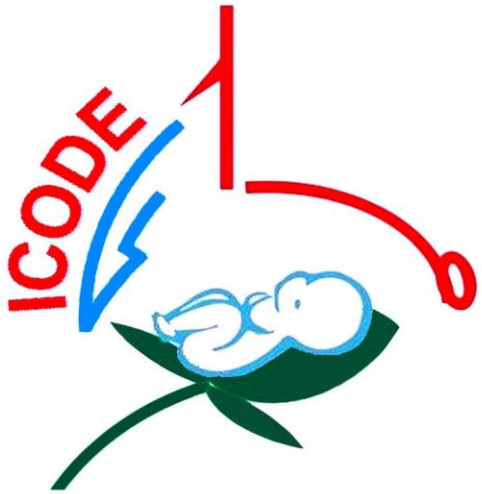
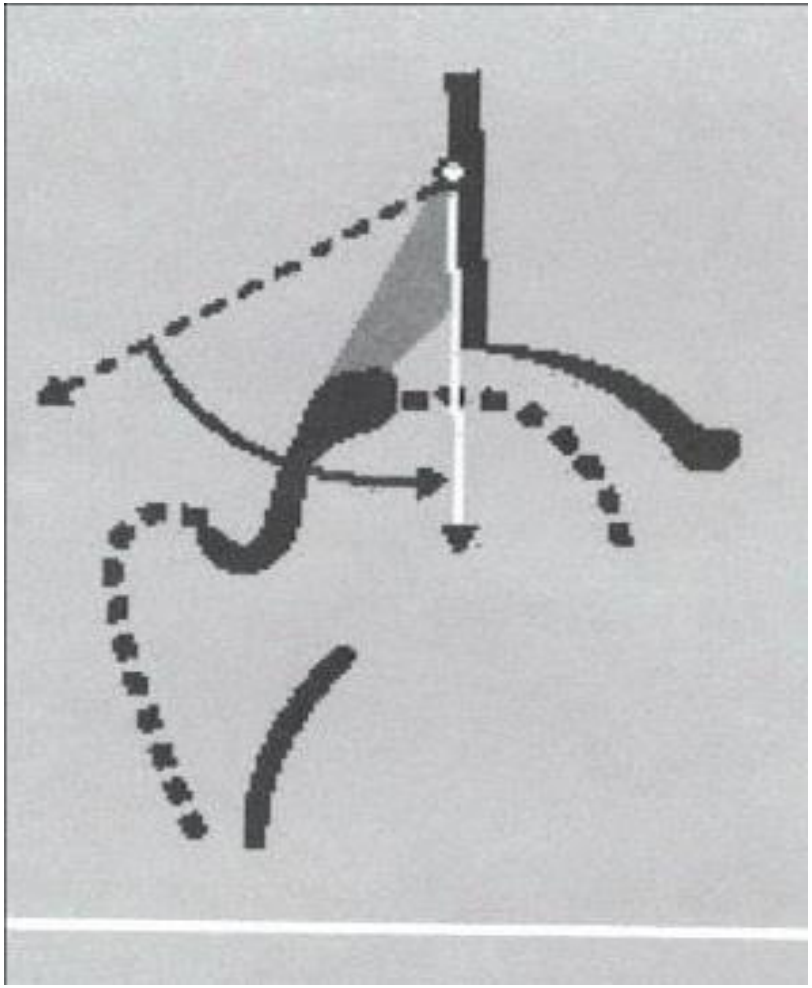
# Measurement and Classification

