Strategies in Managing Bamboo Spine Fractures

Danapala H, Foo CH, Chan SK, Lim HS, Tan BB, Teo YY, Wong CC

Department of Orthopaedics, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia
Department of Orthopaedics, University Malaysia Sarawak (UNIMAS), Kuching, Sarawak, Malaysia
Department of Orthopaedics, Sarawak General Hospital, Kuching, Sarawak, Malaysia

INTRODUCTION:
Ankylosing spondylitis (AS) is a spondyloarthropathy with unknown aetiology. It has strong genetic predisposition, association with HLA-B27, and may be triggered by environmental factors such as infection. Ankylosis leads to altered vertebral bone composition and spine biomechanics, causing increased susceptibility to vertebral fractures. We report a case of an undiagnosed AS patient who presented with lumbar spine fracture following a trivial fall.

CASE REPORT:
A 65 years old man presented with bilateral lower limb weakness two days after falling from standing position. Immediately post trauma, patient was asymptomatic. However, he could not ambulate due to bilateral lower limb weakness in the following day. Assessment revealed neurological level was L2. Radiographs showed fracture dislocation of L2-L3 vertebrae. He had classical AS radiological features e.g. kyphosis of thoracic spine and marginal syndesmophytes of whole spine. He underwent posterior spine instrumentation and fusion (PSIF) from T11 to S2 with posterior decompression followed by rehabilitation.

DISCUSSIONS:
Patients with AS can easily sustain unstable three column spine fractures with trivial trauma. Thorough assessment and investigations are warranted to establish correct diagnosis. Neurological insult is common as spine kyphosis causes hyperextension at fracture site even as patient lies supine. Therefore, pre-operatively, patient positioning is paramount to prevent any neurological deterioration. Perioperatively, fibreoptic intubation is advised to minimize manipulation of cervical spine. In addition, proper operation table padding helps to maintain existing cervical alignment. These prevents iatrogenic cervical fracture.

Surgical stabilization of spine requires a long construct due to the long lever arm effect of the ankylosed spine. Longer construct reduces stress at each vertebral level and prevents fracture adjacent to construct. Reduced bone mass density in AS may affect the purchase of the screws. Therefore, the anterior cortex can be deliberately penetrated during screw placements to attain better purchase. Post operatively, patient must be started on rehabilitation to minimize post-operative complications.

CONCLUSION:
AS patients can have spinal fracture following trivial trauma, and its presence serves as a reminder to be vigilant in assessing, diagnosing and managing patient.

REFERENCES: