Spiotta, Alejandro M, y Salvador Martorell Matoses. 2011. «Neurosurgical Considerations After Bull Goring During Festivities in Spain and Latin America». Neurosurgery 69 (2) (Agosto): 455-461. doi:10.1227/NEU.0b013e3182191fb1.

El Hospital Clínico Universitario de Valencia-España y el Cerebrovascular Center, Neurological Institute, Cleveland Clinic en Ohio publican en Agosto 2011 en la revista Neurosurgery

Consideraciones neuroquirúrgicas tras herida por asta de toro en España y América Latina.

La víctima de un accidente por asta de toro puede tener una combinación de trauma penetrante y cerrado craneal y cervical en un 3,1% a 19% de los casos.

Estos pacientes se deben evaluar y tratar como politraumatizados con las pautas establecidas por la

Brain Trauma Foundation

Este algoritmo permite una evaluación rápida y triaje que es relativamente simple y fácil de seguir.

Se hace hincapié en la necesidad de determinar los sujetos con mayor riesgo de herniación inminente y la identificación de fuentes de sangrado para evitar la hipotensión.

El artículo se publica en la revista Neurosurgery y es free

Artículo

Field Management of Combat-Related Head Trauma

BTF
BRAIN TRAUMA FOUNDATION

- Control massive bleeding
- Initiate ABC resuscitation
- Consider c-spine precautions for high-risk blunt trauma
- Administer 100% oxygen when available
- Assist ventilations
- Determine need for immediate evacuation

Calculate initial GCS† score & assess pupils

GCS 3-8 | GCS 9-13 | GCS 14-15

‡ Signs of Impending Herniation
- Asymmetric Pupils
- Fixed Dilated Pupil
- Extensor Posturing
- Widening Pulse Pressure

If GCS 3-8, prepare for rapid evacuation

Impending herniation?‡

Yes / No

See Intubation/ COMBITUBE Protocol

Stabilize airway hyperventilate consider ALS airway

Assess SaO_2 and administer 100% oxygen if available to maintain > 90%

Monitor $EtCO_2$ if possible maintain between 35-45mmHg

Re-Assess source of bleeding

Control bleeding

Re-Assess circulation
SBP <90mmHg

Any casualty with a GCS ≤ 14 should not return to full duty until GCS resolves to 15 and is asymptomatic

* Fluid Resuscitation
- 500ml bolus HTS
- follow with isotonic crystalloid to maintain SBP>90mmHg

~or~

- isotonic crystalloid infusion to maintain SBP>90mmHg

Yes / No

Initiate fluid resuscitation*

IV TKO

Re-Assess GCS score & assess pupils

GCS 3-8 | GCS 9-13 | GCS 14-15

Immediate evacuation necessary

Evacuation from field (can be delayed)

Remain in field observation and reassessment necessary

†Glasgow Coma Scale

GCS Scoring should be completed after the initial resuscitation of ABC's. During the initial assessment, field providers may use AVPU scoring to gauge a rough level of mentation.

Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Best Verbal Response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	None	1
Best Motor Response	Obeys Commands	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion (Decorticate)	3
	Extension (Decerebrate)	2
	None	1

Important Points to Remember

1. Oxygen 100% per NRB mask or BVM as needed.
2. Not all casualties require ALS airway management. Some may be easily managed with BLS adjuncts and a BVM.
3. Aggressive airway management may be needed if the ventilations are not effective. Secure the airway and assist ventilations PRN.
4. Monitor and maintain SaO_2 > 90%.
5. Monitor and maintain systolic BP > 90mmHg.
6. Perform serial GCS exams q 5-10 min and PRN.
7. Monitor and maintain $EtCO_2$ should be between 35-45 mmHg.
8. Hyperventilation only for signs of herniation.
9. Isolated head injuries do not cause shock. If shock is present look for other causes.
10. Any casualty with a GCS ≤ 14 should not return to full duty until GCS resolves to 15