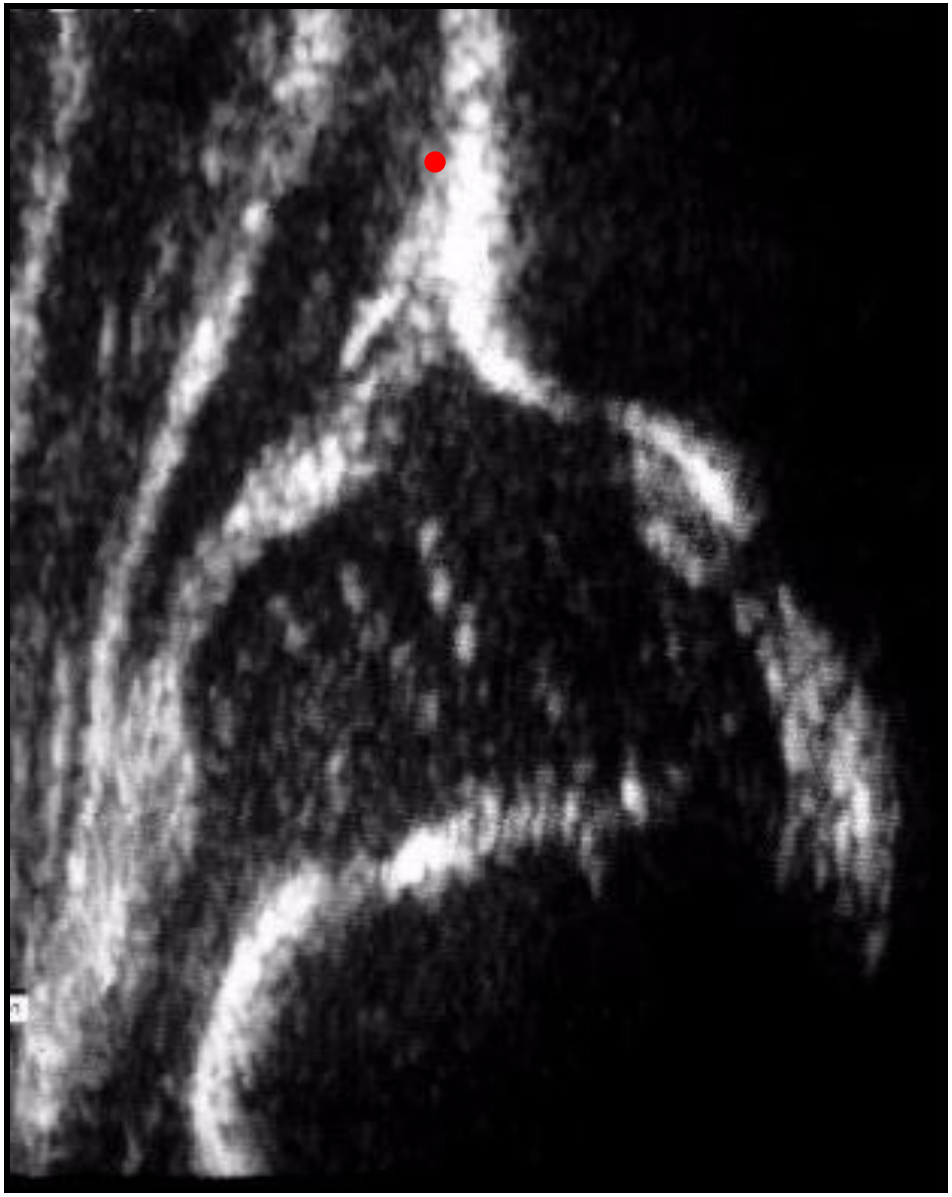


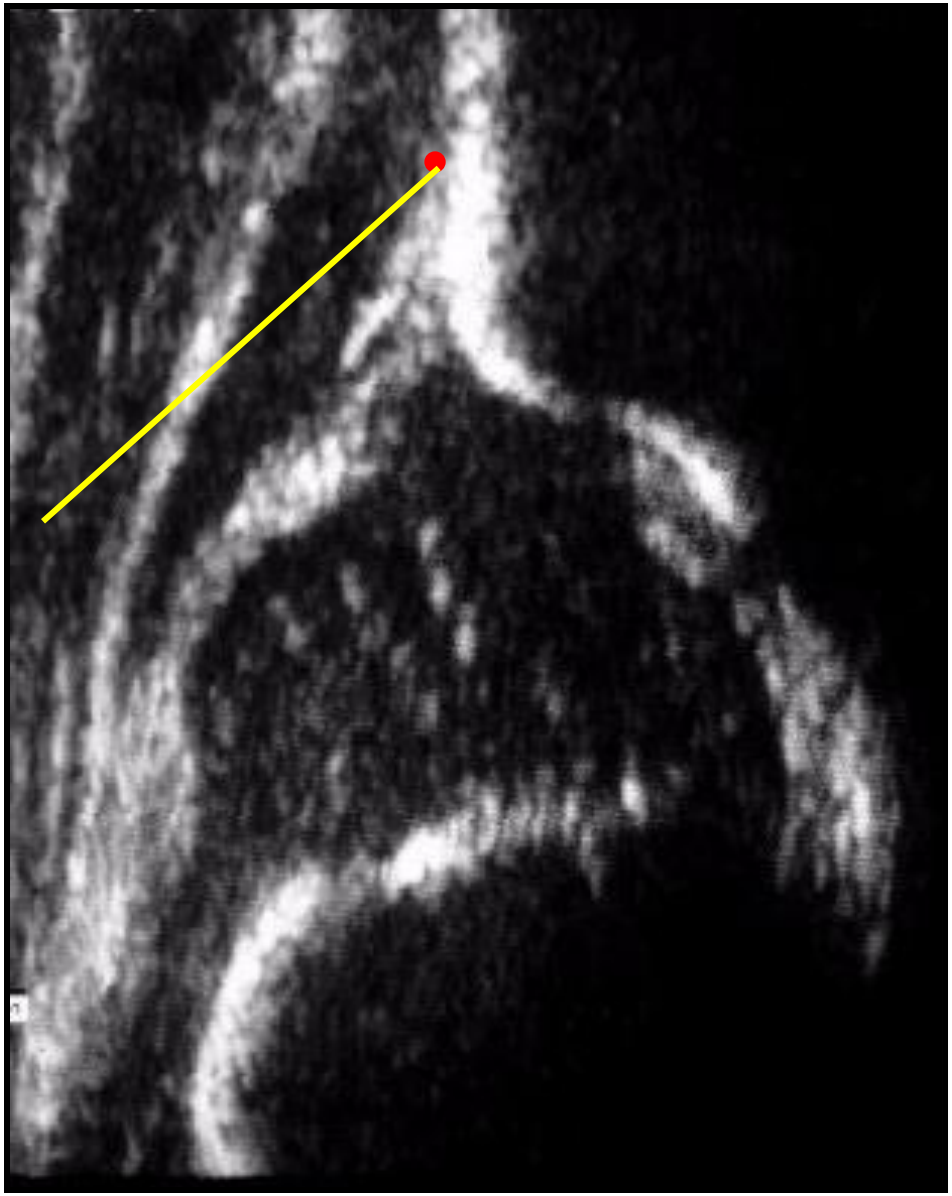
# Measurement can only be carried out in the standard plane
# type 3 and 4 – no measurements

