

# Innovative Treatment in C-Spine Trauma in Young Children

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# Innovative Tx in C-Spine Trauma in Young Children - Introduction

## Treatment principles:

- Deformity correction

- Injury stabilisation

- Prevention of additional SCI

- Promote healing

  - ligamentous

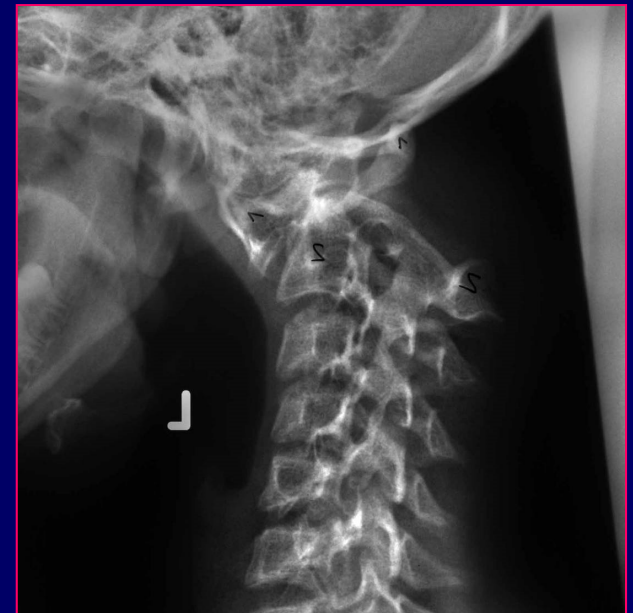
  - fracture

  - fusion

- Prevent late posttraumatic deformity

- Preserve possible motion segments

- Allow continued growth



# Innovative Tx in C-Spine Trauma in Young Children - Methods

Retrospective review of Tx methods in  
2 cases of children with c-spine injury  
< 2 years of age

# Innovative Treatment in C-Spine Trauma in Young Children Case 1

Tx methods:

- Occipital plate

- C1/C2 instrumentation

- Temporary instrumentation

# Innovative Tx in C-Spine Trauma in Young Children Case 1



16 mo F

S/p auto accident (icy road - car into tree)

Polytrauma (head, SCI, lung contusion, humerus fx)

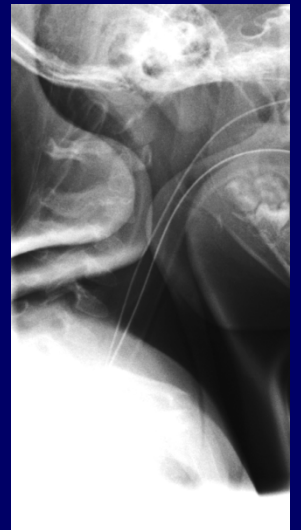
Neuro exam inconclusive (generalized hypotonia)

Radiographic work-up:

