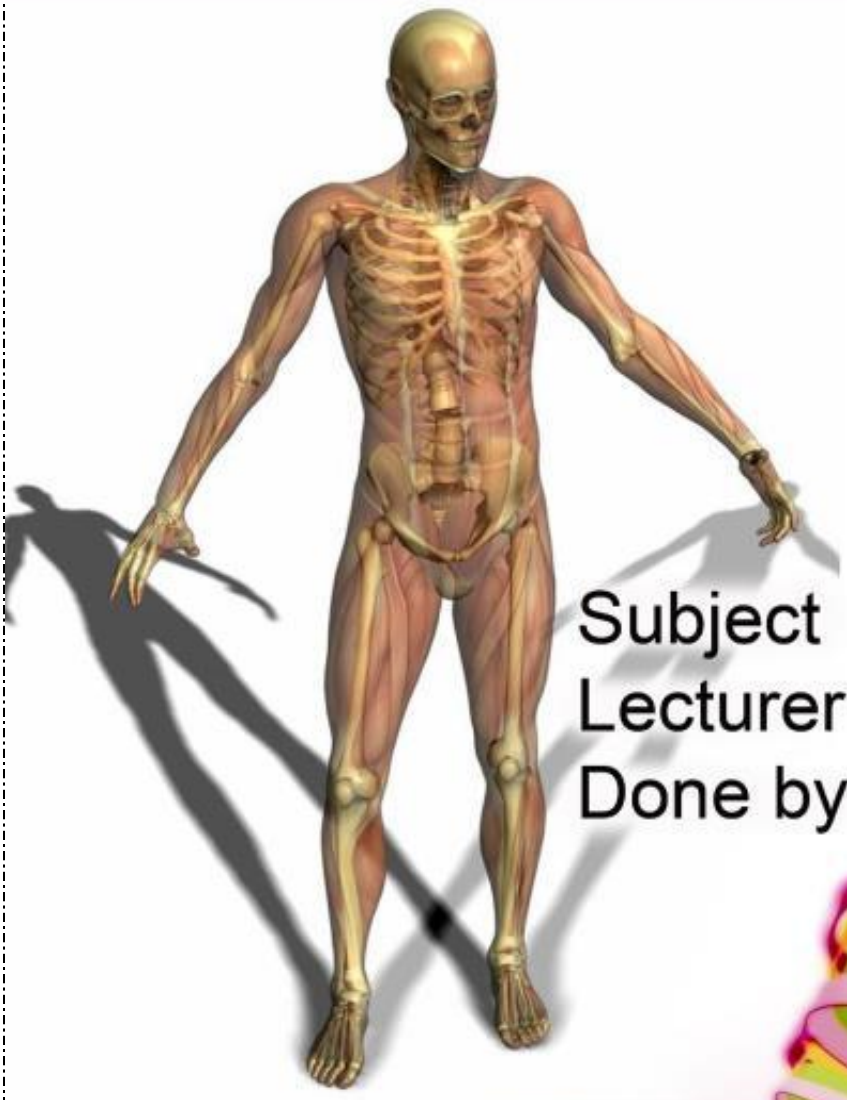
ANATOMY



Subject : *Introduction to Anatomy*

Lecturer : *Dr. Maher Hadidi*

Done by : *Mahmoud AlAZZAM*

lecture # : 8 Date : 20/2/2013

-Our lecture today about the nerves that passes in the upper arm and cubital fossa:

The doctor talked about 4 nerves:
1- Musculocutaneous nerve.
2 –ulnar nerve.
3- Median nerve.
4- Radial nerve.

Musculocutaneous nerve:

- It runs downward and laterally
- Originated: from the lateral cord of the brachial plexus.
- Pierce: the coracobrachialis muscle.
- Passing: between two muscles (biceps + brachialis) and supply them then.
- Then it continue as lateral cutaneous nerve of the forearm.

Note : it passes above Brachialis and supply it .

So the Musculocutaneous nerve supply:
1- 3 muscle.
2- One joint (elbow joint).
3- Skin (the lateral side of the forearm).

Remember: we said that the upper arm is divided into two compartments: Anterior and posterior compartments. These to compartments separated by two septa from the deep fascia one of them is called: medial inter muscular septum & the other is lateral inter muscular septum.