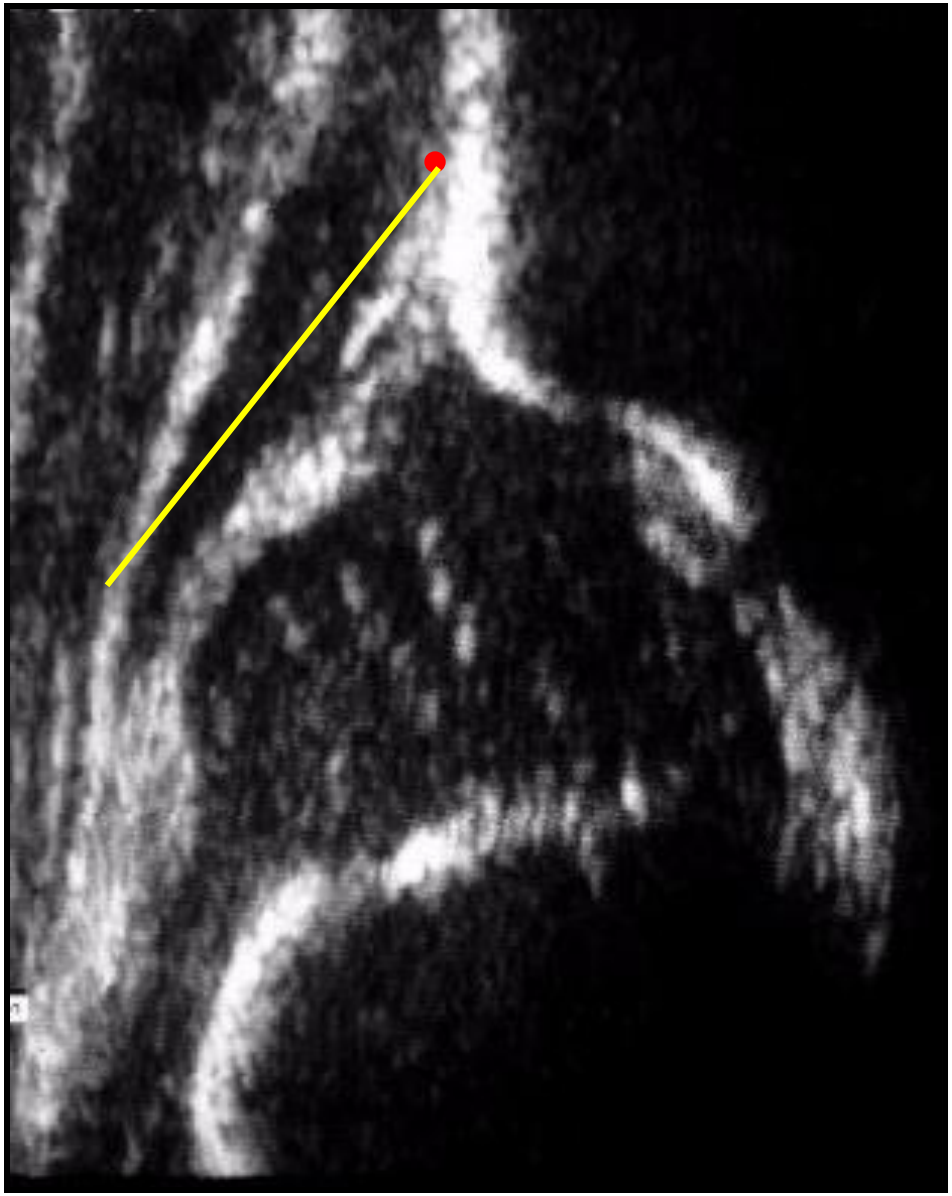
# BASE LINE



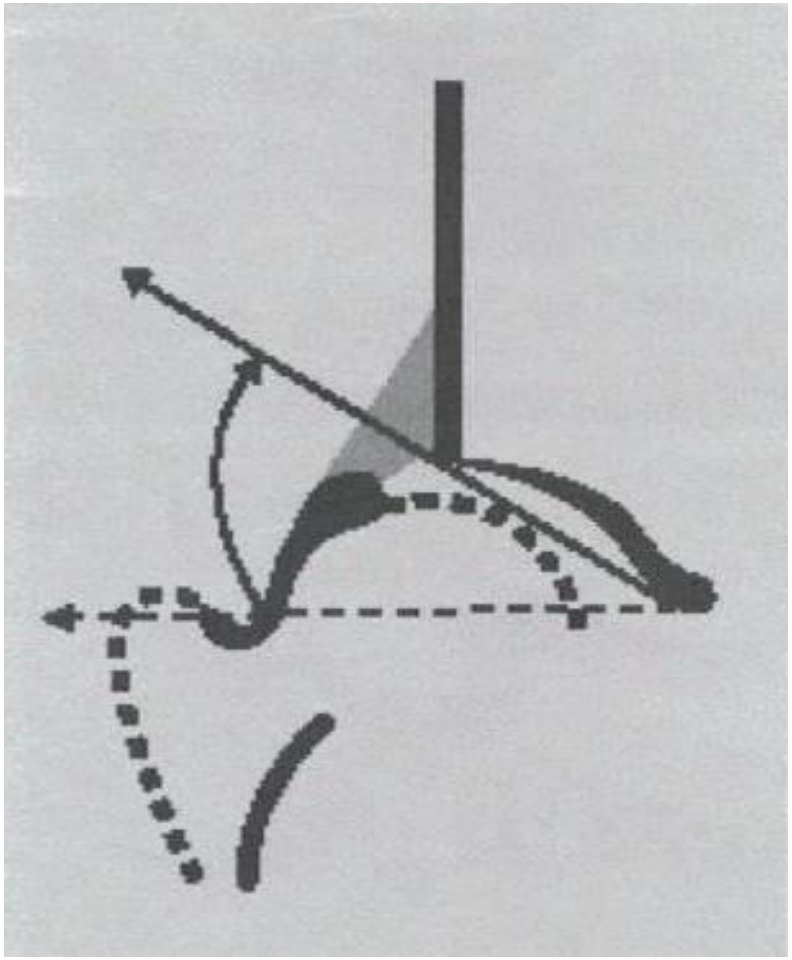
- Identify point where proximal perichondrium meets ilium
- Pivot from this point till Tangential to the ilium.



