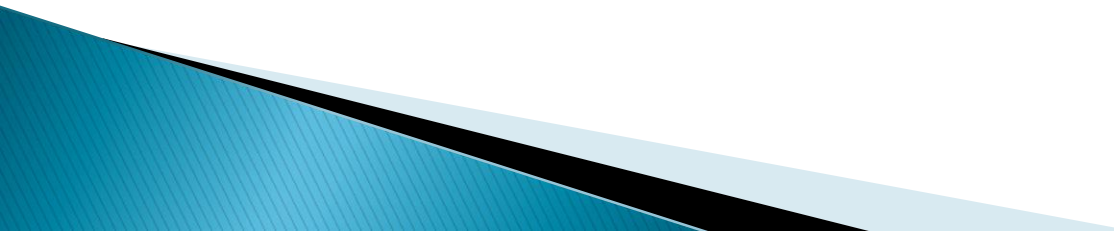


EMERGENCY BURR HOLES

By: Maj David F. Bradley Jr.
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OBJECTIVES

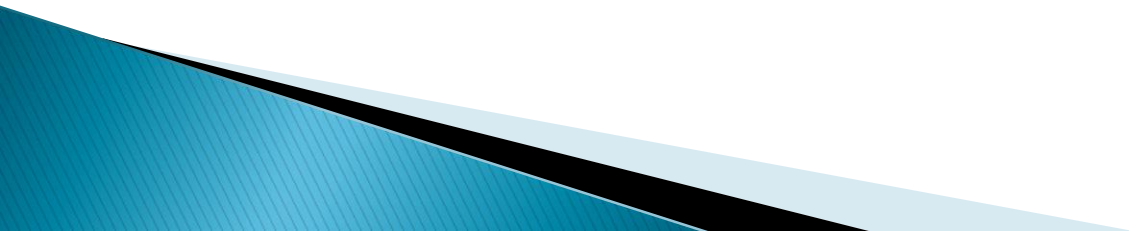
- ▶ Brief description of emergency burr holes (EBH)
 - ▶ Indications for performing emergency burr holes
 - ▶ Possible complications / survivability or functionality
 - ▶ Impact of emergency burr holes in the operational setting as it relates to manpower, resources, sterilization, and education needs
- 

BRIEF DESCRIPTION OF EBH

- ▶ Determine where burr hole(s) should be via CT
- ▶ Pt placed under general anesthesia
- ▶ Pt positioned, incision site shaved and prepped
- ▶ Burr Hole is made with drill
- ▶ Dura incision made, expose with rongeur
- ▶ Hematoma or clot evacuated
- ▶ Bleeding stopped via ESU
- ▶ Hole is irrigated and burr hole cover is placed
- ▶ Temporary drain/ shunt/ pressure device placed
- ▶ Skin closed and patient sent for monitoring on neurosurgical unit

Video

<http://www.youtube.com/watch?v=jD3JTOaS2-0>



INDICATIONS FOR EBH

- ▶ Posttraumatic brain swelling (head injury)
- ▶ Craniotomy
- ▶ Hematoma
- ▶ Intraparenchymal cerebral abscesses

(Smith, Ughratdar and MacArthur, 2009)

- ▶ Obstructed CSF

(Ferrara-Hoffman & Krizman, 2013)



COMPLICATIONS OF EBH

- ▶ Postop infection
- ▶ Bleeding requiring a return to the operating room
- ▶ A blood clot may require further surgery
- ▶ Heart attack
- ▶ Stroke
- ▶ No improvement in patients condition

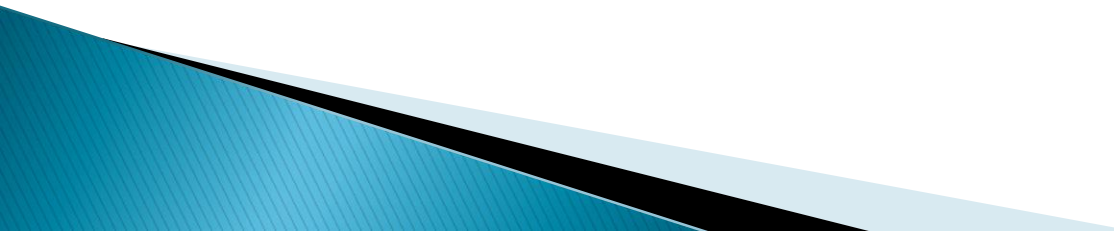
SURVIVABILITY OF EBH

- ▶ Survivability outweighs the risks involved in this procedure.
 - If left untreated, hematomas can cause compression of the brain, resulting in a shift of intracranial structures, cerebral herniation, coma and death

(Marsh & Banasik, 2013)

- ▶ A study found improved outcomes with initiating emergency burr holes by trained providers before neurosurgical transfer.

(Nelson, 2010)



EBH IMPACT ON MANPOWER

- ▶ Different departments involved
- ▶ Must be trained by neurosurgeon
- ▶ May require extra staff to be hired to cover
- ▶ Same as garrison except no additional staffing can be brought in---must make do

Garrison

Downrange

EBH IMPACT ON RESOURCES

Garrison

Downrange

Time

Money

Productivity

Space

EBH IMPACT ON EDUCATION

- ▶ Neurosurgeons/ reps must be brought in
- ▶ Policy created for EBH
- ▶ Education materials provided to pt/family
- ▶ Competency accountability
- ▶ *Ensure staff are credentialed
- ▶ Coordinate in-services for departments affected
- ▶ Be creative getting resource information
- ▶ *Ensure staff are credentialed

Garrison

Downrange


EBH IMPACT ON STERILIZATION

- ▶ Need space to store sets, supplies, equipment
 - ▶ Par level set to reorder
 - ▶ Accountability
 - ▶ IFUs would need to be provided by reps
 - ▶ Download IFUs from OneSource
 - ▶ Austere environment
 - ▶ Big Bertha
 - Longer turnover time
 - Wet loads
- (Gerber, 2009)
- ▶ Training must be via videos, internet, phone
 - ▶ Reordering supplies
 - ▶ Limited storage
 - ▶ Download IFUs from OneSource

Garrison

Downrange

SUMMARY

- ▶ Resources will have to be used for EBH
 - Money to pay for supplies/equipment/training/manpower
 - Time will be needed for training
 - ▶ Manpower will need to be adjusted
 - Additional Staffing to meet mission
 - ▶ Education will be critical
 - Coordinating in-services with scheduler and staff
 - Follow on competency
 - Providers are credentialed
 - ▶ Sterilization has own needs
 - Need to follow IFUs
 - Proper storage area
- 

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QUESTIONS ?