Chapter 6: Cast Rectification

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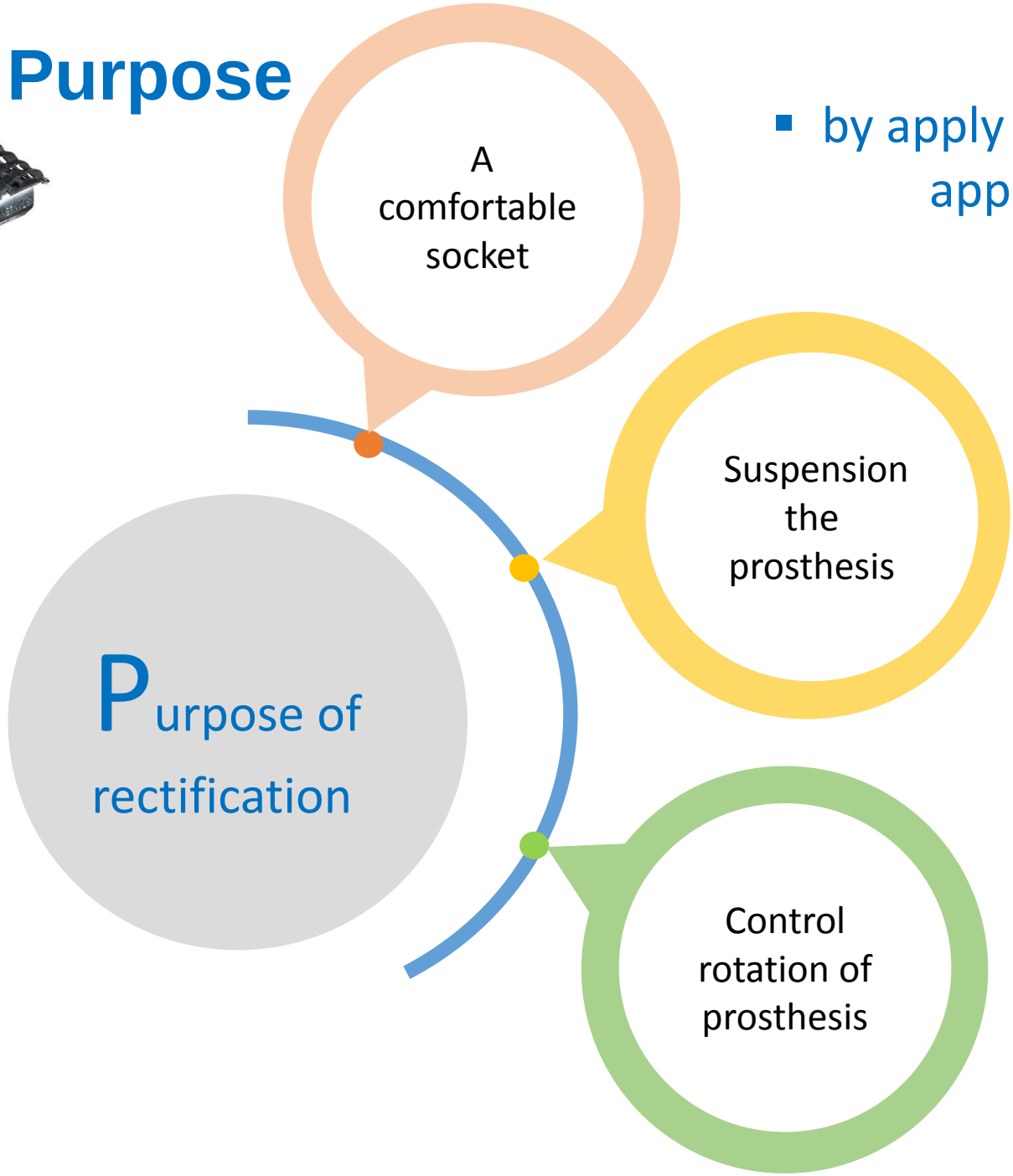
I. Purpose



- by apply pressure on the tolerant area and not apply pressure on the sensitive area.
- follow the natural shape of the AD stump at the proximal of the malleoli
- by creating a triangular shape at the proximal area

II. Rectification Procedure

Assess the cast:

Are the marking in correct place?