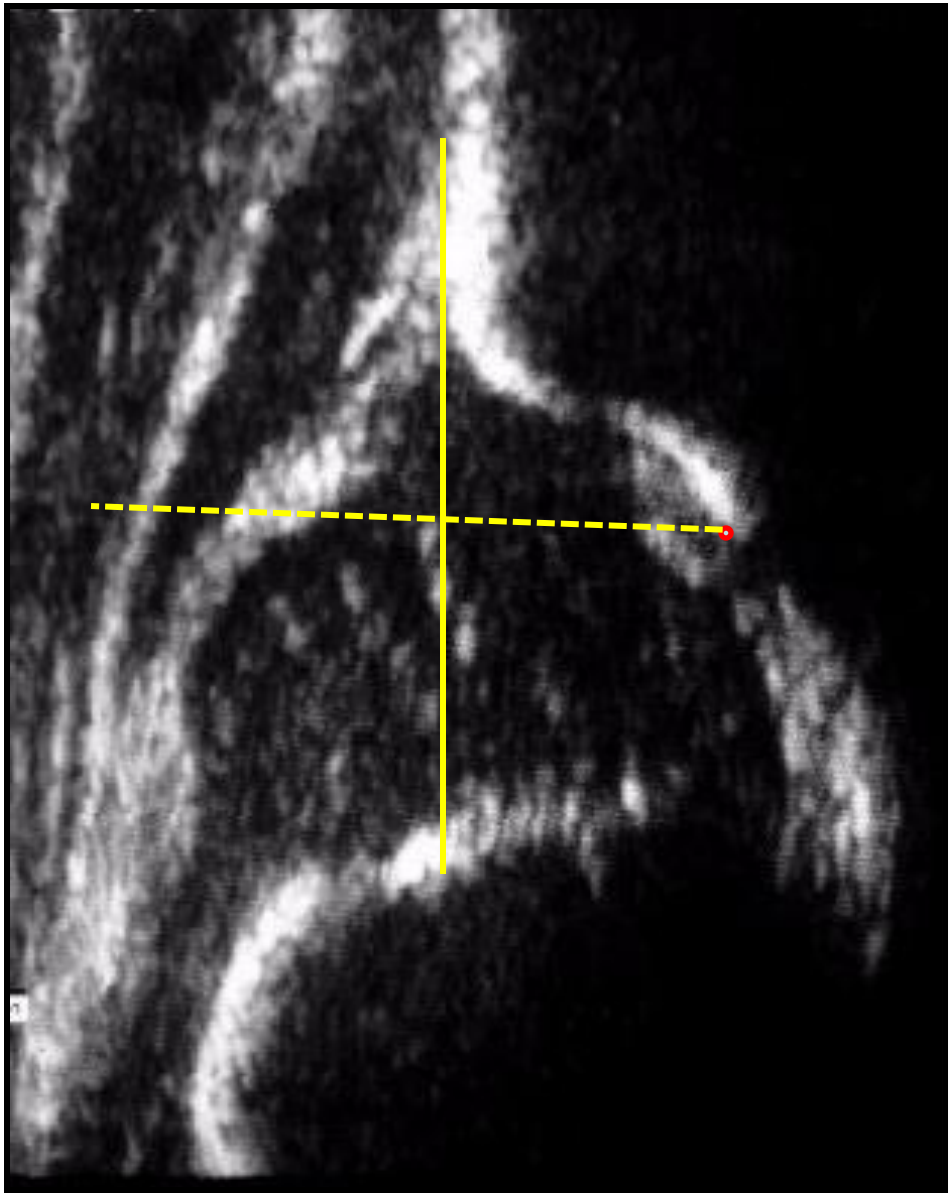


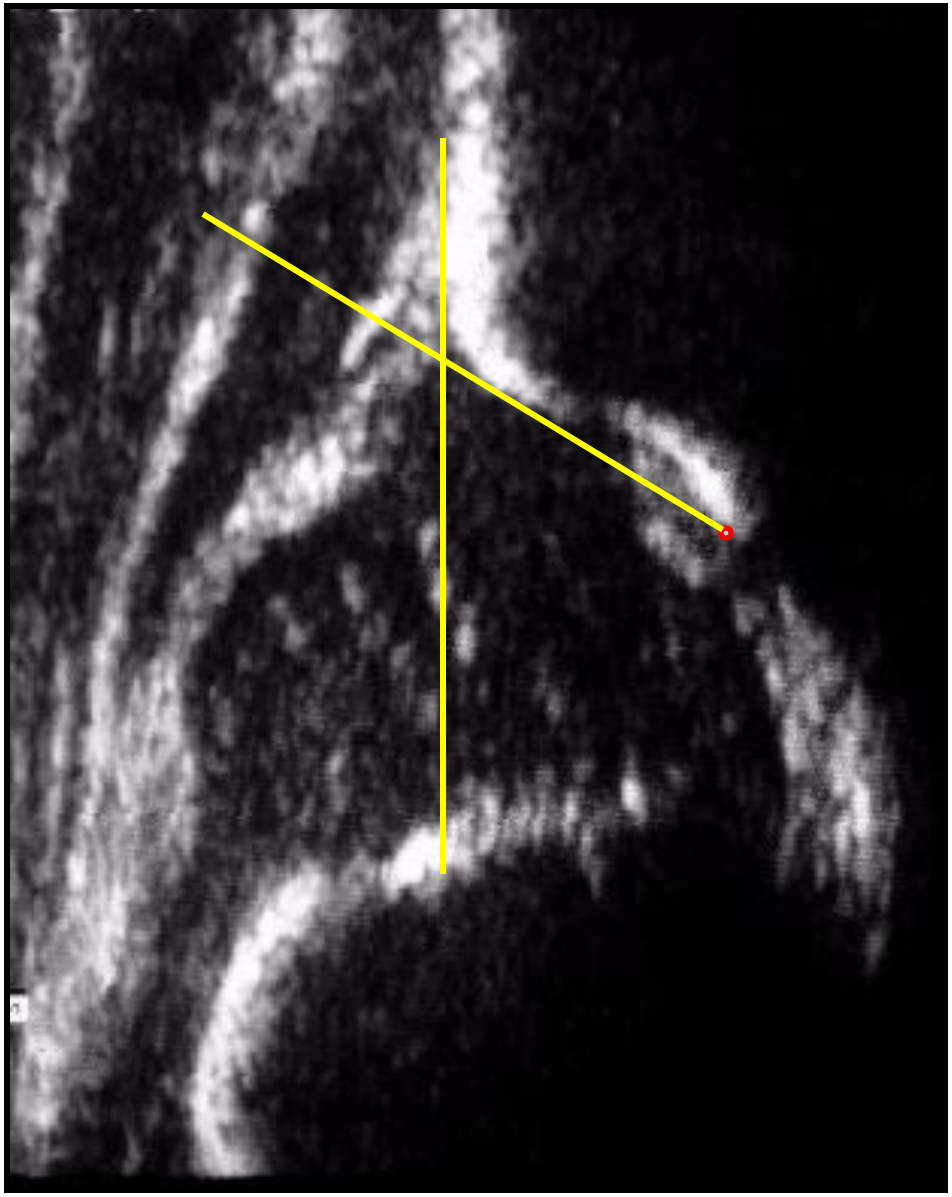


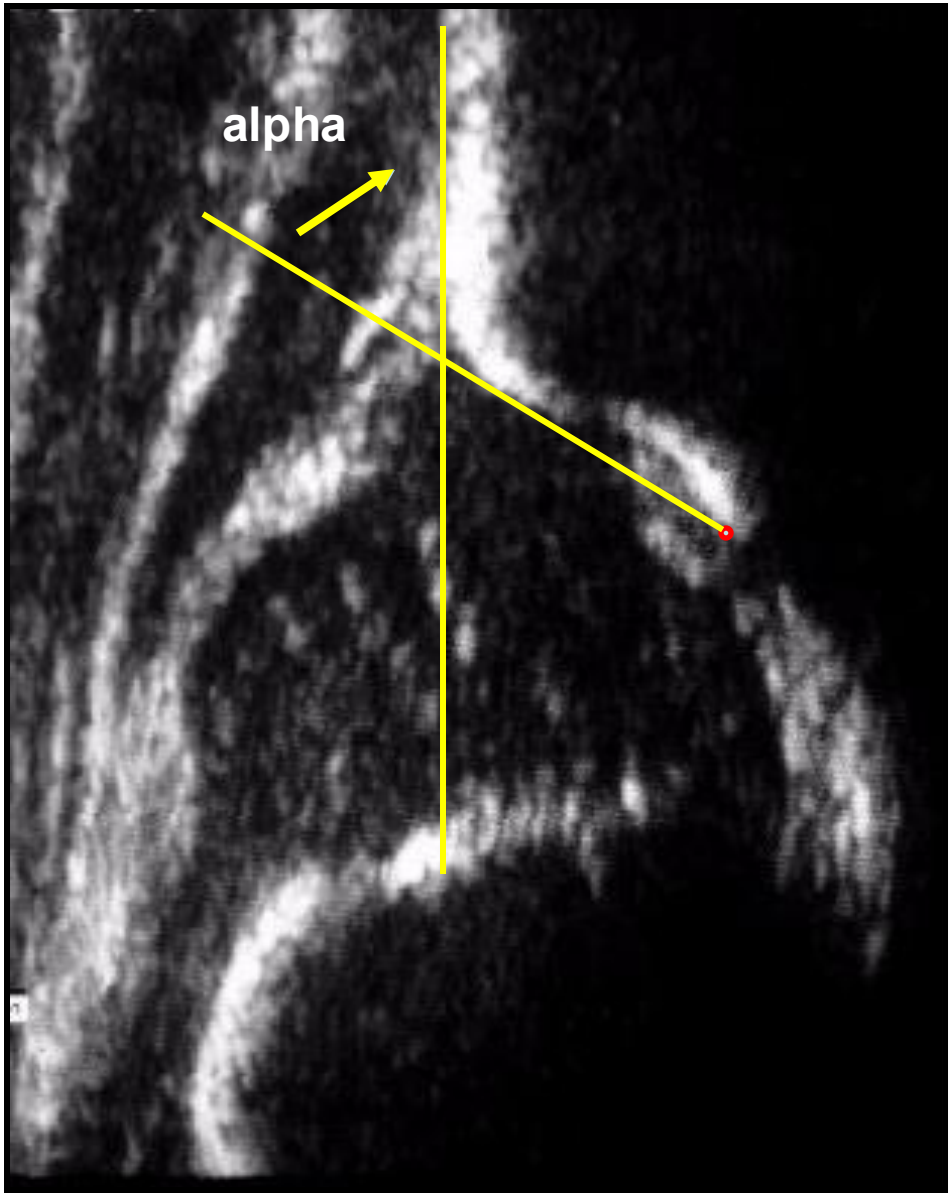
# BONY ROOF LINE



- Tangential to bony roof
- Pivot from Lower limb
- Identify TRUE lower limb:-
- Beware other echoes
  - Vascular sinusoids in cartilage
  - Fatty tissue
  - Ligamentum teres