Note : refer to figure 7.10 page 657 in Gray's anatomy .

The ulnar nerve:

- Originated from the medial cord of the brachial plexus.
- pass between axillary artery and axillary vein then it pass medial to the brachial artery.
- Then about the middle of the arm it pierce the medial intermuscular septum (medial septum as doctor said) to be in the posterior compartment.

Note :

-in the upper half it is in the anterior compartment, and in the lower half it is in the posterior compartment (Why ?)to pass behind the medial epicondyle of the humerus.

- It is accompanied by superior and inferior ulnar collateral artery.

Remember:

*it doesn't supply any muscle in the arm

* in the upper half it's in the anterior compartment, in the lower half it's in the posterior compartment, why??

- To go and pass behind the medial epicondyle of the humerus.

Median nerve:

- Originated from the medial cord and lateral cord of the brachial plexus.
- it pass lateral to the brachial artery in the upper part and anterior to it in the middle half then medial to it in the lower part.

* (LAM = lateral then anterior then medial).

- Median nerve in the upper part it lies superficial then it goes below the biceptal aponeurosis and it doesn't supply any muscle in the arm.

The doctor missed to say that the biceps tendon insert in the radial tuberosity and has a flattened tendon (aponeurosis) insert in the deep fascia of the forearm.

Remember : it supply nothing in the upper arm

according to the doctor::

Biceps has two insertions :

1- through bicipital tendon (major one(90%))

2-apeneurosis of biceps

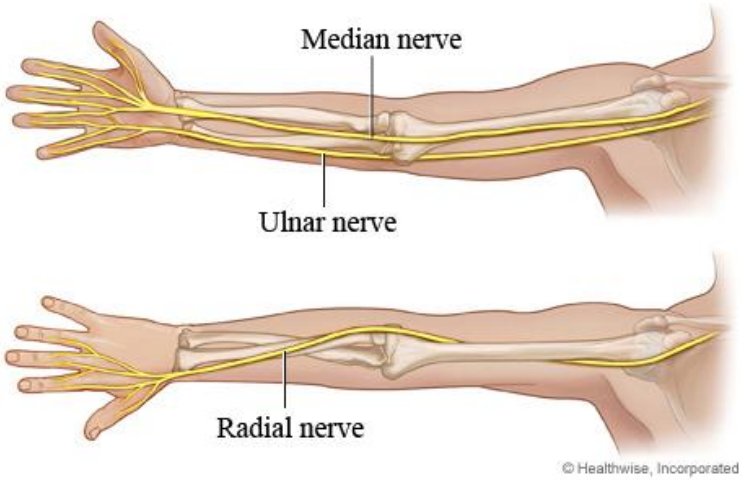
(refer to figure 7.66 in Gray's anatomy)

**you have to remember that the cords are named according to their relation to the second part of the axillary artery.

Radial nerve:

- Originated from the posterior cord of the brachial plexus and it is the largest branch.
- Pass medial to the humerus then it come to pass posterior through the radial groove between the two head of triceps (lateral and medial) then it leave the posterior compartment to pass anterior to the lateral epicondyle of the humerus.
- It supplies the posterior compartment of the arm.

** You should to know: radial nerve give branch to the structure it supply before it reach. Ex: It gives the branch to the long head of triceps in the axilla.



**** Most of the nerves in the upper arm are related to the humerus:**

1- The axillary nerve passes around the surgical neck of the humerus and if there is a fracture in the surgical neck will involve the axillary nerve and will paralysis two muscle (deltoid and teres minor).

2-The radial nerve is passing medially through the radial groove and the fracture of mid shaft of humerus will involve the lateral and medial head of triceps only because the lateral and medial take there branching here in the arm and the long head take its branch in the axilla.

So if there is a cut in the radial nerve (in the elbow region) this will cause weakness in the extension in the elbow but will cause lost of the extensor in the forearm(because it supplies all the extensor muscle by it's deep branch) . some of the symptoms : wrist drop and sensory changes over the dorsum of the hand.

3- ulnar nerve : fracture in the lateral epicondyle of the humerous may involve radial nerve , it will affect the forearm (not the upper arm).