Is the heel pad in correct position?

Are the indentation in the correct place?

Are the measurement taken from the patient close to the cast measurement?

Re mark all the land marks

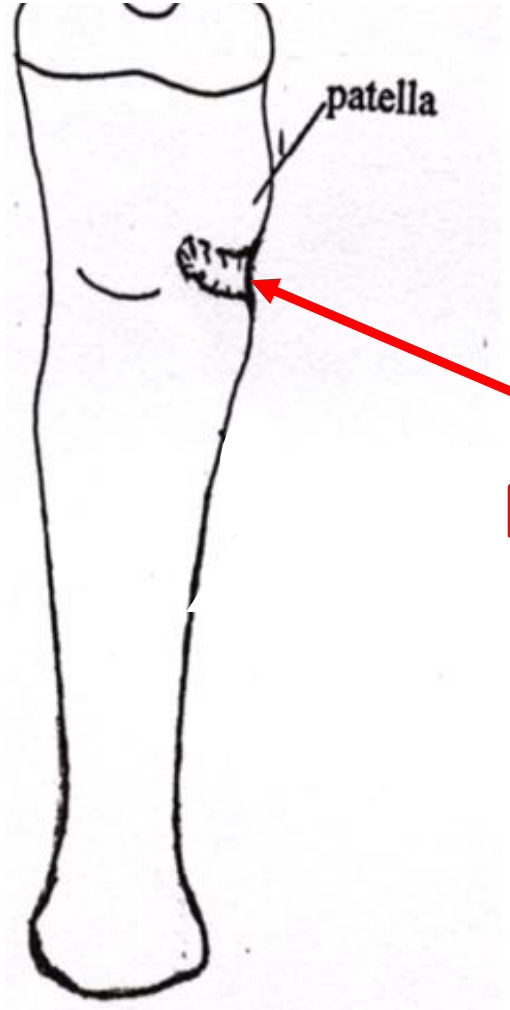
Clean up the irregularities

III. Plaster Removal

MTP rectification

Not modify as deep as TT model but it is not as deep as TT model for the stump that has end bearing and modify deeply as TT model in case for non end bearing stump

The contour the cast in the area distal to patella ,so that the patella will be cradled by the socket this will help to stabilize the prosthesis by locking onto the patella.



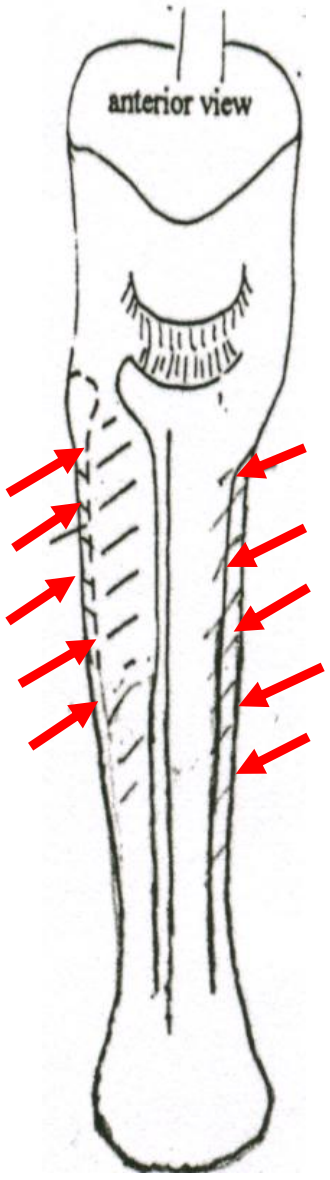
MTP

III. Plaster Removal

Tibial Flares

- Remove plaster along the medial tibial flare & tibialisanterior *(for distribute weight bearing and control rotation).*

A triangular shape in the cross section between the medial tibial flare and tibialisanterior will help to control rotation by locking the prosthesis onto the tibia.