alpha

# CARTILAGE ROOF LINE

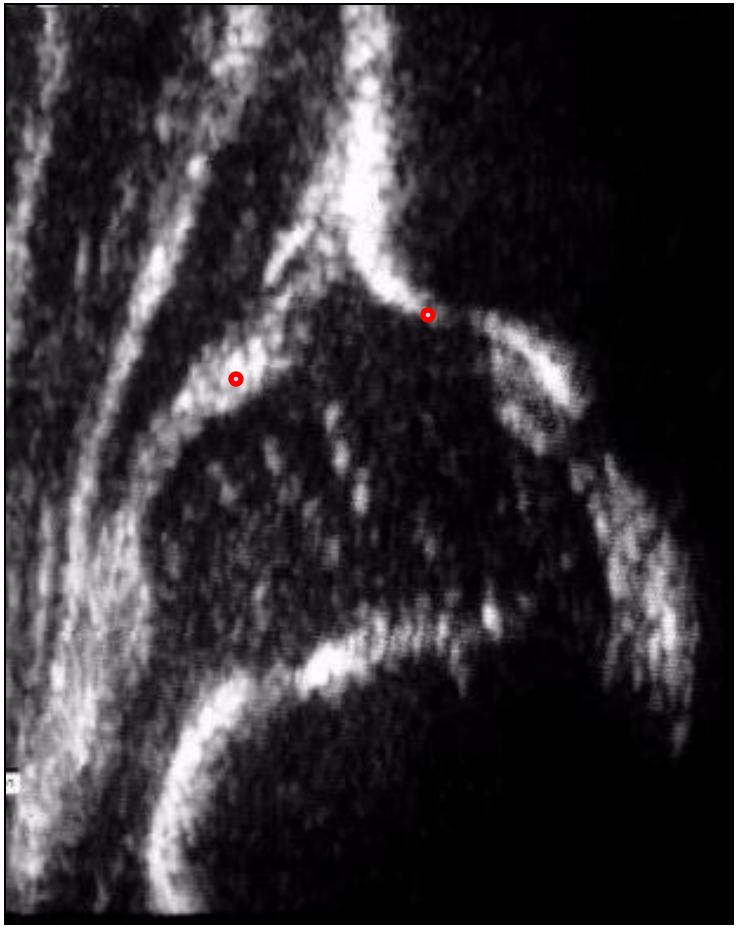
From turning point

through the centre of labrum

# CARTILAGE ROOF LINE

From turning point

through the centre of labrum

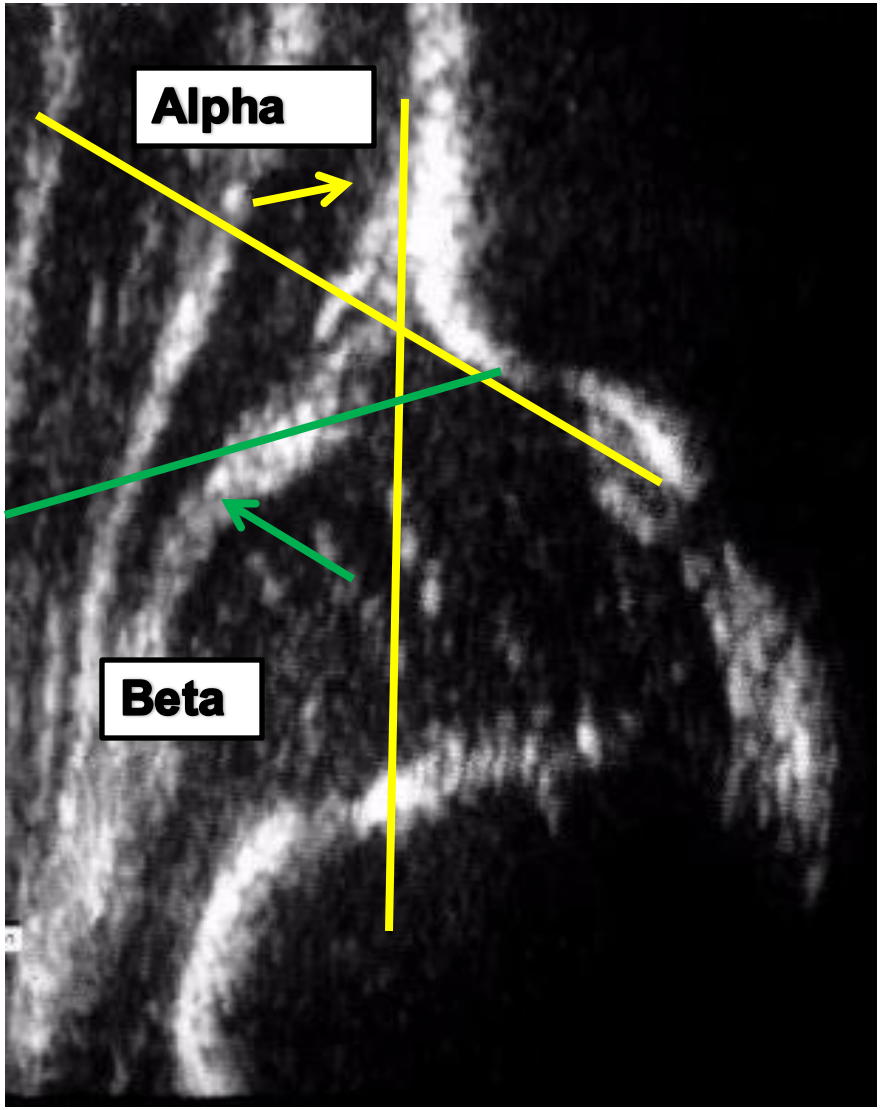


# CARTILAGE ROOF LINE

From turning point

through the centre of labrum

