Orthoframe and Skeletal Traction
UMMC – East Bank

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ORTHOFRAME AND SKELETAL TRACTION HOW-TO GUIDE

OBJECTIVES

• List different types of skeletal traction and suspension available
• Outline equipment and supplies needed for balanced suspension skeletal traction with use of Steinman pin
• Review how to obtain and the set-up of the equipment and supplies
• Identify nursing expectations and assessment guidelines
“Traction is the application of force to the skin, muscles, and bones to aid in reduction of fractures, hold the reduced bones in alignment for healing, relieve muscle spasms and pain, and exert sufficient pull on muscles and bones to relieve pressure on peripheral spinal nerves” (Thompson, 2002).

• There are various types of traction and suspension that are available for application at UMMC and UMCH.

• Balanced suspension skeletal traction with use of Steinman pin will be reviewed in detail.
SKELETAL TRACTION AND SUSPENSION

Balanced suspension skeletal traction with use of Steinman pin
- Indication: Femur fracture
- Purpose: Realign fracture and decrease muscle spasms
- Where: UMMC – East & West Banks and UMCH in the ER or on the floor
- Who: Orthopedic Surgeon sets up with assistance from nursing staff
  (Thompson, 2002)

Be aware that there are different names for this type of skeletal traction, including:
- Orthoframe
- Traction Set
- Trapeze
Pelvic binder: sheet wrap or commercial device
• Indication: Pelvic fracture
• Purpose: splint, reduce pain, reduce hemorrhage
• Where: bed sheets can be used and are stored everywhere; commercial devices are not stocked at UMMC or UMCH
• Who: Paramedics, physicians, nurses
  (Brohi, 2008)

Hare traction
• Indication: Suspected femur fracture
• Purpose: Realign fracture, decrease muscle spasms, and restore blood flow
• Where: applied in field by EMS – may remain in place until surgical repair
• Who: Paramedics and nursing staff
  (Haretractionsplint.com, 2002)
SKELETAL TRACTION AND SUSPENSION

Buck’s traction or Skin traction
• Indication: fractures/dislocations where pins can’t be used (boot or traction tapes depending on fracture site)
• Purpose: Decrease muscle spasms and realign fracture
• Where: Infrequently used but available at UMMC and UMCH
• Who: Orthopedic Surgeon sets up with assistance from nursing staff (Thompson, 2002)

Gardner Wells or Halo
• Indication: cervical traction
• Purpose: Realign fracture and stabilize cervical spine
• Where: UMMC–East Bank and UMCH
• Who: Neurosurgeon applies (Spine Injury Network, 2014)
Your patient broke their femur and the Orthopedic Surgeon wants to place balanced suspension skeletal traction with use of Steinman pin in your department.

What do I need to do?

What equipment is needed?

How do I get the equipment?

What supplies are needed?
ORTHOFRAME AND SKELETAL TRACTION

Step #1: An order for the orthoframe needs to be entered in EPIC

Step #2: Call Equipment Dispatch (x33400) and communicate order request.

Please be aware of the different names for order (Orthoframe/Traction Set/Trapeze) which may cause confusion

Step #3: Page Environmental Services (#9060) for an inpatient hospital bed

Step #4: Gather supplies and equipment

Step #5: Ensure informed consent is obtained

Step #6: Assist with the assembly of the orthoframe

Step #7: As directed by the Orthopedic Surgeon assist with insertion of pin, application of the skeletal traction, and procedural sedation

Step #8: Monitor injured extremity and provide ongoing assessments
Inpatient hospital bed
Obtain from Environmental Services pager # 9060
Orthoframe/Traction Set/Trapeze
Obtain from Equipment Dispatch  x33400
EQUIPMENT

From bottom of ortho cart in East Bank ER outside of room 3
* If an electric drill is requested, the Orthopedic Surgeon will have to obtain one from the OR
EQUIPMENT

In ortho supply stock room and room # 10 in East Bank ER
SUPPLIES

- 20ml of 1% lidocaine (usually without epinephrine)
- #11 scalpel
- Two 10 ml syringes with 22G needles
- Two 18G needles
- Kelly clamp
- Chloraprep/iodine for prep
- Kerlix
Orthoframe/Traction set/Trapeze equipment is color coded

- 31” Offset Double Clamp Bar: Purple
- Trapeze: Black, blue, orange
- 36” Plain Bar (no Clamps): Yellow
- Cross Clamp: Red, black, grey
- 11” clamp bar
- Pulleys
- Telescoping Adjustable Bar: Brown
- 18” Single Clamp Bar: Black
- 48” Swivel Clamp Bar: Red
- 13” IV post Clamps: Blue
- 18” IV post Clamps: Blue, black
- Traction Hooks: Red, black, blue

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INSTRUCTIONS ON HOW TO ASSEMBLE ORTHOFRAME

Step#1: Depending on the size of the bed, use the blue or blue-black poles (13” or 18” IV post clamps) and insert into 4 corners of the bed frame.

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INSTRUCTIONS ON HOW TO ASSEMBLE ORTHOFRAME

Step#2: Attach yellow bar (36” plain bar) between the IV post clamps at the HOB & FOB
INSTRUCTIONS ON HOW TO ASSEMBLE

Step#3: Attach purple pole (31” Offset double clamp bar) between the IV post clamps at the HOB & FOB
INSTRUCTIONS ON HOW TO ASSEMBLE

Step#4: Attach red pole (48” swivel clamp bar) to yellow bar (36” plain bar) at the FOB utilizing the cross clamp
INSTRUCTIONS ON HOW TO ASSEMBLE ORTHOFRAME

Step#5: Attach brown bar (telescoping adjustable bar) to purple and red poles
INSTRUCTIONS ON HOW TO ASSEMBLE ORTHOFRAME

Step#6: Attach trapeze to brown bar
SKELETAL TRACTION

As directed by the Orthopedic Surgeon assist with application of the skeletal traction and procedural sedation
External fixator wire or Steinman Pin Holder. Rope is tied to wire loop using a Bowline or Traction Knot. Rope is threaded through pulley below and a weight attached using a Bowline Knot.

Weight must freely hang at end of bed so traction is directed at reducing the fracture.
ONGOING ASSESSMENTS

• Monitor injured extremity: neurovascular checks q hour x24 hours, then every 2 hours, and then every 4 hours.
• Assess pain and provide medications as ordered.
• Pin and site care as ordered.
• Patient may experience disturbed body image with associated anxiety – may need comfort, assurance, and further explanation.
• Anticipate surgical intervention and communicate plan of care with the patient and the patient’s family (Thompson, 2002)
ONGOING ASSESSMENTS

• With the transfer and repositioning of the patient the traction weights can temporarily be disconnected
  – Upon reconnecting the weight, ensure the traction system is as it was before
  – Reassess affected extremity
  – Reassess the patient’s pain