Traumatic atlanto-occipital subluxation

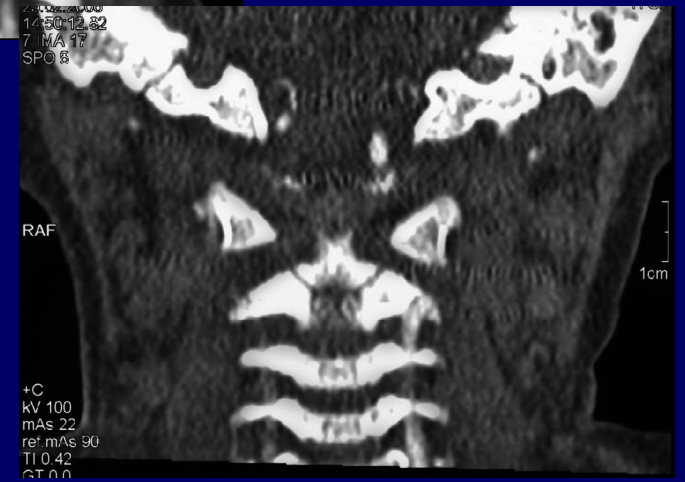
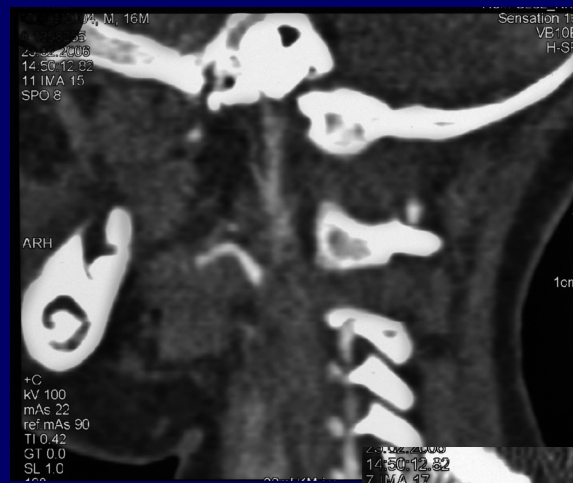
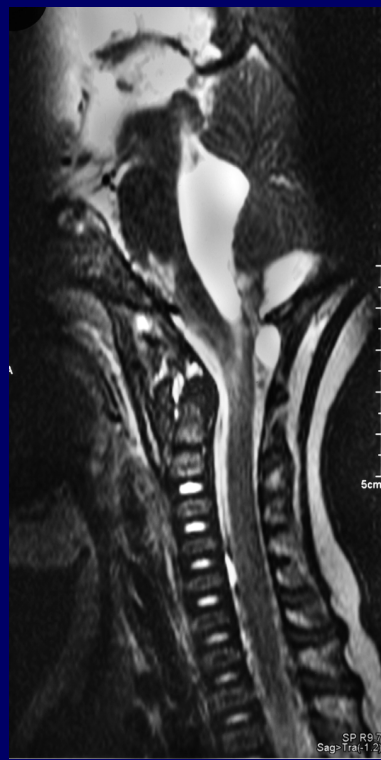
Complete tearing of ligaments &

C1/C2 jt capsules



# Innovative Treatment in C-Spine Trauma in Young Children

## Case 1

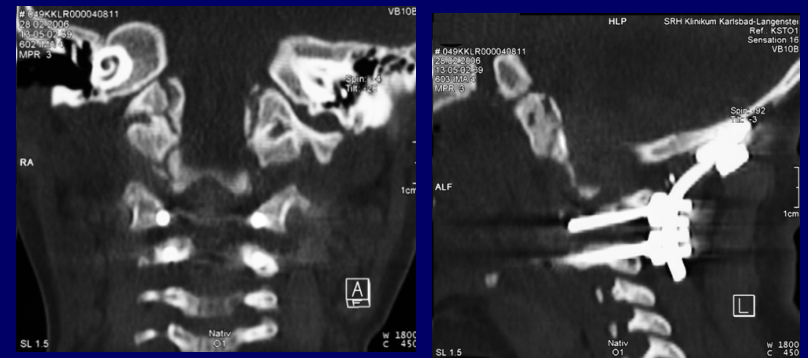
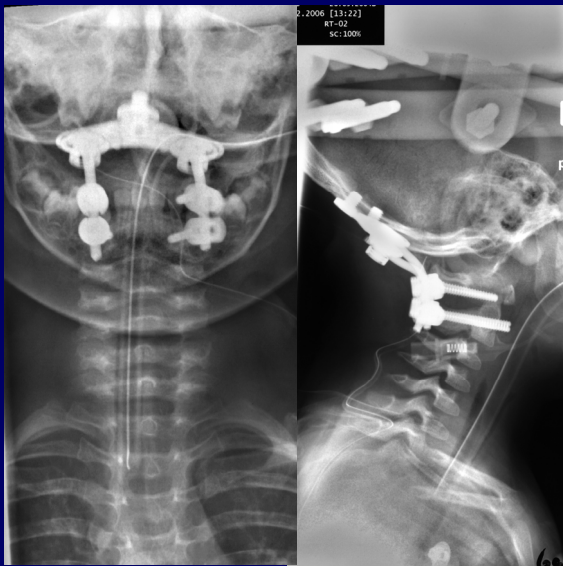