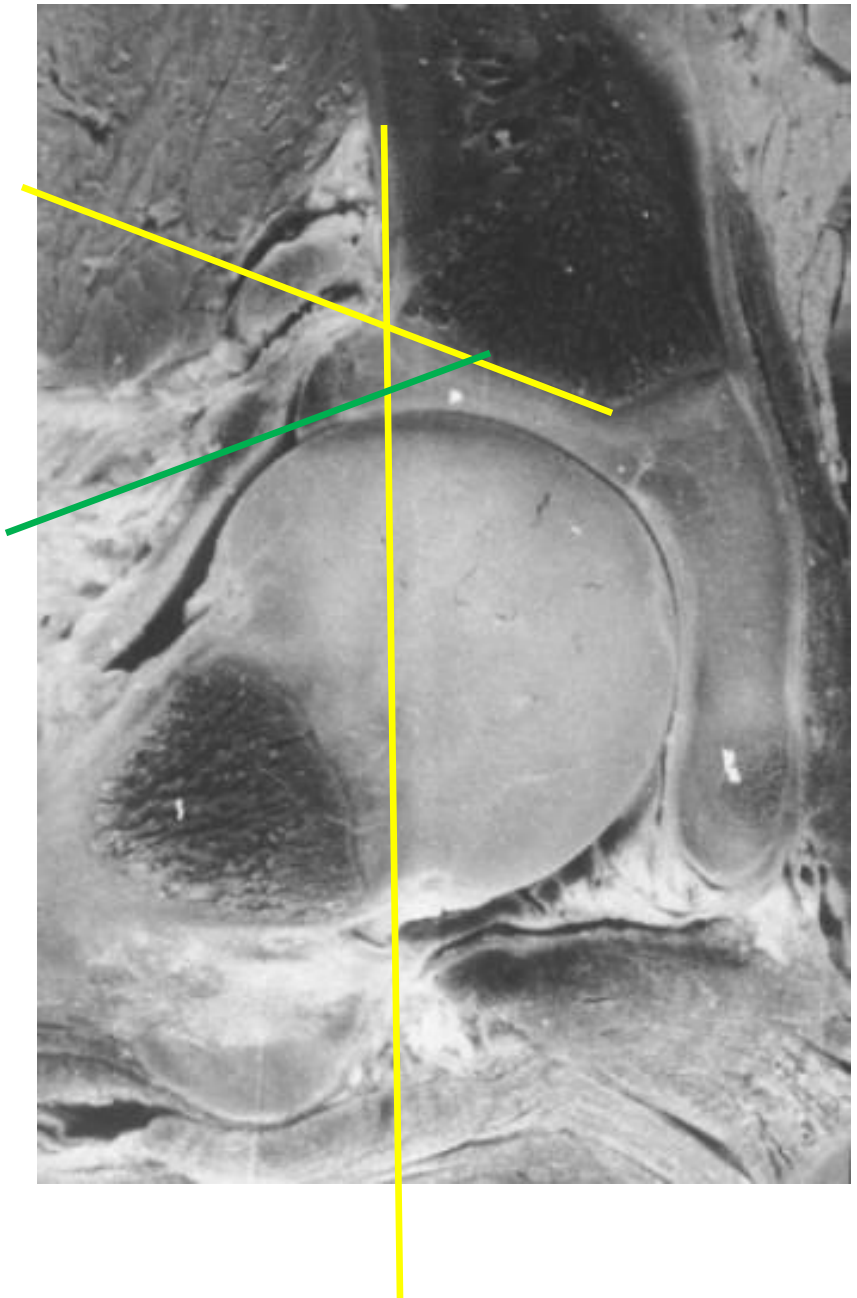
# MEASUREMENTS

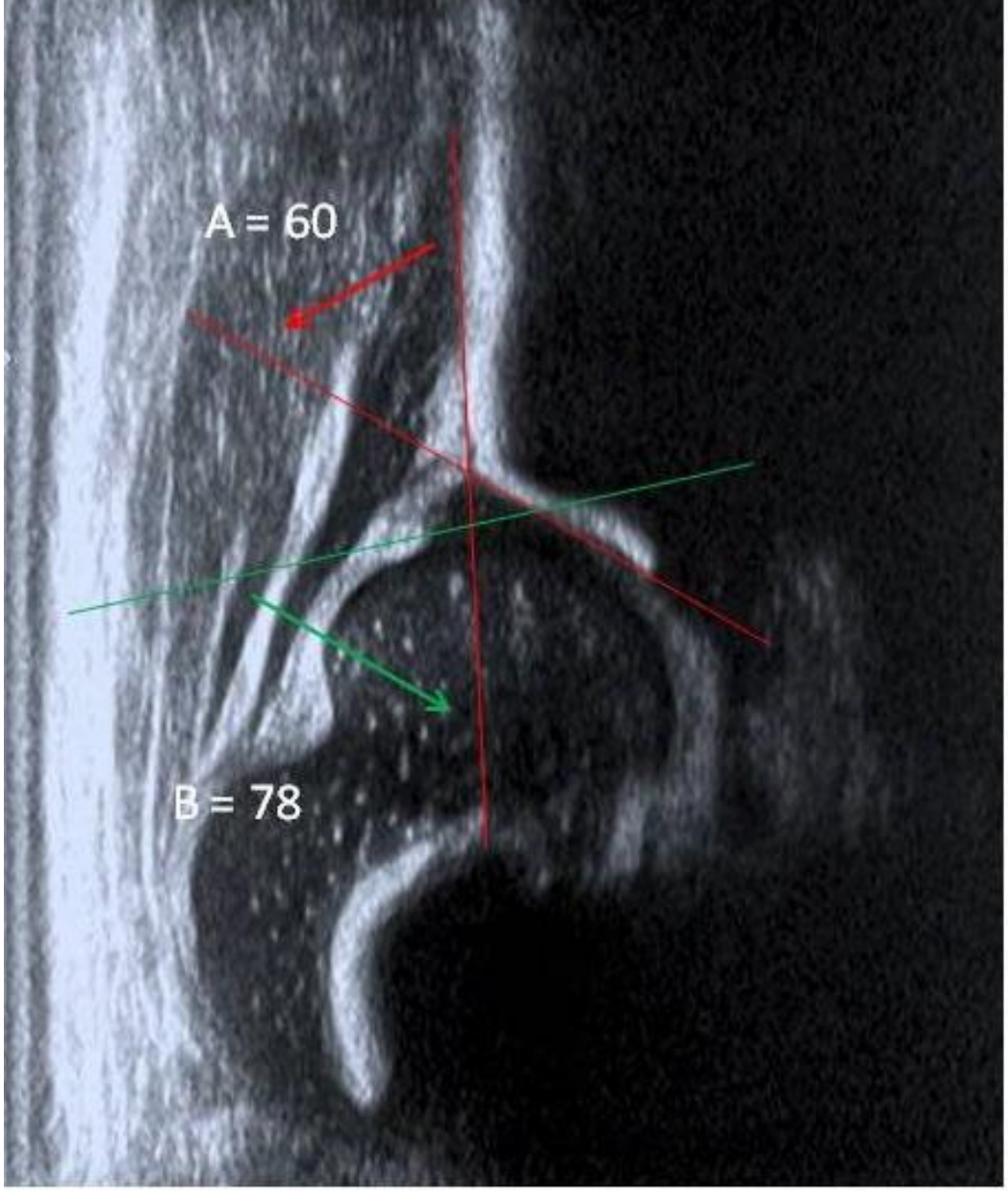



- ALPHA angle – baseline and bony roof line
- Evaluates bony socket

- BETA angle – baseline and cartilage roof line
- Evaluates cartilage roof

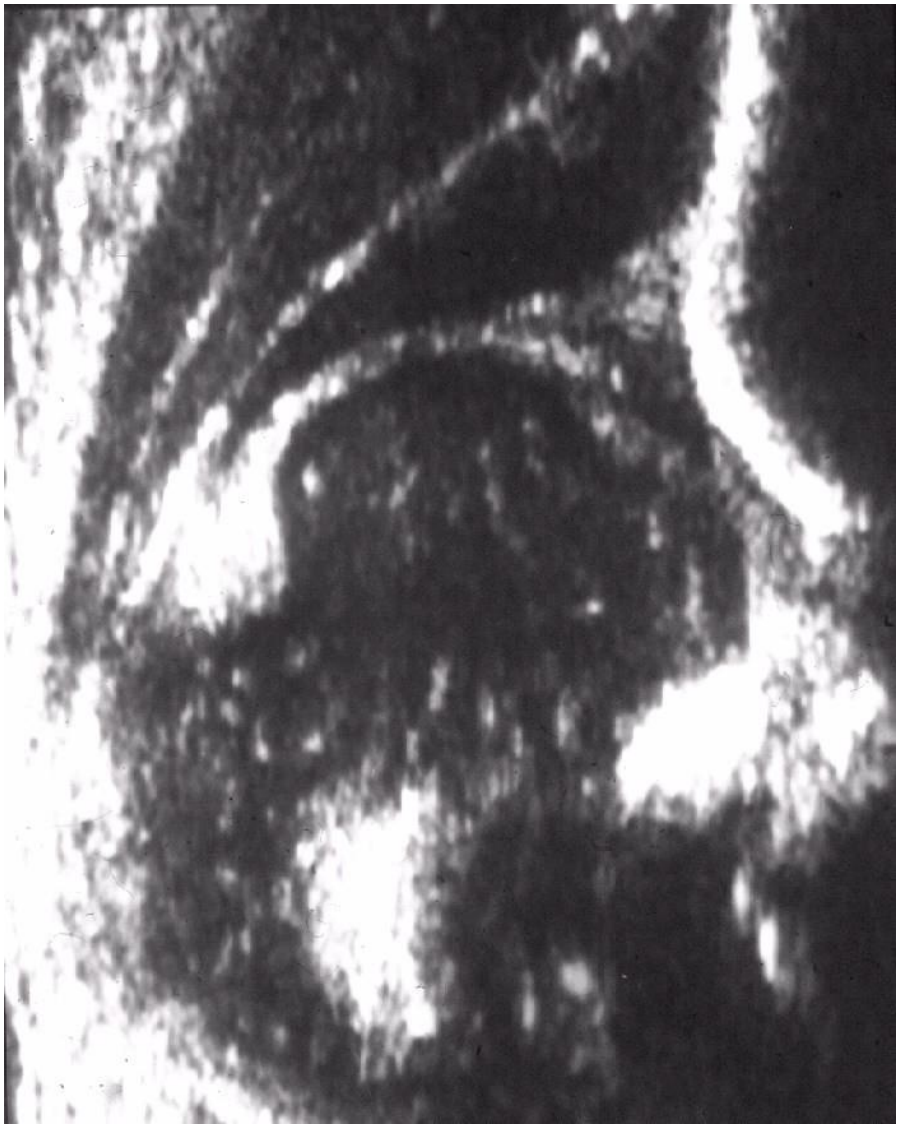
- Note – three lines do not usually meet at one point!

