



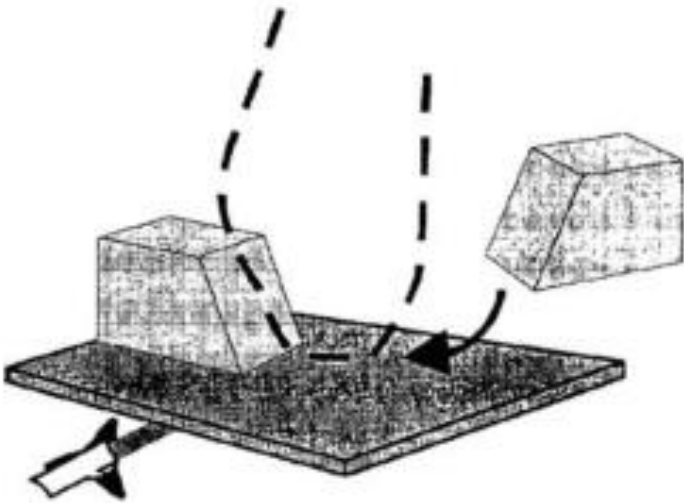
Hip Disarticulation Prosthetic

Casting Procedure



Introduction

- Three methods for HD casting:
 - using 2 wedge-blocks
 - Casting by suspension
 - Bicycle seat



HD MSPO 3rd Yr 2018





Casting Purpose

- Overall aims of casting to produce the socket for
 - supports the amputee's weight
 - securely suspends the prosthesis
 - provide stability for the amputee during all phases of gait
 - Provides no pain or discomfort



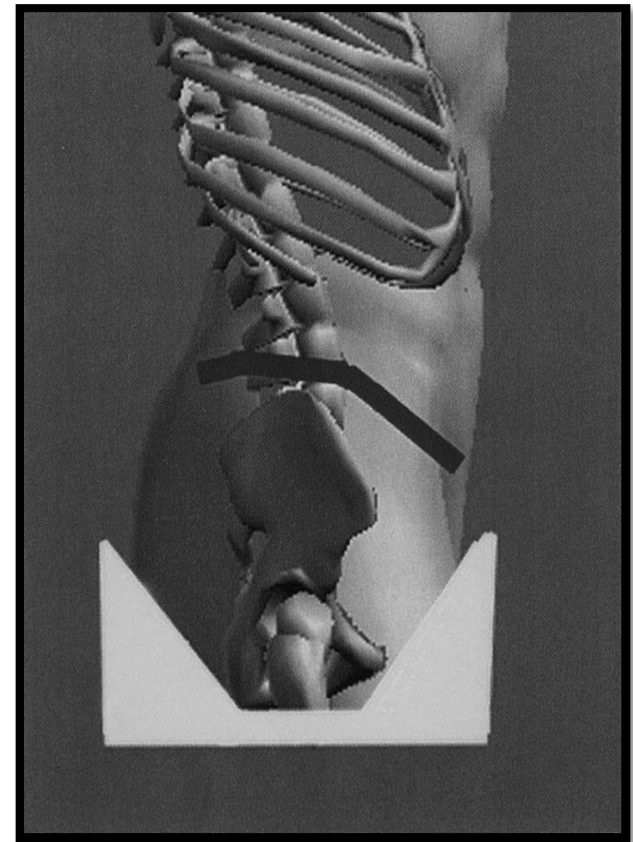
Equipment and Materials

- Casting stand or seat platform
 - Covered with a layer of soft foam (at least 25 mm thick)
 - This will help to capture the weight bearing surface



