

## Cervical Cliffhanger: A Case Report on Hangman's Fracture

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### INTRODUCTION:

Traumatic spondylolisthesis of axis, also known as Hangman's fracture is a fracture to the bilateral pars interarticularis of C2 which accounts for 4 -7 % of all types of cervical spine fractures. Gold standard of diagnostic measure is made via computed tomography (CT) cervical spine. To this day, the available data for guiding the treatment of these injuries remains limited. The Levine-Edwards classification system is widely utilized, categorizes fractures by mechanisms of injury. Type I injuries are considered stable, whereas type II, IIA, and III injuries are unstable as they usually involve ruptures of the C2/C3 disc with anterior and posterior longitudinal ligament. Here we report a remarkable survival case involving a hangman fracture.

### REPORT:

A case of a 73 year old male, alleged motorbike skid and sustained pain over posterior neck. Post trauma he had no loss of consciousness or retrograde amnesia. He complained of headache and difficulty in weight bearing due to cervical tenderness. On examination, there was midline tenderness over cervical region with limited neck range of motion. Primary survey and vital signs were within normal range. Neurological examination revealed intact power and sensation over bilateral upper and lower limbs. Anal tone, perianal sensation and bulbocavernous reflex were intact. CT brain and cervical revealed C2 vertebral body fracture dislocation with transversarium foramina involvement, fracture of anterior and posterior tubercle of right C3 transversarium foramen. Patient was temporarily immobilized with crutchfield skull traction. Subsequently he went in for spinal fixation, C2-C3 anterior cervical plate.

Intraoperatively no complications encountered, and the patient demonstrated a quick recovery without any neurological deficits. Currently patient is kept on cervical collar and undergoing active rehabilitation therapy.

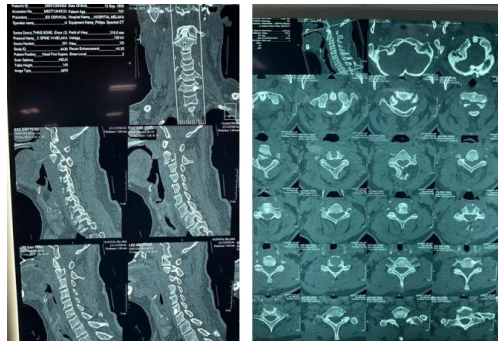


Figure 1



Figure 2

Figure 1 : Cervical CT  
Sagittal and Axial view  
Figure 2 : Post op check xray  
lateral cervical

### DISCUSSION:

Various treatment protocols for hangman fracture have been studied over the past years, however guidelines on operative and non-operative have not been solidified. Conservative approach includes Halo vest, Minerva jacket and hard collar. Surgical procedure includes anterior cervical dissection and fusion, posterior fixation and fusion and a combination of anterior-posterior approach. Bone union is the principal evaluation criterion used to assess successful treatment.

### CONCLUSION:

Both operative and non-operative treatment has a fair rate of union however complications are said to be higher in conservative approach. Surgical treatment leads to an increase in the rate of osteosynthesis / fusion without significantly increasing the rate of complication.

### REFERENCE:

1. Feng Li et al. , A systematic review of the management of hangman's fractures, Euro Spine Journal, 2006 Mar; 15(3): 257–269
2. S. Prost et al. / Orthopaedics & Traumatology: Surgery & Research 105 (2019) 703–707