



CONGRESSO
NAZIONALE
IRC 2  22

TRAUMA: NUOVE EVIDENZE E PERCORSI

AUDITORIUM DELLA TECNICA • ROMA • 14-15 OTTOBRE



Italian
Resuscitation
Council

STABILIZZAZIONE VERTEBRALE PRECOCE VS TARDIVA

*Dott.ssa Maria Rita Zambuto
Neurochirurgo
AO San Camillo Forlanini Roma*



SISTEMA SANITARIO REGIONALE

AZIENDA OSPEDALIERA
SAN CAMILLO FORLANINI



Italian
Resuscitation
Council

Traumatic Spinal Injury: Global Epidemiology and Worldwide Volume

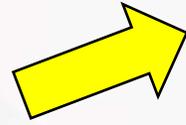
[World Neurosurg. 2018 May;113:e345-e363.](#)

Ramesh Kumar ¹, Jaims Lim ², Rania A Mekary ³, Abbas Rattani ⁴, Michael C Dewan ⁵,
Salman Y Sharif ⁶, Enrique Osorio-Fonseca ⁷, Kee B Park ⁸

10,5 CASI OGNI 100.000 PERSONE
768.000 NUOVI CASI OGNI ANNO IN
TUTTO IL MONDO

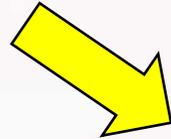
INCIDENTI STRADALI E LE CADUTE AD ALTA
ENERGIA
IL 48% DEI PAZIENTI NECESSITA DI TRATTAMENTO
CHIRURGICO

TRAUMI SPINALI



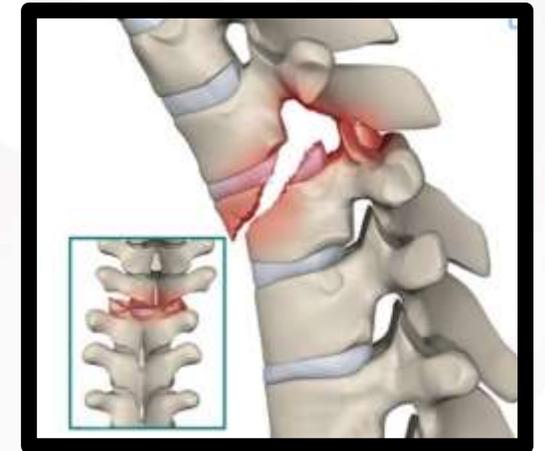
traumi VERTEBRALI

NO SEGNI
NEUROLOGICI



traumi VERTEBRO-MIDOLLARI

DEFICIT NEUROLOGICI



traumi VERTEBRALI

ASSENZA DI DEFICIT NEUROLOGICI



ESAME TC CON RICOSTRUZIONI

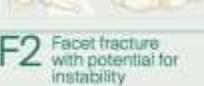
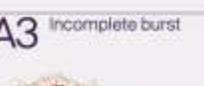


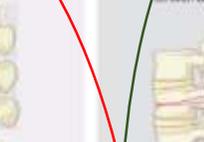
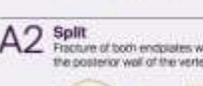
traumi VERTEBRALI

A FRATTURE DA COMPRESSIONE

B FRATTURE CON INTERESSAMENTO DEL SISTEMA DISCO-LEGAMENTOSO

C FRATTURE CON TRASLAZIONE

Type A Compression Injuries	Type B Tension Band Injuries	Type C Translation Injuries
A0 Minor, nonstructural fractures 	B1 Posterior tension band injury (bony) 	C Translational injury in any axis-displacement or translation of one vertebral body relative to another in any direction 
A1 Wedge-compression 	B2 Posterior tension band injury (bony capsuloligamentous, ligamentous) 	Type F Facet injuries F1 Nondisplaced facet fracture 
A2 Split 	B3 Anterior tension band injury 	F2 Facet fracture with potential for instability 
A3 Incomplete burst 	BL Bilateral injuries BL Bilateral injury 	F3 Floating lateral mass 
A4 Complete burst 		F4 Pathologic subluxation or perched/dislocated facet 

