

FAST1

Intraosseous infusion system

INDICATIONS

- Inadequate peripheral access
- Need for rapid access for medications, fluid or blood
- Failed attempts at peripheral or central venous access

TYPICAL PROTOCOL PRECAUTIONS

FAST1 NOT RECOMMENDED IF:

- Patient is of small stature:
 - Weight of less than 50 Kg.
 - Pathological small size
- Fractured manubrium/sternum - flail
- Significant tissue damage at site
- Severe osteoporosis
- Previous sternotomy and/or scar

IV FLOW CAPABILITIES

- 30 ml/min by gravity
- 125 ml/min utilizing pressure infusion
- 250 ml/min using syringe forced infusion

Administering Blood

- Blood is 4 X more viscous than NSS
- Result is 1/4 normal rate of flow when administering blood using gravity
- Infusion catheter internal pressure during gravity infusion = ~75 mm Hg
- Catheter can take up to 1,500 mm Hg
- Solution? **USE PRESSURE INFUSION**

A SHORT-TERM DEVICE

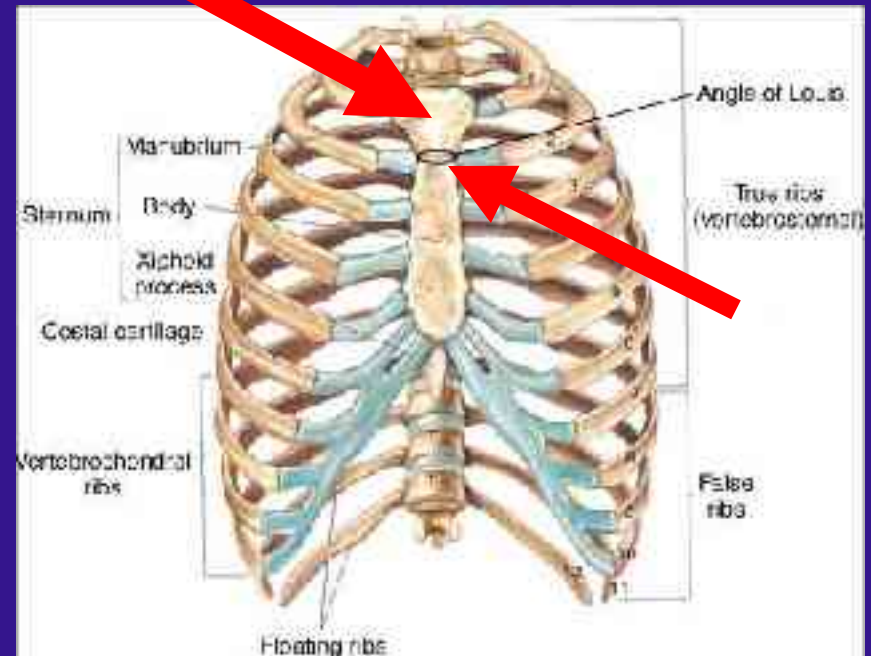
Not to be left in place for > 24H

Understanding Perpendicular

- FAST1 must be inserted perpendicular to the surface of the manubrium
- Device penetrates bone only 6 mm
- Perpendicular relationship to the surface of the manubrium critical for catheter to enter marrow space
- Rich vasculature drains manubrium...
FAST1 is equivalent to peripheral IV

