Subject: Anatomy II NAME JABRAN KHAN

Mid Term Assignments. ID #16364

Semester: DPT 2nd. Section A DPT

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Section A.

Note: Highlight the correct option of the given MCQs from section A. attempt all 3 questions from section B.

* **Out of the following bony landmarks to which the Ligamentum teres attached?**

1. intertrochanteric line
2. trochanteric crest
3. Fovea capitis
4. Greater trochanter

* **Neck of the femur connects the head of the femur with the shaft. It is cylindrical, projecting in a superior and medial direction. It is set at an angle of \_\_\_\_\_\_\_\_\_\_\_\_degrees to the shaft.**

1. 156
2. 170
3. 135
4. 101

* **The proximal area of the femur forms the hip joint with the acetabulum of the pelvis. It consists of a head and neck, and two bony processes the greater and lesser trochanters. There are also two bony ridges connecting the two trochanters; the intertrochanteric line anteriorly and the trochanteric crest posteriorly. Out of all these proximal bony landmarks which one is the most lateral palpable bony landmark?**

1. Greater trochanter
2. Lesser trochanter
3. The intertrochanteric line
4. Trochanteric crest.

* **\_\_\_\_\_\_\_\_\_\_\_\_is the site of attachment for iliopsoas muscle.**

1. Greater trochanter
2. Lesser trochanter
3. The intertrochanteric line
4. Trochanteric crest.

* **Neck of femur fractures are increasingly common and tend to be sustained by the elderly population as a result of low energy falls in the presence of osteoporotic bone. Classically, the distal fragment is pulled upwards and\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Medially rotated
2. Externally rotated
3. No rotation occurs
4. None of the above

* **Regarding neck of the femur fracture the medial femoral circumflex artery can be damage in\_\_\_\_\_\_\_\_\_\_**

1. Intracapsular fracture
2. Shaft fracture
3. Extracapsular fracture
4. Femoral epicondylar fracture

* **The shaft of the femur descends in slight\_\_\_\_\_\_\_\_\_\_\_\_ for stability.**

1. Lateral direction
2. Medial direction
3. Posterior direction
4. Diagonal direction

* **Mr. A met with an accident and his right femur broke at 3 different places. The cut was a clean break and the four pieces were put back together in their original place. What kind of fracture did he have?**

1. Contusion
2. Hairline Fracture
3. Multiple Fracture
4. Simple Fracture

* **A closed femoral shaft fracture can result in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_blood loss.**

1. 10-15ml
2. 100-150ml
3. 1000-1500ml
4. 10000-15000ml

* **Which of the following is the medial bone of lower leg?**

1. Patella
2. Fibula
3. Tibia
4. Medial cuboid

* **The shaft of the tibia is prism-shaped, with\_\_\_\_\_\_\_\_\_\_\_**

1. One border and one surface
2. Two borders and one surface
3. Three borders and two surfaces
4. Three borders and three surfaces

* **The calcaneus is often fractured as a result of \_\_\_\_\_**

1. Distraction
2. Axial loading
3. Walking
4. Setting

* **The depth of the acetabulum is raised by the\_\_\_\_\_\_**

1. Fovea captious
2. Capsule of hip joint
3. acetabular labrum
4. ischial Bursae

* **The most powerful ligament of hip joint is?**

1. Iliofemoral ligament
2. Pubofemoral ligament.
3. Ischiofemoral ligament.
4. Transverse acetabular ligament

* **The hip joint is supplied by the branches of the following arteries EXCEPT**:

1. Medial circumflex femoral artery.
2. Lateral circumflex femoral artery.
3. Radial artery.
4. Superior gluteal artery.

**Section B**

***Q:1*****Describe Hip joint anatomy. (your answer should cover these headings, (Articular surfaces of hip joint, Ligaments of joint, Stability of hip joint, Blood and nerve supply).**

**STRUTURE OF HIP JOINt**

*ANS NO 1 : The hip joint is a ball-and-socket synovial joint*

* *the femoral head acts as a ball and the socket is the* [***acetabulum****.*](https://www.earthslab.com/anatomy/acetabulum/) *This is considered as biggest ball and socket joint in the body.*

**Function**

* *It forms a connection from the lower limb to the pelvic girdle, and thus is designed for stability and****weight-bearing****rather than a large range of movement.*
* *When stading walking and running it supports the weight of whole body*
* Provides structural stability to the Musculo-skeletal system