Type A Compression Injuries	Type B Distraction Injuries	Type C Translation Injuries
A0 Minor, nonstructural fractures Fractures, which do not compromise the structural integrity of the spinal column such as transverse process or spinous process fractures. 	B1 Transosseous tension band disruption Chance fracture Monosegmental pure osseous failure of the posterior tension band. The classical Chance fracture. 	C Displacement or dislocation There are no subtypes because various configurations are possible due to dissociation/dislocation. Can be combined with subtypes of A or B. 
A1 Wedge-compression Fracture of a single endplate without involvement of the posterior wall of the vertebral body. 	B2 Posterior tension band disruption Bony and/or ligamentary failure of the posterior tension band together with a Type A fracture. Type A fracture should be classified separately. 	B3 Hyperextension Injury through the disc or vertebral body leading to a hyperextended position of the spinal column. Commonly seen in ankylosing disorders. Anterior structures, especially the ALL, are ruptured but there is a posterior hinge preventing further displacement. 
A2 Split Fracture of both endplates without involvement of the posterior wall of the vertebral body. 		
A3 Incomplete burst Fracture with any involvement of the posterior wall, only a single endplate fractured. Vertical fracture of the lamina is usually present and does not constitute a tension band failure. 	A4 Complete burst Fracture with any involvement of the posterior wall and both endplates. Vertical fracture of the lamina is usually present and does not constitute a tension band failure. 	

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PERCORSO CONSERVATIVO

FRATTURE STABILI CON CIFOSI ACCETTABILI



PERCORSO CHIRURGICO

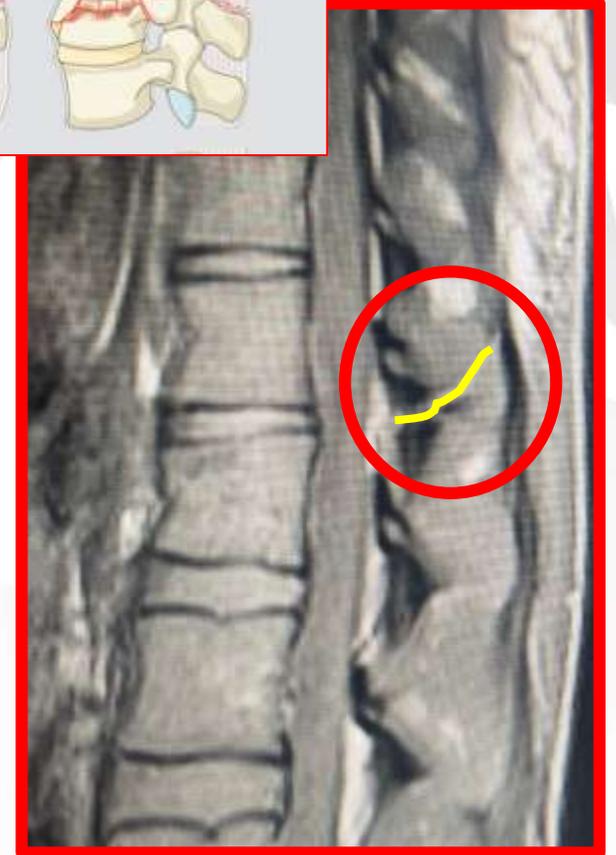
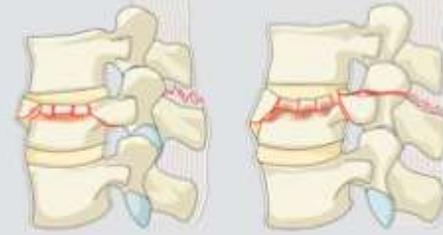
FRATTURE INSTABILI



**IN ASSENZA DI DEFICIT NEUROLOGICI LO SCOPO DELL'INTERVENTO E' GARANTIRE LA STABILITA' E
CONSENTIRE IL CARICO PRECOCE**

UOMO 22 ANNI Frattura L1

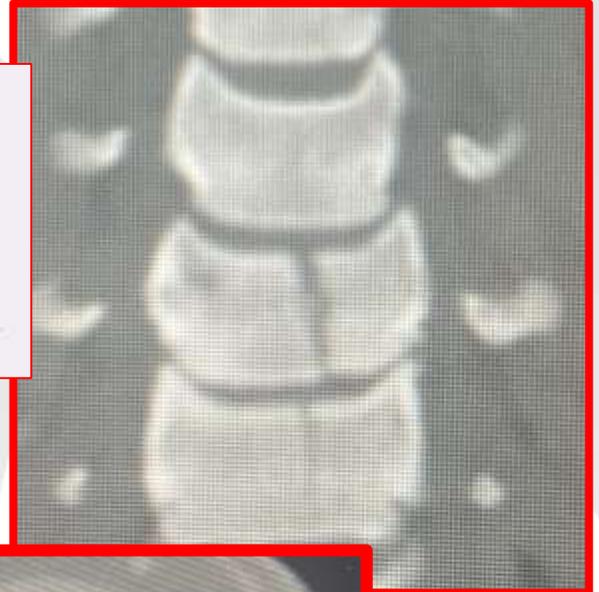
B2 Posterior tension band disruption
Bony and/or ligamentary failure of the posterior tension band together with a Type A fracture.
Type A fracture should be classified separately.