Equipment and Materials

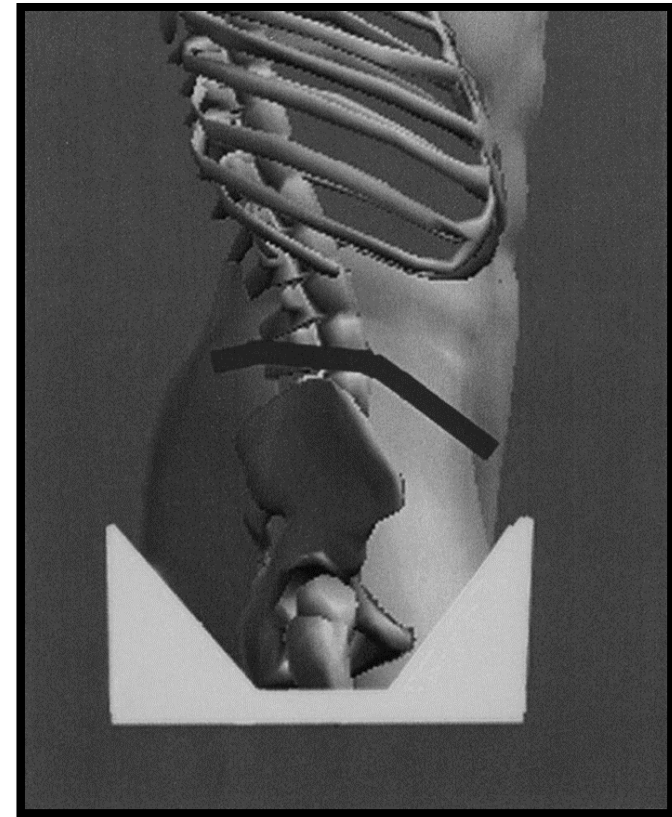
- Wedges or forming blocks
 - can be made of wood – 10 cm wide and 10 cm high with 45° angle
 - *The blocks will form “V” shape of the cast*





Equipment and Materials

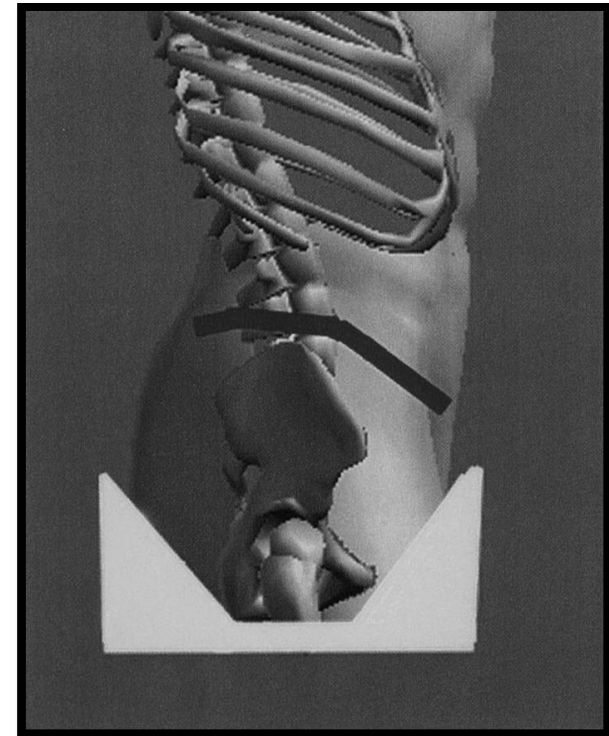
- Posterior block is for:
 - loading the gluteus in order to provide some relief for the ischium
 - providing a counter force needed to maintain contact with anterior lock.
- Anterior block is for:
 - forming the place for hip attachment plate with 5° external rotation





Equipment and materials

- Forming blocks work well for thinner clients with good muscle tone. For those who have soft abdominal tissue, the blocks may tend to deform the mold by expanding the ML





Equipment and materials

- Materials

- Casting socks
- Tape measure
- Calipers
- Indelible pencil
- Measurement chart
- Plastic tube or lead strip
- Cast cutter
- 15 cm plaster bandages