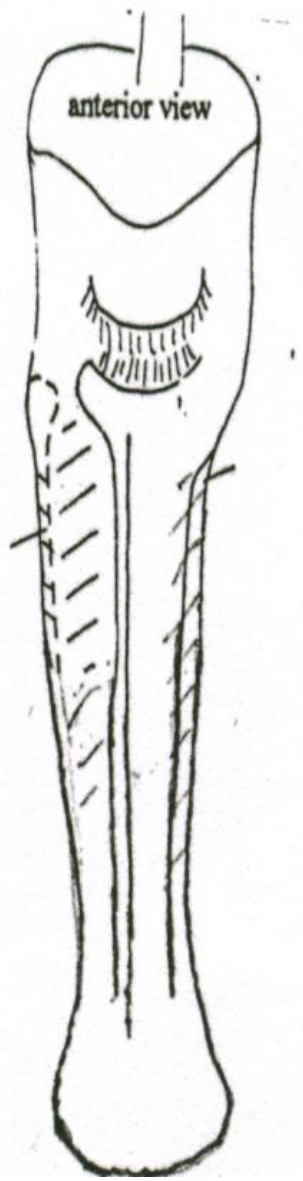


III. Plaster Removal

Tibial Flares

A triangular shape in the cross section between the medial tibial flare and tibialisanterior will help to control rotation by locking the prosthesis onto the tibia.

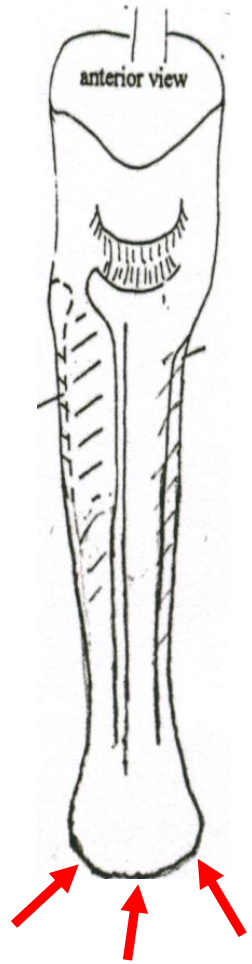
Be careful not to over rectify. Often the AD stump has thin stump due to muscle of the ankle movement atrophy.



III. Plaster Removal

Distal end

- ✓the main load bearing area
- ✓the end pad is loads, so it become flatter and wider.



Do not reduce to the measurement

Note: As the cast has been taken correct amount of loading tissue already, therefore it has been deformed and diameter is larger then measurement then it becomes flatten and widen!

III. Plaster Removal

Popliteal fossa

- ✓ **Less** reduction on the popliteal fossa for applying minimal pressure as it is not a main weight bearing.
- ✓ This small pressure provide stability to the socket.
- ✓ If you have applied pressure correctly during casting, so **smooth** is enough!