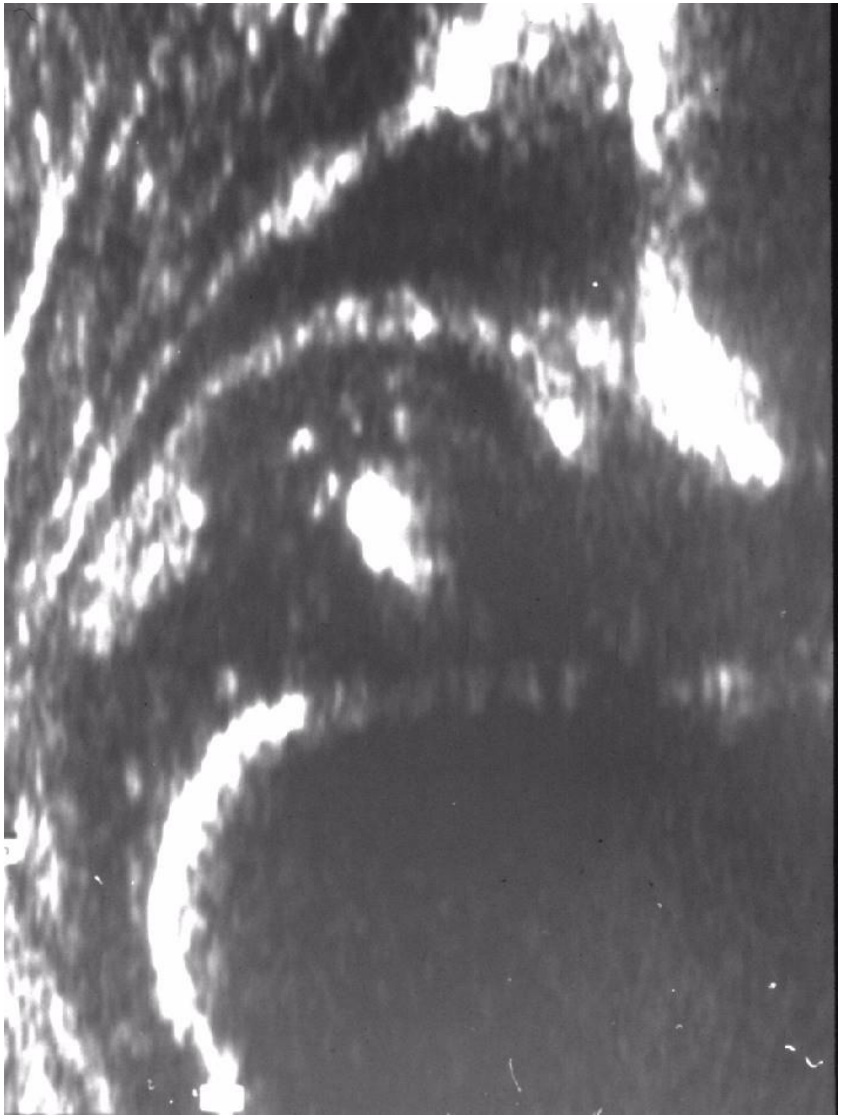


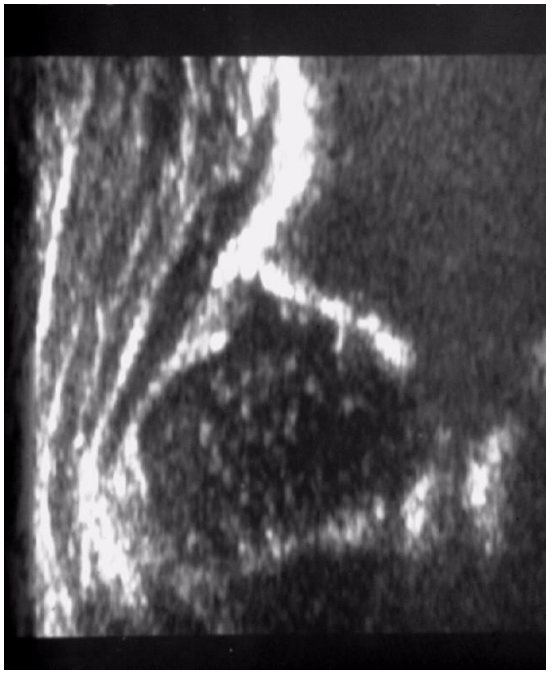

A = 60
B = 78

# Only Measure hips

- In the standard plane
- Lower limb plane labrum visible
- Type 3 and 4 do not need measurement