- Plaster slabs

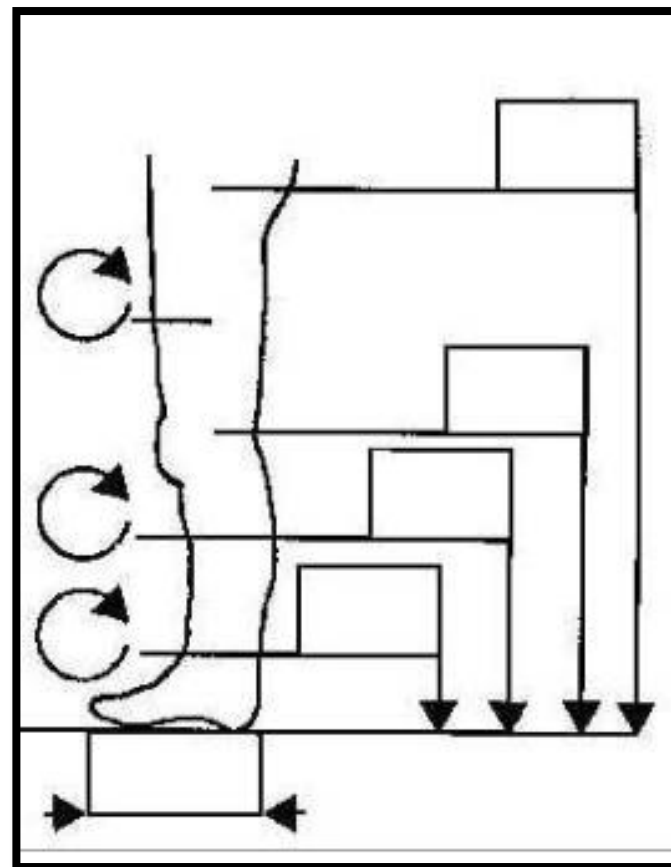
- Two plaster slabs

- The first 4 Or 5 layer-slab starts from anterior part (ASIS) to posterior part (PSIS)
- The layer slab will form a rope that reaches around the waist above the iliac crest to create the suspension channel.



Measurement

- The height of the prosthesis is measured from the top of casting seat.
- Circumference and
 - Waist above the iliac crest (snugly)
 - At the mid point between the iliac crest and stump end

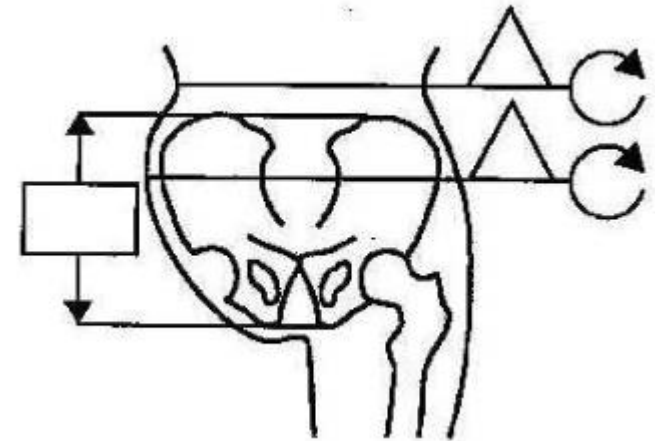




Measurement

- Diameters

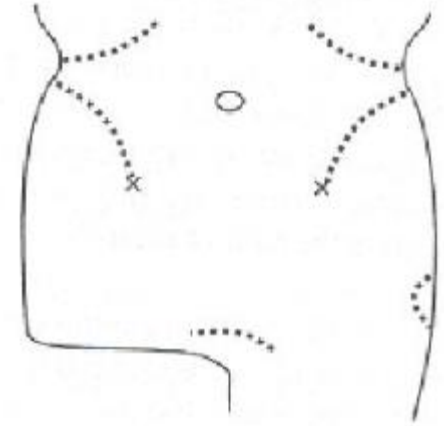
- Waist above iliac crests (loose and snugly)
- Distance between IT to the top of iliac crest.
- Widest part of Iliac crests (ML)
- Iliac crest (AP)