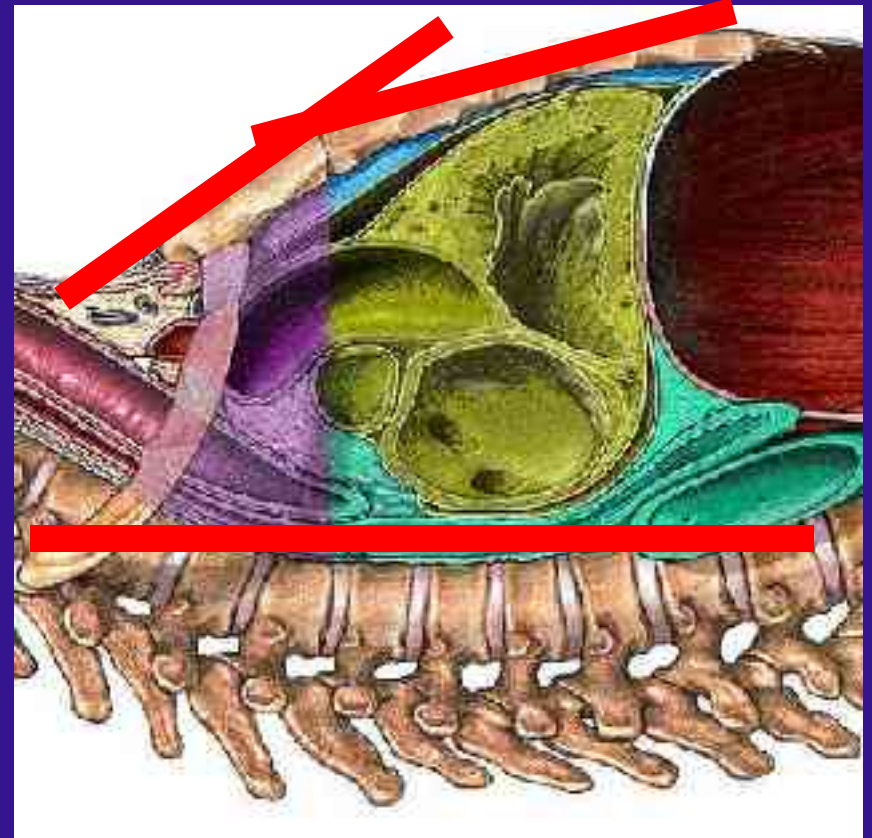
Understanding Perpendicular

- Manubrium is upper aspect of sternal structure
- Articulates with body of sternum at the Angle of Louis



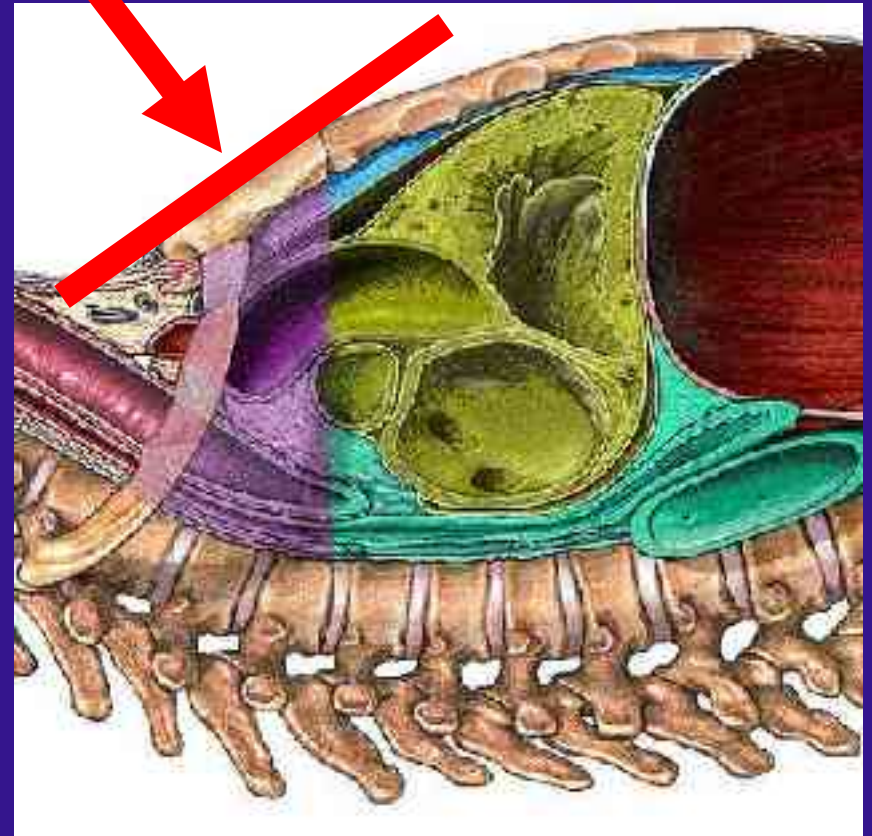
Understanding Perpendicular

- Note that there are three planes relative to the patient
 - Surface of ground
 - Surface of body of the sternum
 - Surface of the manubrium



Understanding Perpendicular

- Manubrium surface angle is your point of focus
- Perpendicular means at right angles to the surface of the manubrium



INSERTION

- Prepare site using aseptic technique
 - Betadine
 - Alcohol



INSERTION

- Finger at suprasternal notch
- Align finger with patch indentation
- Place patch



INSERTION

- Place introducer needle cluster in target area
- Assure firm grip
- Introducer device **must be perpendicular to the surface of the manubrium**



INSERTION

- Align introducer **perpendicular to manubrium surface**
- Insert using increasing pressure till device releases (~20-30 pounds). If more force than that needed, it's not perpendicular
- **Maintain perpendicular alignment to the manubrium throughout**



INSERTION

- Following device release, infusion tube separates from introducer
- Remove introducer by **pulling straight back**
- **Cap introducer using post-use cap supplied**



INSERTION

- Connect infusion tube to tube on the target patch
- Assure patency by use of syringe **administer 1 ml. blast of saline**
 - **Clears any tissue debris in the infusion catheter**



INSERTION

- Connect IV line to target patch tube
- Open IV and assure good flow



INSERTION

- Place dome



INSERTION

- Be certain that remover device is attached to patient



INSERTION

- We are in the process of a packaging modification that will attach the remover to the dome. That change will assure that the remover will always travel with the patient.

