



Occipitocervical fixation: A single surgeon experience with 120 patients.

Eduardo Martinez del Campo Oviedo MD; Samuel Kalb MD; Jay D. Turner MD, PhD; Luis Perez-Orribo; Leonardo Rangel-Castilla MD; Hector Enrique Soriano-Baron MD; Nicholas Theodore MD, FACS

BARROW NEUROLOGICAL INSTITUTE

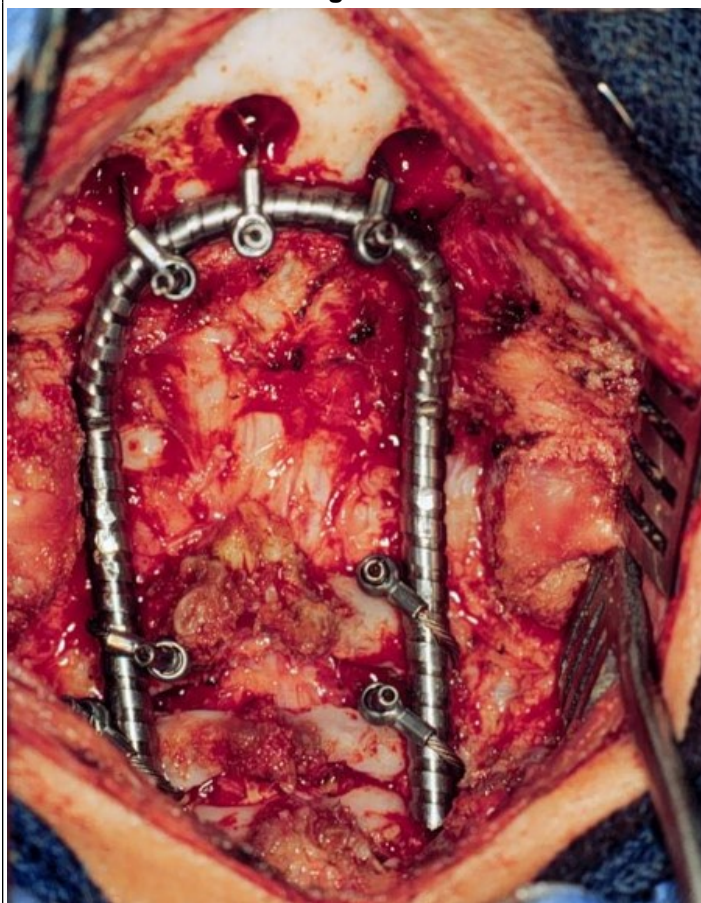
St. Joseph's Hospital and Medical Center



Introduction

Occipitocervical junction instability can lead to serious neurologic injury or death if left untreated. Open surgical fixation is often necessary in order to provide definitive stabilization.

Figure 1



Steinman pin placement from O-C2

Methods

The charts of all patients undergoing posterior internal fixation by the senior author were retrospectively reviewed. One hundred and twenty consecutive patients were identified for analysis. Patient demographics, occipitocervical junction pathology, surgical indications, clinical and radiographic outcomes are reported.

Results

The study population consisted of 64 males and 56 females, mean age of 39.9 years (range 7 months - 88 years). Trauma was the most common cause of instability, occurring in 56 patients (46.7%). Ninety patients (75%) were treated with screw/rod constructs; wiring was used in 30 patients (25%). The median number of fixated segments was 5 (O-C4). Structural bone grafts were implanted in most patients (83.3%). Pre-operative neurological deficits were present in 83 patients (69.2%). Overall neurological improvement was 90.9%. Mean follow-up was 16.1 months (range 4-107 months). There was radiographic evidence of fusion in all patients (100%). One patient suffered neurological deterioration and none died during the first year after surgery. The overall complication rate was 10.8%, including 3 patients with vertebral artery injuries and 2 patients with hardware failures which required surgical correction.

Conclusions

OC fixation is a durable treatment option

Figure 2



Lateral radiograph (neutral position) of occipital to C1 screw/rod system with bilateral C1 pedicular screws.

Learning Objectives

The authors review the causes of occipitocervical instability, discuss the indications for surgical intervention, and evaluate long-term surgical outcomes after occipitocervical fixation.