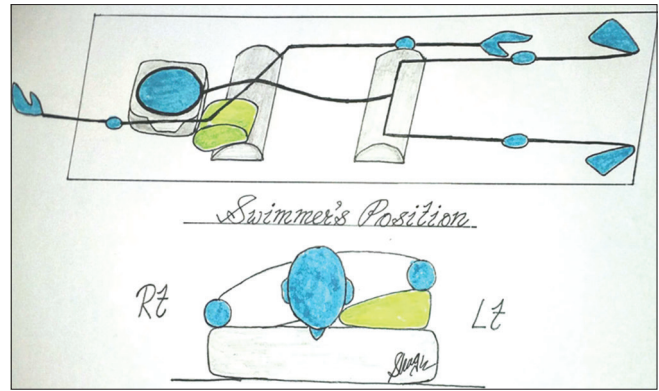


Figure 2: Line diagram depicting the patient in Swimmer's position

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