INSERTION

- Problems:
 - Infiltration
 - Usually due to insertion not perpendicular to manubrium
 - Inadequate flow or no flow
 - Infusion tube occluded
 - Use 1 ml saline flush recommended
 - Infusion catheter inserted at other than a perpendicular angle to the manubrium surface

REMOVAL

- Stabilize target patch with one hand
- Remove dome with the other



REMOVAL

- Terminate IV fluid flow
- Disconnect infusion tube



REMOVAL

- Hold infusion tube **perpendicular to manubrium**
 - See prior slides addressing the angles
- Maintain slight traction on infusion tube
- Insert remover while continuing to hold infusion tube in slight traction



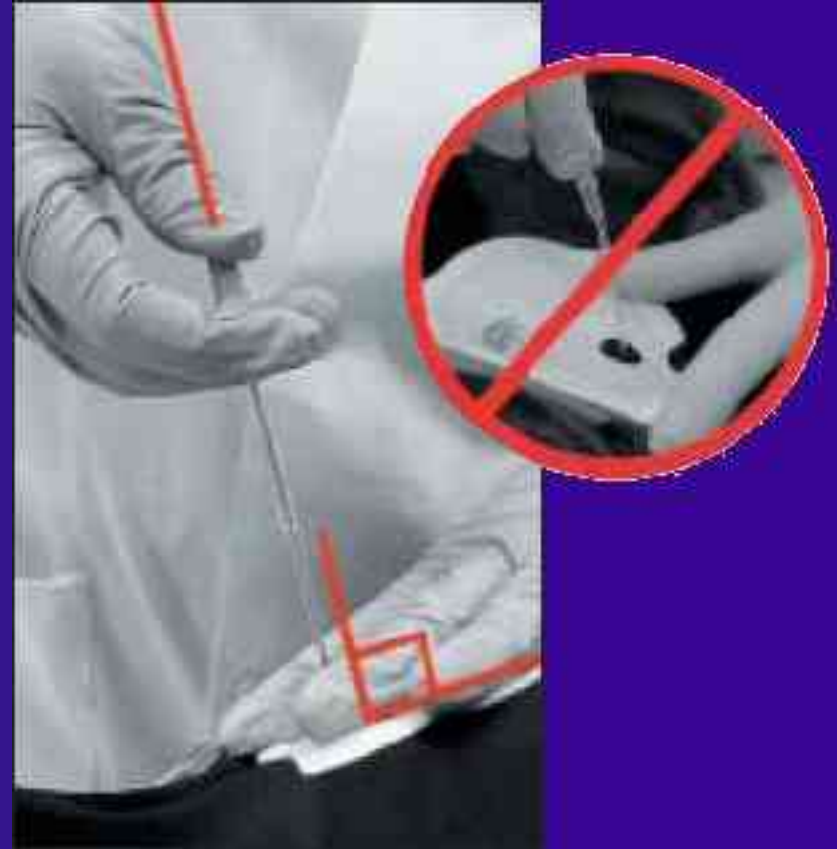
REMOVAL

- Advance remover
- **THIS IS A THREADED DEVICE**
- Gentle counterclockwise movement at first may help in seating remover
- Make sure you feel the threads seat
- Turn it clockwise **until remover no longer turns**
- This firmly engages remover into metal (proximal) end of the infusion tube



REMOVAL

- Remove infusion tube
- Use only "T" shaped knob and pull perpendicular to manubrium
- Hold target patch during removal
- **DO NOT** pull on the Luer fitting or the tube itself



REMOVAL

- Remove target patch



REMOVAL

- Dress infusion site using aseptic technique
- Dispose of remover and infusion tube using contaminated sharps protocol



REMOVAL

- Problems encountered during removal
 - Performed properly...should be none!
 - Be certain threads on remover engage threads at distal end of infusion catheter
 - Moving remover around with tip as axis while in the infusion catheter may shear off end of removal tool
- If removal fails or proximal metal ends separates:
 - Anesthetize with local - make small incision
 - Remove using clamp and close as appropriate
 - This is "serious injury" as defined by the FDA and is a reportable event

QUESTIONS?



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