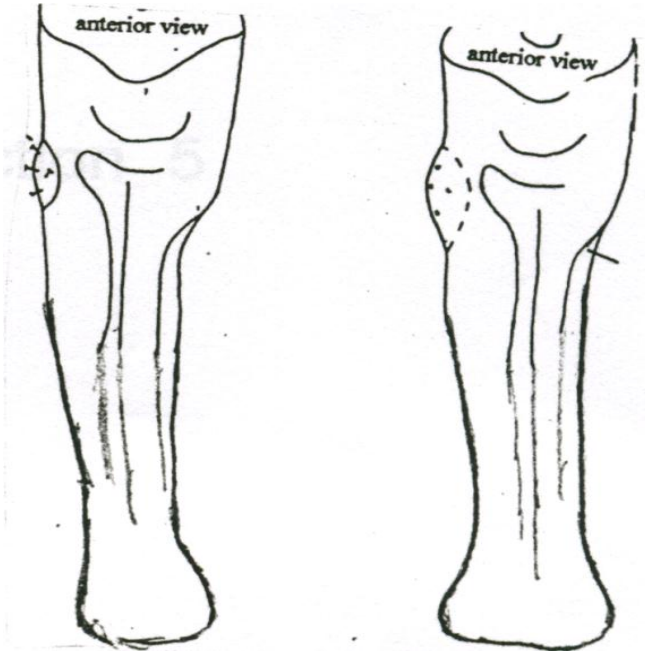
III. Plaster Removal

Posterior aspect of the tibia

- ✓ Slightly flattened on the posterior aspect of the tibia, this will adding the triangular shape that can help to control the prosthesis on the stump for all the phase of gait.
- ✓ In case that distal end bearing is not possible. the popliteal area should modified as per a standard PTB design.

IV. Plaster addition

The head of fibular

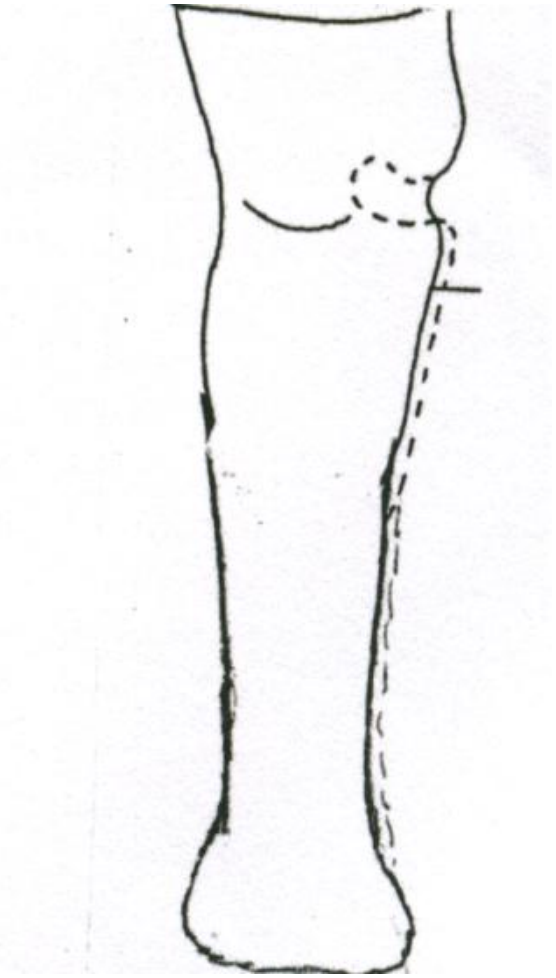


- Building up is the same way as a TT cast.

- Add 3mm on the apex, 1cm distal and 5 mm posterior

IV. Plaster addition

Tibial crest and Tibial tuberosity



✓Add plaster 2-3 along the tibial crest

✓Build up should be greatest on the tibial tuberosity and reduce gradually along the shaft of tibial

(*add more plaster on the proximal then less and less to distal of the stump*).

