Bandaging & Plaster Techniques

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Contusion

Abrasion
DRESSINGS

PURPOSE OF DRESSINGS
- Control bleeding
- Prevent contamination and infection
- Absorb blood and fluid drainage
- Protect the wound from further injury
BANDAGES

PURPOSE OF BANDAGES
- Hold a dressing in place
- Apply direct pressure over a dressing
- Prevent or reduce swelling
- Provide stability for an extremity (e.g. broken bones)
BANDAGES

TYPES OF BANDAGES

ROLLER BANDAGES
Differ in sizes, material (cotton, gauze), Elasticity (non/elastic roller bandage)

TRIANGULAR BANDAGES
Consist of base, point and ends

ADHESIVE TAPE
Often use to secure bandages in place, different types (paper, dermatologic etc.)

ADHESIVE STRIPS
Used for small cuts, combination of a dressing and a bandage
BANDAGES

COMMONLY USED MATERIAL
-gauze
-cotton
-splints
-casts
Dressing material
DRESSING/BANDAGE APPLICATION

1) Communication with a patient
2) Getting things ready
3) Washing hands
4) Comfortable position (patient/nurse)
5) GLOVES!
6) Keep sterility if necessary/do not touch the wound
7) Wound cleaning
8) Dressing application
9) Bandaging
Plaster Technique
HISTORY

• Hippocrates 350 BC – Bandages stiffened by wax and resins
• Cheselden 1756 – Bandages soaked in egg white
• 18th century Turkey – Limb enclosed in a plaster case and remaining space filled by pouring plaster cream
HISTORY
• Hubenthal 1816 – Mixed P.O.P. & minced blotting paper
• Antonius Mathysen 1852 – P.O.P. bandages for first time
• 1931 – Commercial P.O.P. bandages (binder to prevent loss of P.O.P.)
USES OF PLASTER

• Support fractured bones
• Stabilise joints
  • Ligamentous injuries
  • After repair of nerves / tendons
• Correction of deformity and prevention
• Rest of infected tissue
• Construction of Orthotic or prosthetics.
MATERIALS USED

• Plaster of Paris (POP)
• Polymers (Synthetic casts)
  • Water activated
  • Non water activated
• Low temperature thermoplastics.
IDEAL CASTING MATERIAL

- Suitable for direct application to patient
- Easy to mould
- Non toxic
- Unaffected by fluids
- Quick setting
- Easy to apply and remove
- Can transmit air, odour, pus
- Be strong but light in weight
- Non inflammable
CHOICE OF MATERIAL

P.O.P.- *Gold standard especially in initial m/m of #*

- Familiar
- Cheap
- Less demanding
- Allows blood, pus & odour to pass
- Very accurate casting can be done
Fibre glass cast

- SHOULD NEVER BE HANDLED WITHOUT GLOVES
- Ideal for weight bearing casts
- Can be used as protective layer over P.O.P. casts
- Radiographs of high resolution can be taken
- Can be difficult to cut
PLASTER OF PARIS

CaSO\(_4\).2H\(_2\)O + Heat \rightleftharpoons CaSO\(_4\).1/2H\(_2\)O + 11/2 H\(_2\)O

Gypsum
(Calcium sulfate dihydrate)

Plaster of Paris
(Calcium sulfate hemihydrate)
SETTING OF P.O.P.

• **Initial set** – Crystals become longer and start to interlock
  • End of “Working time”

• **Final set** – Crystals continue to grow and get firmly locked
  • Heat is generated

• **Hard set** – Crystals completely locked
  • Excess water is lost
  • Usually upto 48 hrs
FORE ARM
CAST
Casting Technique

- Slab
- Cast
- Spica
Plaster Material
Slab Application
Slab Application

ABOVE ELBOW SLAB APPLICATION
Cast Application
COMPLICATIONS OF CASTS

- Plaster burn
- Pressure sores
- Nerve palsy
- Compartment syndrome
- Disuse osteoporosis
- Joint stiffness
INSTRUCTIONS AFTER CAST

- Limb elevation
- Active movements of all unsplinted joints
- Watch for
  - Excess pain / stretch pain
  - Paraesthesia / numbness in fingers
  - Nail circulation / Colour change
REMOVAL OF PLASTER

- Plaster shears
- Scissors
- Benders
- Plaster spreader
- Electric plaster cutter
- Material for washing the limb
- Supportive bandages
Cast Removal
THANK YOU