UOMO 22 ANNI Frattura L1



UOMO
42 ANNI
Frattura C5





1 MESE





traumi VERTEBRO-MIDOLLARI

In ITALIA:
2500/CASI ANNO
PREVALENZA 60-70 MILA CASI

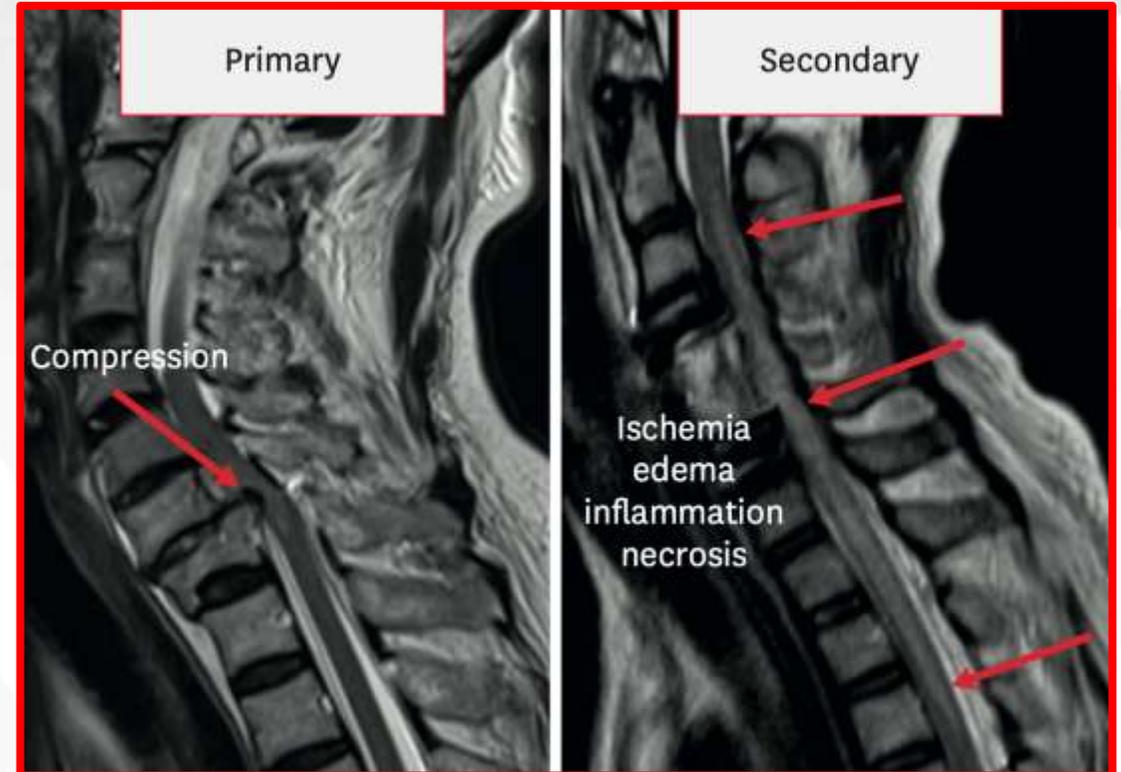
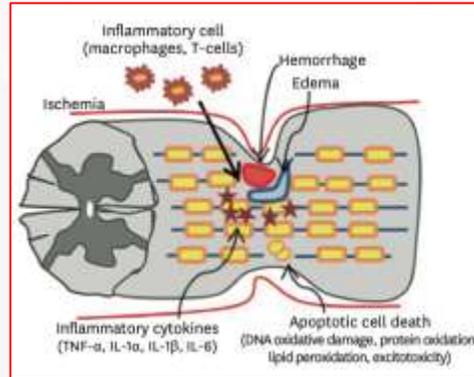
Una frattura ossea cervicale è associata al 56% delle lesioni del midollo spinale.
Mortalità dal 5 al 10%

DANNO PRIMARIO



EVENTO TRAUMATICO

DANNO SECONDARIO



traumi VERTEBRO-MIDOLLARI

Early versus delayed decompression for traumatic cervical spinal cord injury: results of the Surgical Timing in Acute Spinal Cord Injury Study (STASCIS)

Michael G Fehlings¹, Alexander Vaccaro, Jefferson R Wilson, Anoushka Singh, David W Cadotte, James S Harrop, Bizhan Aarabi, Christopher Shaffrey, Marcel Dvorak, Charles Fisher, Paul Arnold, Eric M Massicotte, Stephen Lewis, Raja Rampersaud

Epub 2012 Feb 23.