**Articulation**

* *The hip joint articulation between the head of femur and acetabulum of plevis bone.*
* *Head of femur articulate horse shoe shaped acetibulum of hip bone formed hip joint .*
* *The acetabulum is a cup like depression.*
* *Head of femur creates more than half sphere.*
* *It covered by the articular hyaline cartilage except a small pit the fovea capitis for ligamentum teres.*
* *The depth of the acetabulum is raised by acetabular labrum.*
* ***Acetabulum present 3 feature;***
* **1.** *A horse shoe shaped lunate surface*
* **2.** *Acetabular notch*
* **3.** *Acetabular fossa*
* **Ligaments**
* *The ligament of the hip joint increase stability.*
* Capsular ligament
* Iliofemoral ligament
* Pubofemoral ligament
* Ischiofemoral ligament
* Transverse acetabular ligament
* Acetabular labrum
* Ligamentum teres femoris
* **Explination of ligament**
* **(1) capsular ligament:,**
  + - *The capsular ligament is powerful and dense fibrous sac which encloses of joint.*
    - *It’s connected 5-6 millimeter past the acetabular margin* outer aspect of the acetabulur labrum and transervrse ligament.
    - *On the femur, it’s connected anteriorly to the intertrochanteric line and posteriorly 1 cm in front of (medial to) the intertrochanteric crest.*
    - *The capsule is thicker anterosuperiorly, where the maximal stress takes place, especially in the standing position. Posteroinferiorly it’s thin and loosely connected.*
    - **The capsule is made up 2 types of fibers**
    - *(1)inner cicular fibers*
    - *(2)outer longitudinal*
    - **(1)INNER CIRCUALAR FIBERS**
      * + *The circular fibers, (zona orbicularis,) are most abundant at the lower and back part of the capsule, and form a sling or collar around the neck of the femur.*
        + *These fiber are not directly connect to the bone*
* **(2)OUTER LONGITYDINAL:.**

*The longitudinal fibers are greatest in amount at the upper and front part capsule, where they are reinforced by distinct bands,*

*The neck toward the head to create the( retinavCula)*

* **(2) ILIOFEMORAL LIGAMENT**
  + - **Most formidable ligament of the body**
    - *They prevent the trunks from filling backwards in the standing postion*
    - arises from the anterior inferior iliac spine.
    - *The iliofemoral ligament is an inverted Y shaped ligament.*
    - *Locted anteriorly and closely combined with the capsule*
    - *Apex connect to the lower half iliac spine and area between it and above acetabular margin.*
    - *It connect intertrochantric line*
    - ***This ligament inculde 3 parts***
    - ***1*** *latral thick group of oblique fibers*
    - ***2*** *medial thick group of vertical fibers*
    - ***3*** *large central thin portion.*
* **(3)PUBOFEMORAL LIGAMENT:,**
  + - *It has a triangular shape, and prevents excessive abduction and extension.*
    - *Located inferomedially and support the joint on the particular aspect*
    - *It base is connected to the iliopubic eminence.*
    - [*superior pubic ramus, and obturator crest. Inferiorly it combines wit*](https://www.earthslab.com/anatomy/superior-pubic-ramus/)*h all the anteroinferior part of the capsule and medial group of the iliofemoral ligament.*
* **(4)ISCHIOFEMORAL LIGAMENT:.**
  + - *Ischiofemoral ligament is comparatively feeble*
    - *Support the capsule posteriorly.*
    - *Above its connect ischium posteroinferior to the acetabulum*

*From ischium its fibers spiral behind the femoral neck to be connect into greater trochanter deep to thee iliofemoral ligament.*

*(5) LIGAMENT OF THE HEAD OF FEMUR:.*

* *It’s a flat triangular ligament with apex connected to the fovea of the head.*
* *its base to the transverse acetabular ligament.*

*It conducts arteries to the head of the femur originated from the acetabular branches of the obturator and medial circumflex femoral arteries.*

**(6) TRANSVERSE ACETABULAR LIGAMENT.**

* *It’s a part of acetabular labrum which bridges the acetabular notch; nevertheless,*

*It’s devoid of cartilage cells. The acetabular notch so becomes converted in the foramen which carries the acetabular vessels and nerves to the hip joint*

**(7)ACETABULAR LABRUM:.**

* *The acetabular labrum is a fibro cartilaginous rim connceted to the acetabular margin*
* *It’s a triangular In cross section*

*The labrum not deepens acetabulum but takes the head of femur softely to hold postion.*

**STABILITY OF THE HIP JOINT:,**

* *(1) The primary function of the hip joint is to****weight-bear.******There*** *are a number of factors that act to increase stability of the joint.*
* *There is a horseshoe shaped fibrocartilaginous ring around the acetabulum which increases its depth, known as the****acetabular labrum.***
* *The iliofemoral, pubofemoral and ischiofemoral ligaments are very strong, and along with the thickened joint capsule, provide a large degree of stability.*
* *Strength of muscle*
* *Atomesphere pressure*