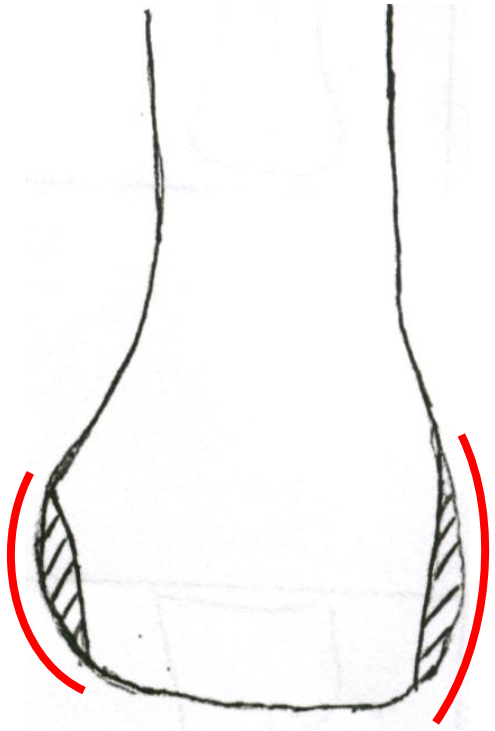
IV. Plaster addition

The malleoli

✓Add plaster 2-3mm on both malleoli

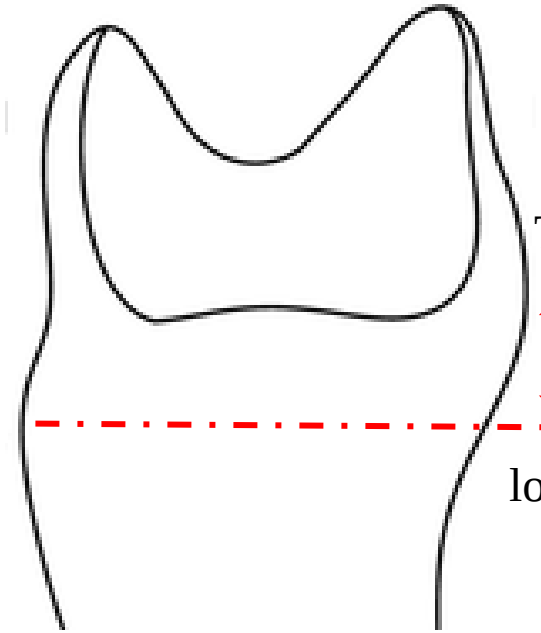
✓The diameter of this area is usually larger than the measurement because when the distal end is loaded, there will flatten and widen.

Do not reduce to the measures !!



IV. Plaster addition

Posterior wall



The posterior wall should be

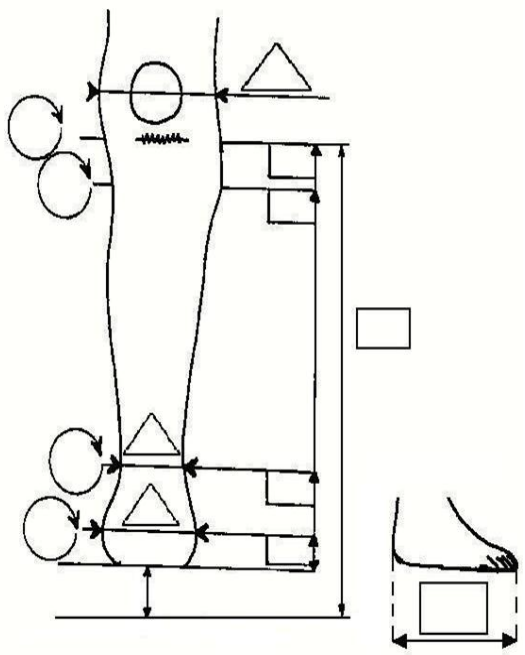
2-3 cm

lower than train tibial prosthesis.

If the posterior wall too high it will push the socket distal when the knee is flex, but the stump has bulbous at the distal so it cause pressure on the prominence of the malleoli

Any sensitive scar areas have to add plaster too

Re-check all the measurement of the cast



- ✓Compare your cast measurement with the measurement chart
- ✓Making it smooth and ready for the manufacture.

Summary

Why do you need to do cast rectification?

Which area of the AD cast do you need Plaster Removal?

Which area of the AD cast do you need **Plaster addition**

What is the problem if the posterior is too hight?

What are the triangular shape in the cross section between the medial tibial flare and tibialisanterior will help ?