****

THE FOREARM

The forearm extends from the elbow to the wrist and after removing the skin and superficial fascia and deep fascia it divided into two compartments (anterior and posterior compartments).

In the forearm:
We call the medial epicondyle (common flexor origin_ CFO) because it’s the common origin of flexor muscles in the anterior compartment and we call the lateral epicondyle (common extensor origin_ CEO) because it’s the common origin of extensor muscles in the posterior compartment and the line between two epicondyle's called intercondylar line.

The doctor talked about two muscles we will use it later in this sheet:

Brachioradialis : it's name according to origin and insertion ::
-Origin: lateral epicondyle of humerus.
-Insertion: styloid process of radius.
-nerve supply: radial nerve.

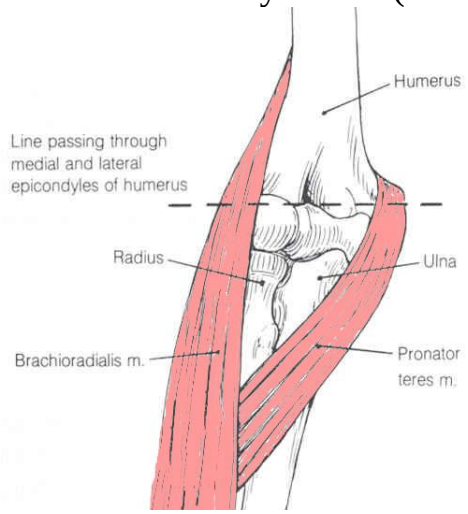
Pronator teres:
-Origin: the medial epicondyle (CFO)
- Insertion: lateral aspect of shaft of radius.
action : pronation
It's important because the median nerve lies behind it.

These two muscles is the boundary of the cubital fossa.

Cubital fossa:

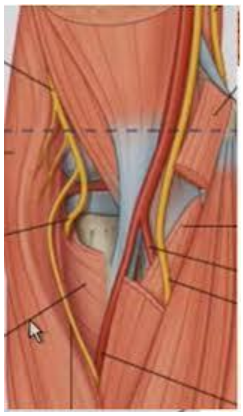
It is triangular space located anterior to the elbow joint which is the passageway for structures passing between the upper arm and forearm.

It has:
** boundary by:
- Laterally: Brachioradialis.
- medially: Pronator teres.
- base : intercondylar line (the doctor said interEpicondylar line)



**It has a contents: from medial to lateral :

1- median nerve.
2- brachial artery and its branches.
3- tendon of the biceps muscle.
4- radial nerve and its branches.
Q) any cut in the cubital fossa will involve : 1-4



**Floor:

1- supinator. (named according to it's function)
2- Brachialis.

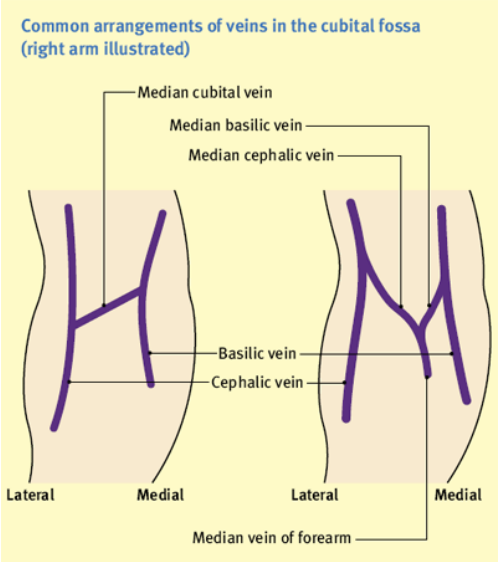
Note : We have two supinator muscles :

1) 1)Biceps (prime supinator)
2) supinator muscle in the forearm.

**Roof:

1- skin.
2- superfiscial fascia (basilic vein and cephalic vein & median cubital vein)
3- lateral cutaneous nerve of forearm (originates from musculocutaneous nerve)
4- medial cutaneous nerve of forearm 9 originates from medial cord of brachial plexus
5- Biceptal aponeurosis.

in a surgery , you will cut these structures to reach the contents of cubital fossa :P



Correction of sheet #7 anatomy :

1) ulna increase in size from distal to proximal not decrease .
2) coracobrachialis action is flexion of shoulder not elbow .
3) brachialis inserted into the tuberosity of the ulna and coronoid process of the ulna not coracoid .

