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Upper limb anatomy lecture notes pdf

1. Upper limb anatomy • Introduction • General considerations • Brachial plexus 2. ANATOMY OF UPPER LIMBBRACHIAL BRAIDS 3. The dorsal nerves from C5 to C8, along with the T1 thoracic spinal nerve, unite to form a brachial plexus. Nerve elements combine, divide and combine again to mix different components, which leads to the main nerves of the shoulder, arm and arm. 4. Nerve plexus is an area where nerves branch and rejoin. Brachial plexus is a group of nerves in the cervical spine from C5 to C8-T1. This includes the lower half of the cervical nerve root and nerve root of the first thoracic vertebra. 5. Brachial plexus 1 Abdominal root C5 2 Abdominal root C6 3 Abdominal roots C7 4 Abdominal roots C8 5 Abdominal root T1 6 Ulnar 7 Radial 8 Median 9 Median 9 Musculocutaneous 10 Twine Medial b Posterior c Side 11 Posterior Chapter 12 Anterior Division Inferior b Middle c Superior 13 Inferior trunk 14 Middle trunk 15 Superior trunk 6. Erb paralysis • C5 - C6 • Birth injury • Hands hang next to + Rotate medially • Forear pronated + extended • Flexed hands + fingers • deltoid – supraspinatus – infraspinatus – biceps – brachialis 7. Klumpke's palsy/kloomp'kz/• C8 - T1 • Characteristic muscles of the arm + long flexors of the arm ------ paralysis • Claw arm = elongation MPJ + bending at IPJ • Neck ribs can cause paralysis similar to Klumpke's paralysis with post-fixed T2 contribution of 8. Spatula wing • Sustained chest injury • Palsy palsy Humeral fracture Of the surgical neck ---------- blood nerve damage ---- loss of abduction 9. Arterial blood supply to the upper limb 10. Axillary artery•Continuation of the Subclavian artery •Starts from the lateral boundary of the first rib to the lower limit of extreme winds•The Pectoralis minor crosses it against it and divides it into three parts •Part One • Upper thoracic artery (also called the highest •Part two • Lateral thoracoacrometrynusual •Third part • Branches of the first part of subclavian artery anastomosis with branches of the third part of chapter 11 of the axillary artery. The armpit artery begins at the lateral boundary of the first rib as a continuation of the subclavian artery. It changes its name to the brachymal artery at the lower (lower) limit of the teres main muscle. To get a description, it is divided into three parts by its respect for the pectoralis minor muscle. The first part is between the first rib lateral boundary and the medial boundary of the pectoralis minor, the second part is behind the pectoralis minor and the third part is between the lateral boundary of the pectoralis minor and the lower limit of the teres main 12. Brachial Artery Armpit Artery Continuation Begins from Eru's Large Suit and Neck Expires, dividing into the radial and elbow artery branches of the brachial artery Profunda brachi, traveling with the radial groove humerus Superior elbow collateral arteries o Inferior elbow collateral artery Nutrient artery humerus Terminal branches are radial and elbow arteries Relationships The middle nerve crosses against it from the lateral to the medial side level in the middle of the arm 13.1 superior thoracic a.(highest torak a.) (upper thoracic a.) 2 thoracoacromial a. 3 lateral thoracic thoracic a. 4 subscapular a. 5 anterior humeral circumflex a. 6 posterior humeral circumflex a. 14. The Ulnar artery Dod creates a common interosseous artery continuing as the superficial wrist arch arteries radial arteries continue as the deep palmar arch arm of the median artery Vestigial adult life arises from the anterior interosseous branch of the common interosseous artery provides nutrition to the median nerve the main source of blood supply to the upper limb of the fetus life passes the aneterior to the carpal tunnel 15. The diagram also shows that the brachial artery ends just below the elbow joint as the radial and elbow arteries to be covered by the forearm 16. 1 brachial 2 radial 3 radial recurrent 4 superficial radial 5 deep radial 6 elbow 7 anterior elbow relapsing 7 posterior ulnar relapsing 8 often inteross 9 posterrial 10 anterior interosseous 11 superficial branch 12 deep branch 17. The superficial arterial arc is formed mainly from the elbow artery and is completed by a superficial branch of the radial. This completion is not always present or can be very small. The deep arteries of the arteries are formed mainly by the deep branch of the radial artery and are completed by the deep branch of the elbow artery. 