# Innovative Tx in C-Spine Trauma in Young Children Case 1

## Treatment:

2.06 Post. instrumentation C0/C1/C2 w/ fusion C0/ C1  
Halo body jacket x 3 mos.

Removal of C2 screws 12.06 after healing of lig.  
& capsular injury



# Innovative Tx in C-Spine Trauma in Young Children Case 2

Tx methods:

Pedicle screw instrumentation lower c-spine



# Innovative Tx in C-Spine Trauma in Young Children Case2

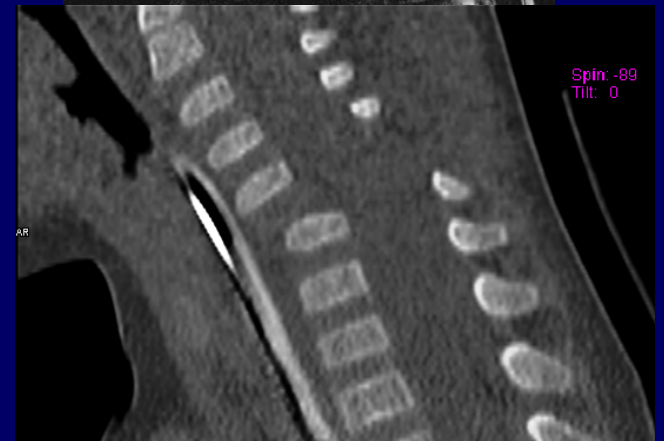
18 mo M

Hit by car – thrown ~ 1 m

Polytrauma (head trauma, SCI, rib fx)

Neuro exam: complete tetraplegia C6

Radiographic w/up: unstable fx  
dislocation C5/6 w/ spinal cord lesion  
C6/7



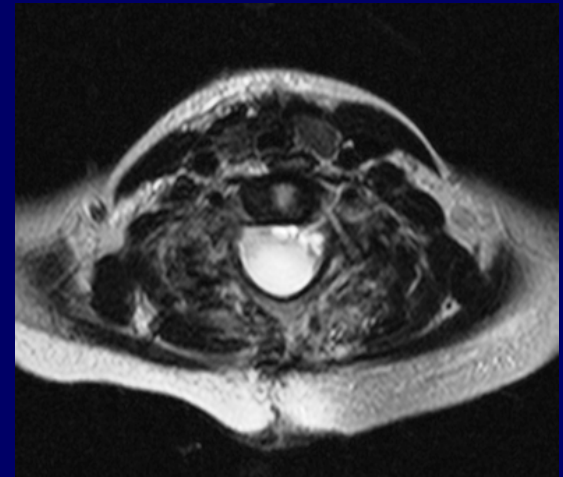
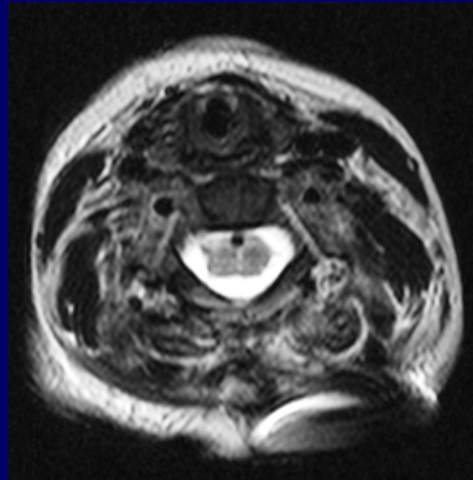
# Innovative Tx in C-Spine Trauma in Young Children Case 2

2.9.06 – posterior pedicle screw instrumentation  
C4 – C7 left, C5 – C7 right



# Innovative Treatments in Cervical Spine Trauma Case 2

MRI 6.07 after ROH (5.07)  
w/ cyst & syrinx formation



# Innovative Tx in C-Spine Trauma in Young Children -Conclusions

Versatile instrumentation & a variety of techniques allow for reduction of & maintenance of reduction in various c-spine injuries including those at the junctional regions in very young children

Temporary instrumentation w/ the expectation of fx or ligamentous healing vs permanent instrumentation & fusion may be a goal of surgery depending on the nature of the injury & age of the patient