Correction team

نقلا عن زملائنا في لجنة الدفعة :

ملخص اللقاء الأكاديمي لليوم 2013/2/17 للى ما حضروه ..

طبعا قدم اللقاء الطالب بشار الزغول .. سنة خامسة طب و معدل رائع ما شاء الله ..

-- لماذا ندرس ؟!!

جميعنا نعلم أن مهنة الطب و دراسة الطب تختلف عن كل التخصصات الأخرى لأن الطب مهنة عملية مئة بالمئة .. في الطب لا تحتاج لحفظ كل شيء و على الجميع التركيز على ما يهمه في المرحلة السريرية في المستقبل "clinical oriented" يعني ما بهمني اعرف العصب كم تفرع اله أو اعرف العضلة ايش اسمها باللغة السريانية :p بس بهمني اعرف هالعصب اي عضلة بغذي عشان اذا اجا مصاب عنده مشكلة بهالعضلة أعرف بأي عصب الخلل ...

-- كيف ندرس ؟؟!

حسب ما قال بشار .. انه كان في البداية يقرأ الكتاب كامل و بالتفصيل و كذا .. بعدين اكتشف انه اشي "worthless" .. مع انه اكد على اهمية تكون الكتب موجودة معك ... وحسب كلامه انه الآلية الأكثر فعالية في الدراسة هي انه تمسك الشيت او الهاند آوت .. تدرسه منيح .. بعدين بتتطلع على الكتاب .. مش ضروري تقرأه بالتفصيل ... بس مثلا درست الـbiceps في الشيت ... بتفتح كتاب الاناتومي .. بتشوف الصورة و بتشوف اذا في عنها اشياء كلينيكال في الكتاب و بتتطلع عليها هيك بشكل عام .. وهيك بتضمن علامة و علم ..
في الفسيولوجي .. حكالنا انه كان بدرس جايتون بعدين اكتشف انه مش مضطر يعمل هيك و انه الفايدة مش كثيرة .. هاند آوت و سلايدات .. و اطلاع على الكتاب فقط .. و حكالنا ركزوا على كتب المراجعة و كذا "رح احكي عنها لتحت شوي :p "

-- التخصص وما بعد الست السنوات ؟؟!!

اربع اتجاهات ...
ناس بتخصصوا بألمانيا و هدول نصحهم بأنهم يوخذوا كورسات لغة المانية ..
ناس بتخصصوا بأمريكا "بأمريكا ما في جراحة" و هدول بعملوا الـusmle ..
ناس بضلوا في الأردن
ناس بروحوا على دول أخرى ..

بعد الست سنوات .. في سنة امتياز .. انت بتختار وين بدك تتطبقها بناءا على اختيارك للمكان الي رح تشتغل فيه .. مثلا ... اذا انت بدك تشتغل في الاردن مستقبلا .. ممنوع تشتغل الا تكون عامل امتياز في الاردن ... و حكى انه سنة الامتياز بتكون سنة "حراثة" ..

-- ايش اشياء بتفيدني لقدام ؟؟؟!!

في الاناتومي ... في كتاب اسمو high yield للأناتومي .. هالكتاب عبارة عن Review للمادة و صغير مش كبير كثير .. "انا شريته أول الفصل بالمناسبة :)" .. كل اسبوعين ثلاث مثلا .. بتفتح على المادة اللي اخذتها في هالاسبوعين في الاناتومي .. بتيجي يوم الجمعة بتفتح هالكتاب .. و بتقرأ الي أخذته .. بساعدك على المادة الكلينيكال من الاناتومي و بساعدك توخد العلم فعلا و بساعدك في الطلعة برة للتخصص ... و نفس العملية في الفسيولوجي في كتاب اسمه costanzo ... برضو review ..
هيك حكالنا انه ممكن نوخذ العلم و العلامة ...

هالحكي هو ملخص اللقاء .. و ان شاء الله ما أكون نسيت اشي ... واذا نسيت ذكروني :)