18. Upper limb venous drainage 19. Tributaries on the lateral side of the dorsal venous arc; superficial veins of the forearm Drains Into the armpits v. Regions Emptied superficial parts of the lateral arm and lateral forearm Notes the middle cubital vein usually shunts some blood collected with cephaloco v. to basilic v. (Latin/Greek, kephale = head) 20. The armpit vein is located along the medial side of the artery and is a continuation of the basil vein. It starts at the lower limit of teres large m. and ends at the lateral boundary of the first rib, where it becomes subclavian v. It receives tributaries that parallel to the branches of the armpit artery. 21. Cephalic v. joins the armpits just before it becomes subclavian. Penetrating the wound into the larger upper part is serious because the air can fall into the venous system. 22. Veins operating with their respective arteries are often multiples (2 or 3 interconnected veins). This interconnected venous network is called vena commitantes 23. Axilla, Pectoral and scapular regions 24. Anatomically, the boundaries of the armpit are medially: serratus plate and with ribcage with cool: the pectoralis chief, the minor, and the subclavius (see anterior axillary times) posteriorly: with the subscapularis above, and teres main and latissimus dorsi below (see also posterior axillary times) sideways: with intertuberk grooves (coracobrachialis and short head biceps brachii is axilla.) superiorly: with the outer border of the first rib, superior border of the blade, and the foolish floor/base of the posterior boundary: at the skin (visible in the underdus 25 surface. Deep muscles in the chest and front of the arm, with borders axilla. 26. Arterial armpits in the vein armpits boil the armpit nerve, medial cord, nerve posterior cord, lateral cord in the armpit lymph nodes 27. Lymphatic structure location Aferenti from Efferents to regions of the subdued notes armpit nodes axilla cubital nodes; efferents vessels in the upper limb, most of the armpit lymph nodes lymphatic vessels account for the number of breasts from 20 of the upper subclavian stem, gland, some from up to 30 and have limbs, chest wall some drainage on the anterolateral chest organized at five and subscapular lower deep walls, posterior groups based on region neck nodes of the chest wall and their position in the scapula region axilla: 1) chest node node, along the lateral border pectoralis the main m.; 2) lateral nodes along the distal armpit; (3) central nodes located by the armpit; (4) subscapular nodes along the subscapular v. and its tributaries; 5) apicle nodes, located at the apex of 28 axilla. There are about 15 to 20 knots usually arranged up to five groups. The group consists of: Breast (ane, anector) L side P rear around apicure 29. Muscles axilla and pectoral region 30. Pectoralis main origin medial 1/2 of the clavicle, manubrium & body thoracic, cost cartilage ribs 2-6, sometimes from rectus holsters in the upper abdomen w Inserting crest of shoulder action flexes and adducts arm, the medial rotating hand nerve supply medial and lateral thoracic nerves (C5-T1) Arterial blood supply to the thoracoacromial stem deep band on its abdominal surface should not melt on the fascia of the mammary gland – if it is, this is an important clinical sign that indicates breast disease (Latin, pectus = breast bone) 31. Pectoralis minor-origin ribs 3-5 Inserting coracoid process scapula action draws the scapula forward, medial, and down nerve supplies medial thoracic nerve (C8, T1) arterial delivery to the thoracic body branch Notes; medial thoracic nerve branches usually pierce the pectoralis minor to reach the pectoralis major muscle. 32. serratus anterior ribs 1-8 or 9 Inserting the medial boundary blades on its precious (deep) surface Operation it draws the blades forward; inferior fibers rotate the scapula superiorly nerves supply long thoracic nerve (from abdominal rami C5-C7) Arterial supply of lateral thoracic a. Damage to long thoracic nerve will cause winging of the scapula the medial border of the scapula falls away from the back of the chest wall and looks like an angel's wing) (Latin, serratus = sawn) 33. Thorax structure/space description/border topographic anatomy Meaning in the middle axial line An imaginary vertical line used as a surface landmark passing through the middle for descriptive purposes of the middle line of the axis – an imaginary vertical line used as a surface landmark passing through the middle logic of the 34th lap bone hemisphere. deltopectoral triangle in the upper thoracic