Multicenter Study

INTERVENTO CHIRURGICO ENTRO LE 24 H

ASIA A e B considerati più urgenti
ASIA C e D considerati meno urgenti

ASIA Impairment Scale		
A	Complete	No motor, No sensory, No sacral sparing,
B	Incomplete	No motor, sensory only
C	Incomplete	50% of muscles LESS than grade 3 (cant not raise arms or legs off bed)
D	Incomplete	50% of muscles MORE than grade 3 (can raise arms or legs off bed)
E	Normal	Motor and sensory function are normal

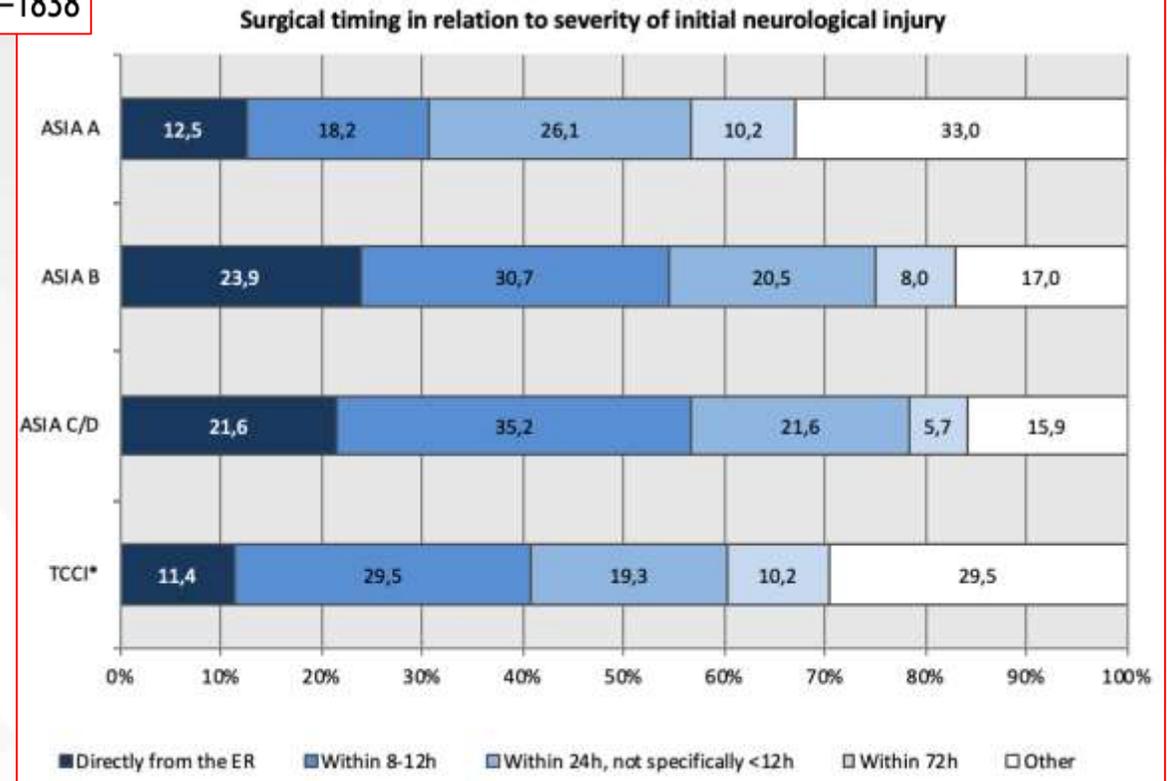
traumi VERTEBRO-MIDOLLARI

Timing of surgery in traumatic spinal cord injury: a national, multidisciplinary survey

European Spine Journal (2018) 27:1831–1838

P. V. ter Wengel^{1,7} · R. E. Feller¹ · A. Stadhouders² · D. Verbaan^{1,3} · F. C. Oner⁴ · J. C. Goslings⁵ · W. P. Vandertop