*Length of neck of femur*

* **Bursa**
* *A bursa is synovial fluid filled sac found between moving structure in a joint*
* *Readuce wear and tear on those structure*
* ***These are 7 In number :,***
  + *4 under Glutues maximus*
  + *1 under Glutues medius*
  + *1 under Glutues minimus*

*1 under psoas tendon.*

**ARTERIAL SUPPLY**

*The hip joint is supplied by the branch of the following arteries*

* *Medial circumflex femoral artery*
* *Lateral circumflex*
* *Obturatory artery*
* *Superior gluteal artery*
* *Inferior gluteal artery*

**Nerve supply:..**

* **Inverted articular branch through**
* **(HALTON’S LAW)**
* *FEMORAL*
* *OBTURATOR*
* *SUPERIOR GLUTEAL NERVE*
* *NERVE TO THE QUADRATUS FEMORIS*

*SCIATIC NERVE*

**Movements**

* *The movements that can be carried out at the hip joint are listed below*
* **Multiaxial joint allow movement**
* *FLEXION AND EXTENSION*
* *ABDUCTION AND ADDUCTION*
* *MEDIAL AND LATERAL ROTATION*
* *CIRCUMDUCTION*
* *Extension =15°*
* *Abduction=50°*
* Medial rotation=25°
* Lateral rotation=60°
* ***End this qustion***

***Q:2*** *Explain the following in detail.*

* *Cruciate ligament*
* *Menisci*

***C*ruciate ligament**

* Are pair of ligaments arrange like a litter X
* They ocure and sevral joint of the body such is knee joint
* While the occure very large rang of motion
* These are two ligament connect with the femur and the tibia

They cross each other hence the term cruciate

**Two ligament**

* **(1)ANTERIOR CRUCIAT LIGAMENT**
* **(2)POSTERIOR CRUCIAT LIGAMENT**
* **ANTERIOR CRUCIAT LIGAMENT .**
  + - * *It attach at the anterior intercondylar region of the tibia where it blemds with the medial meniscus*
      * *It ascends posteriorly to attach to the femur in the intercondylar fossa it prevents anterior dislocation of the tibia onto the femur.*

**POSTERIOR CRUCIAT LIGAMENT .**

* *Attch to the posterior intercondylar region of thee tibia and ascends anteriorly to attach to the antermedial femoral condyl*
* *It prevent posterior dislocation of the tibia onto the femur*

**CRUCIATE LIGAMENT**

* *THE anterior cruciate ligament can be torn by hyperextension of the knee joint*
* *The application of a large force to the back of the knee with the joint partly flexed to test for this you can perform an anterior drawar test*
* *Where you attempt to pull the tibia forwards*
* *The most common machanism of posterior cruciate ligament damage is the dashboard injury this occur when the knee is flexed and a large force is apllied to the shin pushing to thee posterorily .this is often seen in car accident where the knee is hits the dash board*
* *To the test for postetior cruciate ligament perform the posterior draw test this ia where clincian holds the knee in flexed postion and pushes the tibia posteriorly if there is movement if the ligament has been torn .*

**Menisci**

* Medial and latral menisci are fibrocartilage sturture in the knee that sever two function
* **To deepen** 
  + *The articular surface of the tibia thus increase stabilty of the joint*
  + *To act shockabsorberin inrcrease surface area further dipute force*
  + *They are C shap attach both end to the intercondyler area of the tibia*
* *In addition to the intercondylar attachment, the* ***medial meniscus*** *is fixed to the tibial collateral ligament and the joint capsule. Damage to the tibial collateral ligament usually results in a medial meniscal tear.*
* *The* ***lateral meniscus*** *is smaller and does not have any extra attachments, rendering it fairly mobile.*
* ***Q:3*** *Write down a comprehensive note on medial and lateral ligaments of ankle joint*

***ANS NO 3***

***MEDIAL LIGAMENT***

* *The medial ligaments are on the inside of the ankle. They consist of the tibiotalar ligament*
* ***Medial ligament***
  + - *Is attached medial malleolus*
    - *It consist four ligament which fan out from the malleoulus*
    - *Attaching to the talus. Calcaneus. And navicular bones*
    - *The primary action of the medial ligament is to resist overeversion of the foot*
* **Lateral ligament .**
  + - *The lateral ligaments of the ankle, composed of the anterior talo-fibular ligament*
    - *Lateral ligament originate from lateral malleaous*
* ***Anterior talofibular.***
  + - * *Span between the llatral malleous and latarl aspect of the talus*
* ***Posterior talofibular*** 
  + - * *Spans between the latral malleolus and the posterior aspect of the talus*
* ***Calcaneofibular*** 
  + - * *Spans between the latral malleouls and the calcaneus*

***END….***