region, which limits the medial to the clavicle, superiorly with deltoid m., and inferiorly with pectoralis the main m. deltopectoral triangle is pierced by a cephalograph vein in its course of the upper limb to join the axillary vein axilla 35. areola is a dark ring approximately 8 cm from the surrounding nipple midline in the left 5th intercostal space; surface landmark used to place the stethoscope auscultation of bicuspid valve suprasternal notch located superior also known as: jugular notch bordering manubrium of the chest, between the ends of the sternum 36. forming the gait of the inner abdominal thoracic neck medial part of the important drainage of the thoracic vascular wall of the abdominal breast wall and a pattern of cases of muscle cancer of the mammary gland; one or two parasternal nodes can be found at the end of the intercostal 1 to 6 bow; also known as: sternum nodes along the lateral lymphatic vessels from the central armpit nodes anterolateral thoracic which is an important group of boundaries of the mammary gland wall and muscle; most nodes to check pectoralis the main m. and anterolateral of the mammary glands during the breast along the course of the breast wall physical exam; also side thorax vessels known as: corner 37. Muscles of the scapular region of muscle origin insertion activity Inertia Artery Notes deltoid lateral one third deltoid tuberosity abducts the arm; armpit nerves in the posterior deltoid muscle clavicle, the flex of the shoulder brain fibers flex (C5,6) of the diacritical shoulder is the principle of acromion, & medially rotate the posterior cord a. hijacker of the lower lip of the arm; posterior brachial plexus hand, but due to crest spinal fibers extend & poor mechanical blade side rotate advantage so the arm can not initiate this operation; it helps supraspinatus m. teres large dorsal surface crest less adducts arm, lower subscapular diacritic placed in the worst angle tug of the medially rotated nerve (C5,6) of the a. adjacent tendon blade shoulder shoulder arm, helps the posterior wiring latissimus dorsi, the arm extension of the shoulder and helps weave latissimus in its operation triceps brachii long head: olecranon process extends the radial nerve deep in the shoulder long head infragoidlen of the ulna forearm; long (profunda brachii) triceps separates the tutric head expands and a. triangular and spatula; side adducts hand quadrilateral head: space (teres posterolateral main, teres minor humerus & lateral and shoulder intermuscularly have other partitions; medial boundaries); all head: three heads of posteromedial origin insert with the surface of the common tendon inferior 1 /2 of 39 humerus. rotator cuff supraspinatus supraspinato larger abducted suprascapular suprascapular supraspintus launches us Fossa tuberkula arm (initiates nerve (C5,6) a. abduction of the arm, the humerus abduction) of the deltoid muscle (highest superior completes the operation; facet) trunk member rotator crate shoulder group plexus infraspinatus infraspinatus larger laterally suprascapular suprascapular infraspinatus, supraspinatus, supraspinatus, s Fossa turula rotates nerve a. teres minor and humerus arm subscapularis is rotator (middle facet) cuff muscles teres minor upper 2/3 larger laterally armpits circum nervefl ex down the head later (C5,6) rotates (C5,6) from the blade a. humerus with the shoulder arm glenoid fossa border shoulder arm rear during abduction and bending of the arm blade (lower aspect) cord; member of the shoulder rotator cuff group plexus subscapularis medial two less medial upper and subscapular subscapularis, supraspinatus, thirds of the tunrkula rotates lower a. infraspinatus, and teres cost surface of the shoulder arm; assisted by a subscapular minor is a rotator cuff from the scapula signer nerve (C5.6) muscle (subscapular arm fossa) 40. Nerves from the Scapular Region Nerve Source Branches Motor Sensory Notes armpits n. poster wire superior lateral deltoid, teres skin upper armpit n. is the shoulder shoulder small lateral arm compromised by the plexus of the skin nerve surgical neck fractures lower posterior cord unnamed subscapularis m., no skin subscapularis subscapularis n. shoulder muscle brs. there are synergists (medial rotation of the shoulder) in the middle of the posterior cord unnamed latissimus dorsi no skin also called subscapular n. shoulder muscle brs. m. branch thoracodorsal n. plexus (C7, C8) suprascapular n. superior trunk of named supraspinatus no skin suprascapular n. brachial branches m., infraspinatus branches go through