LESIONI INCOMPLETE TRATTATE PIU' TEMPESTIVAMENTE



traumi VERTEBRO-MIDOLLARI

Current Practice of Acute Spinal Cord Injury

Global Spine J. 2022 Aug 29

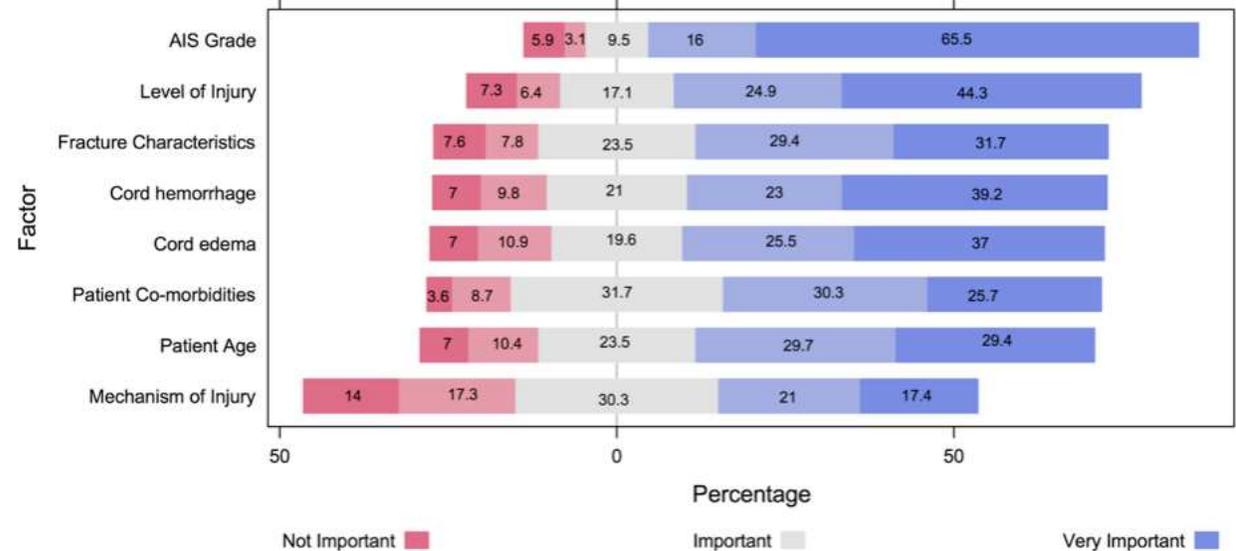
Management: A Global Survey of Members from the AO Spine

la definizione di intervento "precoce", rimane controversa.

lo stato neurologico gioca un ruolo significativo nel processo decisionale

Pazienti con una lesione incompleta sono più responsivi alla chirurgia precoce rispetto a quelli che sostengono una lesione midollare completa (ad es. AIS A)

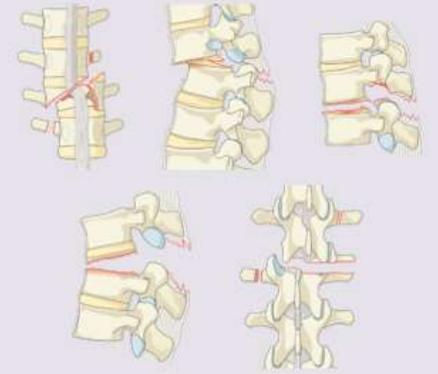
How important are the following factors in your decision-making for early surgical treatment? n= 357



UOMO
46 ANNI
Frattura-
lussazione
D8-D9



C Displacement or dislocation
There are no subtypes because various configurations are possible due to dissociation/dislocation. Can be combined with subtypes of A or B.

