C2 HANGMAN FRACTURE TYPE 2A TREATED WITH HYBRID SURGICAL TECHNIQUE

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INTRODUCTION

We present a patient with unstable traumatic spondylolisthesis of axis treated surgically using a hybrid technique of wiring and screws.

CASE REPORT:

We report a case of a 17 year old Pakistani Male, who suffered Hangman fracture Effendi Type III injury with no neurological deficit. After successful closed reduction using skull tong traction, definitive Posterior spinal instrumentation and fusion from C1-C4 level was performed. Lateral mass screw was unable to be inserted due to the small size of the arch of C1. After, lateral mass screw of C3 and C4 was inserted we used sublaminar wiring for C1 vertebra and looped it under C3-C4 construct. Postoperatively, the cervical spine was put on cervical collar.

DISCUSSIONS:

Many techniques have been described over time to aid in the stabilization of the cervical spine from a posterior approach. Techniques such as lateral mass screws and rods, and sub-laminar wiring develop over time for fixation of Hangman fracture[1]. Sub-laminar wires are typically utilized in this fashion at the C1-C2 level, where anatomy can often make screw placement technically challenging, and the spinal canal anterior-posterior diameter is large. In our case, C1 lateral mass screw insertion was not possible due to small C1 pedicle and inability to retract the C2 nerve root, C1 sublaminar wire was used, then wrapped around C3-4 lateral mass screw and rod construct. This novel technique has never been reported in the literature.

Figure 1 : C2 vertebra fracture

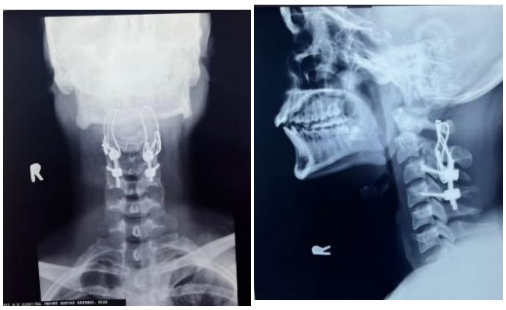

Figure 2 : PSIF C1-C3

CONCLUSION:

A novel hybrid technique of sub-laminar wiring to a screw-rod construct is a feasible technique to stabilize Hangman fracture where the C1 screw is unable to be inserted.

REFERENCES:

1. 1. Posterior fixation techniques in the subaxial cervical spine. Ghori A, Le HV, Makanji H, Cha T. *Cureus.* 2015;7:338.