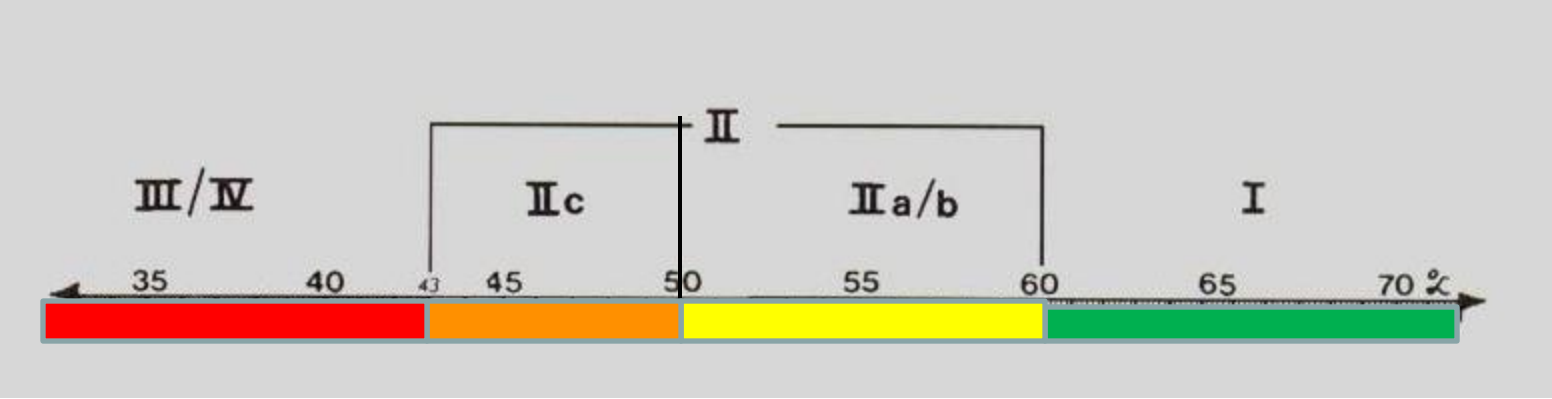






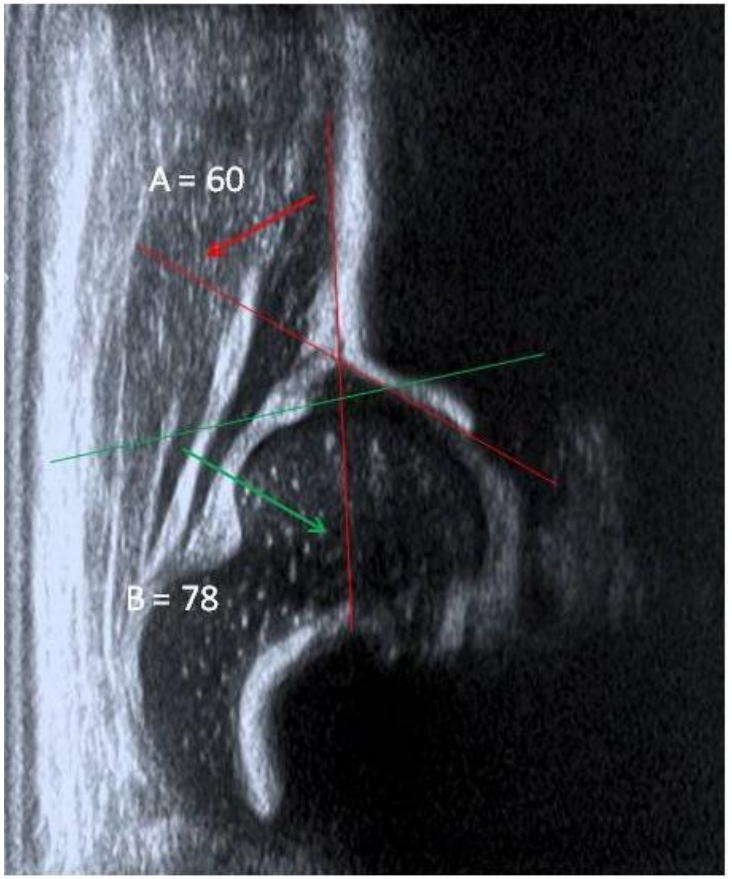
# Alpha value

If all Alpha values are plotted on a line, three large subdivisions can be differentiated.



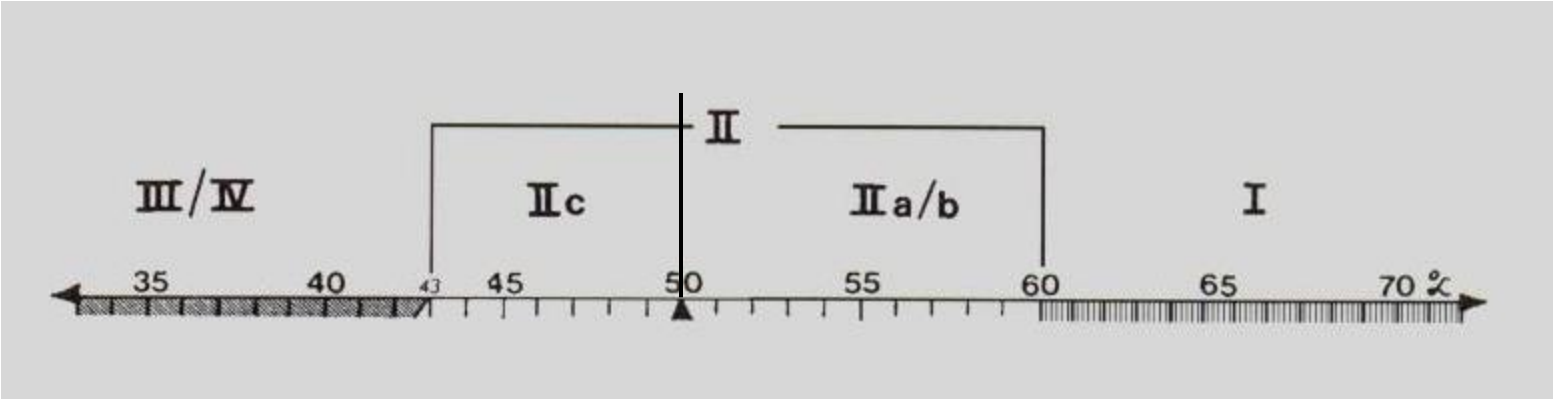
# TYPE I
# Alpha angle 60 degrees or more

- Mature normal hip



# TYPE II HIPS
# Alpha angle 43-59 degrees

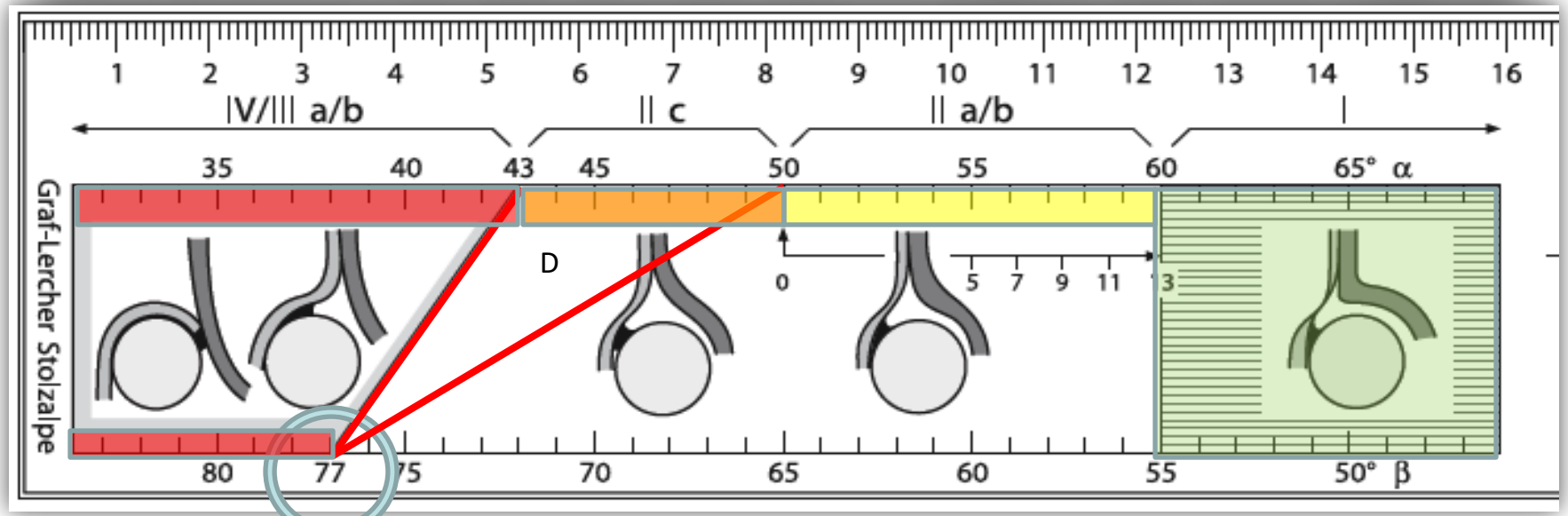
- ***Subclassification:***
- Type IIa – Alpha angle 50-59 degrees, child under 12 weeks – immature hip
- Type IIb – Alpha angle 50-59 degrees, child over 12 weeks - dysplastic hip.
- Type IIc – Alpha angle 43-49 degrees any age dysplastic hip



# TYPE IIC v TYPE D

- Type IIc – poor bony coverage – head may move out of socket
- Cranial displacement – no change in alpha angle; beta angle increases.
- Alpha angle 43 – 49 degrees; Beta angle > 77 degrees – Type D

# ULTRASOUND MEASUREMENT (alpha and beta angles)




Decentered (III,IV, D)

Unstable (IIc)

**Immature II a**
Dysplastic IIb

Normal type I

?