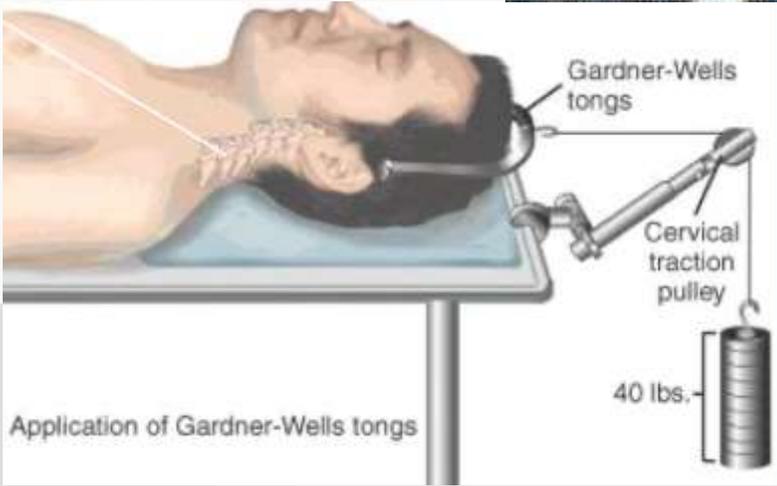


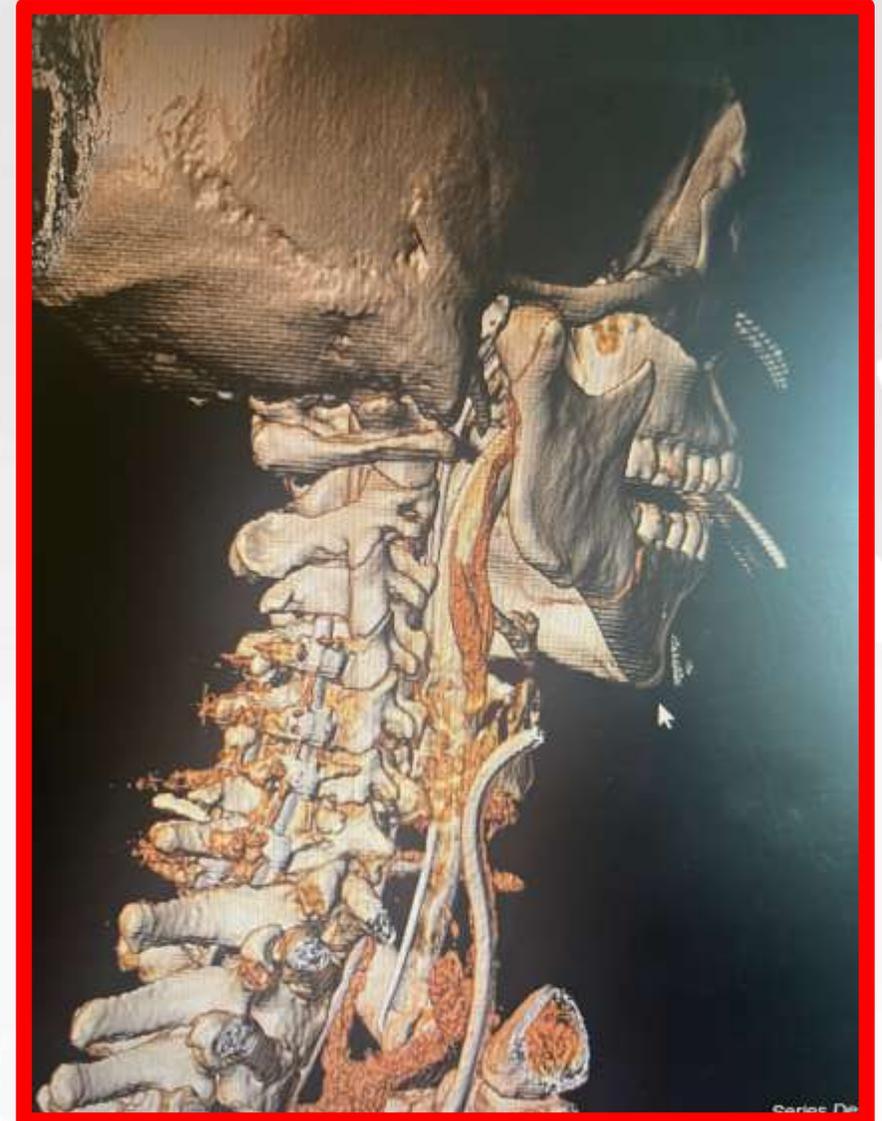


**UOMO
37 ANNI**
Frattura-
lussazione C5-C6

C Translational injury in any axis-displacement or translation of one vertebral body relative to another in any direction







CONCLUSIONI

- Il trattamento delle lesioni vertebrali amieliche serve a proteggere da instabilità e garantire il carico precoce
- La **gravità della lesione neurologica** iniziale nel trauma vertebro midollare sembra svolgere un ruolo importante nel processo decisionale per la tempistica della decompressione chirurgica nella pratica quotidiana.
- I pazienti con trauma midollare e lesione centromidollare completi sono preferibilmente gestiti in modo meno urgente rispetto ai pazienti con tSCI incompleto.
- Un numero considerevole di chirurghi preferisce eseguire un intervento chirurgico precoce in caso di trauma midollare incompleto.

GRAZIE

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