FIBULA

Dr. Untika Singh
Junior Resident
Department of Anatomy King George’s Medical University, UP, Lucknow
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LEARNING OBJECTIVES

By the end of this teaching session on tibia, all the students must be able to correctly:

- Identify fibula.
- Demonstrate the different parts, borders and surfaces of fibula.
- Determine the side of the fibula
- Hold the fibula in its anatomical position.
- Demonstrate attachment of joint capsule, ligaments and muscles on the fibula.
- Describe ossification of the fibula.
FIBULA

- Lies laterally
- Is smaller bone of leg.
- Very thin bone compared to ulna.
- Homologous to ulna of upper limb.
- Is not a weight bearing bone.
- It forms a mortice of the ankle joint.
FEATURES

- Upper end/head - expanded in all direction, circular articular facet (for lateral condyle of tibia), styloid process.

- Neck - constriction below the head.

- Shaft - 3 borders and 3 surfaces.
Borders

1. **Anterior border**-
   - **Above** - just below ant. Aspect of head.
   - **Below** - divide to enclose triangular area (cont. lateral surface of lateral malleolus)

2. **Posterior border**-
   - **Above** - in line with styloid process.
   - **Below** - continue with medial margin of groove on back of lateral malleolus.
3. Medial/interosseous border -

- Lies just medial to ant. Border.
- Terminates-below at roughened area above talar facet.
- Upper 2/3rd – lies very close (indistinguishable) to ant. border.
Surfaces

- Medial surface
- Lateral surface
- Posterior surface

Lies between and features

- Anterior and medial border
- Its upper 2/3rd very narrow (1mm or less)
- Anterior and posterior border
- Twisted backward in lower part
- Interosseous and post. Border
- Upper 2/3rd divide by vertical ridge called medial crest.
BORDERS AND SURFACES

- Apex
- Articular surface
- Medial crest
- Sartorius border
- Anterior border
- Articular surface
- Medial malleolus
- Lateral surface
- Posterior border
- Lateral surface
- Anterior border
LOWER END/LATERAL MALLEOLUS

1. Anterior surface - rough and rounded.
2. Posterior surface - have a groove.
3. Lateral surface - subcutaneous.
4. Medial surface - have triangular facet for talus (anteriorly)
   & malleolar fossa (posteriorly)

Special features of lateral malleolus -

- Tip of lateral malleolus 0.5 cm lower than that of medial malleolus.
- Ant. Surface of lateral malleolus 1.5 cm posterior to that of medial malleolus
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ATTACHMENTS AND RELATIONS OF FIBULA

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<th>Surfaces and borders</th>
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<td>Medial surface</td>
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- Medial surface
- Extensor digitorum longus
- Extensor hallucis longus
- Peroneus tertius
Lateral surface

Attachments on lateral surface of fibula

Peroneus longus

Peroneus brevis
Neck

Common peroneal nerve

Posterior surface

1/4
Soleus

3/4
Flexor hallucis longus

B/W medial crest and post. Border

B/W medial crest and interosseous border

Tibialis posterior
| Head                        | Biceps femoris  
|                            | Fibular collateral ligament  
|                            | Capsular ligament of the superior tibiofibular joint |
| Anterior border            | Ant. intermuscular septum,  
|                            | Sup. Extensor retinaculum  
|                            | Sup. peroneal retinaculum |
| Posterior border           | Post. intermuscular septum |
| Interosseous border        | Interosseous I membrane  
|                            | **Gap(at upper end)**-Ant. tibial vessels  
<p>|                            | <strong>Gap(at lower end)</strong>-perforating branch of peroneal artery. |</p>
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| Triangular area above medial surface of Lateral malleolus | Interosseous tibiofibular ligament  
Ant. tibiofibular ligament  
Post. tibiofibular ligament |
| Lateral malleolus | Ant. talofibular ligament  
post. tibiofibular ligament  
Inf. Transverse tibiofibular ligament  
Capsule of ankle joint  
Calcaneofibular ligament  
Tendon of Peroneus longus (in groove of post. Surface)  
Tendon Peroneus brevis (in groove of post. Surface) |
1 primary and 2 secondary centres

Primary centre- for shaft-appear 8\textsuperscript{th} week

1\textsuperscript{st} secondary centre - for lower end-appear 1\textsuperscript{st} yr. of life fuses with shaft -16 yr.

2\textsuperscript{nd} secondary centre - for upper end-appears 4\textsuperscript{th} yr. of life fuses with shaft -18 yr.

\textbf{OSSIFICATION-}

Fibula violates the law of ossification-
Secondary centre which appears first in the lower end fuses earlier and not later.