Marking

- Iliac crest
- Mid point between iliac crest and stump end
- Superior surface of the symphysis pubis
- ASIS
- PSIS
- Umbilicus

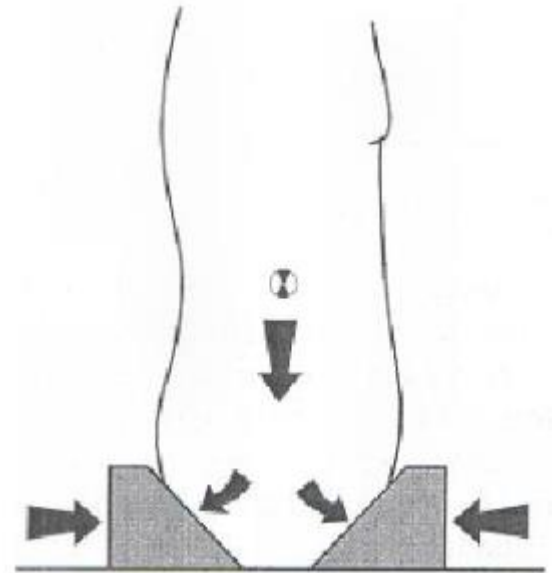


- Ischial Tuberosity
- Distal margins of the ribs
- Mid line of the trunk
- Any sensitive areas or scars
- Femur bone if it is the MHD.



Casting

- Test the position of the forming blocks.
- The lead strip should be placed anteriorly
- Apply the first layer. The medial edge near the midline of the body and parallel to the line of progression
- Quick wrap around the stump up to the margin of the last rib





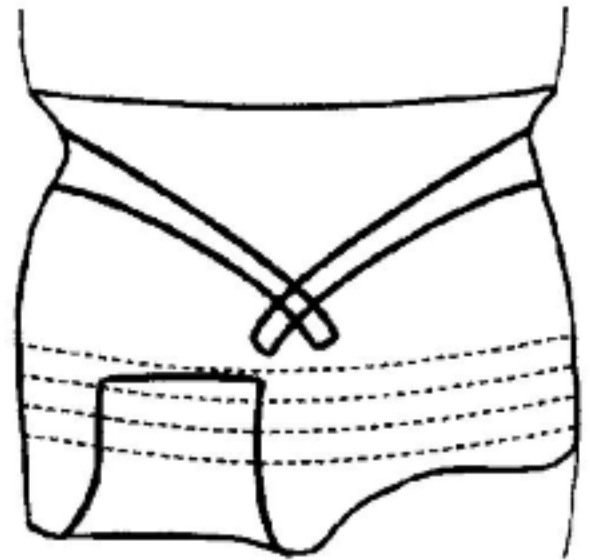
Casting

- After wrapping:
 - ask the patient to temporarily lift off the seat platform and quickly place the blocks that was found comfortable during testing
 - Ask the patient to bear full weight
 - Make sure that patient comfortable and pelvis is neutral



Casting

- Capture the suspension channel with the 2nd slap
- When the cast is set, mark the
 - anterior plumb-line from the umbilicus
 - Lateral plumb-line from the mid-line of the cast





Casting

7. Remove the cast by cutting along the protective tube or strip
 - Check shape
 - Check MLs
 - Check marks
 - Overall strength
8. Assist the patient with cleaning and dressing



Suspension casting

- It is used to contain the soft tissue and achieve a better volumetric loading within the interface
 - Capturing the suspension channel is the same as that in forming block casting
 - Ischium is cupped in the palm of hand





Suspension casting

- Disadvantages:
 - Anterior shape is not clearly defined
- Some P&Os use both casting methods by containing the tissue in suspension and then using forming blocks to place the hip joint





Conclusion

- There are three methods for HD casting
- Overall aims of casting
- Equipment and materials use for casting
- Casting procedure



ANY QUESTIONS?

THANK YOU