plexums (C5-C6) m. sucaplar notch inferior superior transverse scapular liga thoracodorals n. wired unnamed latissimus dorsi has no skin also known as brachial muscle BRS. m. branches of the middle plexus (C7, C8) subscapular n. upper posterior cord unnamed subscapularis m. no skin subscapularis is subscapular n. brachial muscle brs. branches of strong medial plexus (C5, C6) rotator humerus 41. Arteries from Scapular Region Artery Source Branches Delivery notes anterior circumflex humeral armpits a., part 3 unnamed muscle branches deltoid m.; arm muscles at anterior circumflex humeral a. surgical throat anastomoses with posterior humerus circumflex humeral a. posterior circumflex humeral armpits a., part 3rd unnamed muscle branches deltoid; arm muscles at the posterior circumflex humeral a. surgical neck humerus anastomoses with aterior circumflex humeral a.; it passes through a quadrilateral space with the armpit nerve armpits subclavian a. (armpit a. is part 1: superior thoracic a.; thoracic region, shoulder pectoralis minor m. crosses continuation subclavian part 2: thoracoacromial a., region and upper limbs lend to the armpit artery lateral to 1 ribs) lateral thorature a.; Part 3: and is used to demarcate 3 anterior humeral circumflex a., parts of the left posterior bigurscal circumelex a., subscapular a. diacritics of the capscapular a. unnamed muscle branch teres chief m., teres minor m., circumflex sucaplar a. infraspinatus m. anastomoses with suprascapular a. and dorsal scapular a. to form scaposis anastomosis doras marital scapula a., part 3 unnamed muscle branches levator scapulae m., dorsal scaposis a. anastomoses rhomboideus chief m., with suprascapular a. un rhomboideus minor m. subcapular a. buildular anastomosis; the dorsal scapular a is a branch of the transverse cervix a. ~ 30% of cases of subscapular armpit a., part 3 circumflex scapular a., subscapularis m., teres main diacritical scapula branch thoracodorsal a.m., teres minor m., no subscapular infraspinatus m. a.anastomoses with suprascapular a. and dorsal scapular a. spatula anastomosis suprascapular thyrocervical trunk muscle supraspinatus & infraspinatus, anastomoses with shoulder joint diacritical spatula a. and dorsal shr. spatula a. build spatula anastomosis chest lower root a. unnamed muscle branch latissimus dorsi m. thoracodorsal a. accompanying thoracodorsal n. 42. Topographic anatomy of the Scapular region structure / description of the room / limits the importance of the quadrigonal space space is limited by the armpits n. and teres minor m. superiorly, posterior diacritic maographic teres main m. inferiorly, humeral a. passes through this long head triceps space brachii m. medially and humerus sideways triangular interval interval between radial n. passes through teres main m. superiorly, this interval to get from the long head of triceps axilla on the rear brachii m. medially and the surface of the humerus humerus sideways triangular space, bounded by diacritical scapular teres minor m. superiorly, the ships are located in this teres main m. inferior space as they go from and long head axilla to the dorsum of triceps brachii m. sideways scapula 43. Scapular and diacritic arteries. (The square space is visible but not marked. The posterior humeral circumflex artery is seen entering the quadriot space in the center right.) 44. Suprascapular and armpit nerves on the right side, visible from behind. The square space is a side room marked green in the center right. The armpit nerve is seen entering it. 45. Breast The human breast (mammary) 46 consists of 10-20 simple glands. The presence of more than two nozzles is known as polythelia and the presence of more than two complex mammary glands as polymastia. 47. I Introduction/General A. Embryology: belongs to integument B. Functionally: part of the reproductive system 1. Respond to sexual stimulation 2. Feed infants C. Modified apocrine sweat glands - the apex of cells becomes part of the secretion and breaks off D. Located in men and women 48. The side aspect of the Pectoral region 2. Located between ribs 3 and 6 / 7 3. Extend the shape of the chest to the armpit 4. Surrounded by superficial fascia 5. Rest deep bar 6. Set on the skin and basically a band with fibrous TON bands a. Cooper's (Suspensory) Links b. Ligaments can retract if breast tumors are present at 49. Breast anatomy 50. The left breast is usually slightly larger Base is circular, either flattened or concave Detached from the pectoralis main muscle with fascia, retromammary space B. Structure 1. Nipple: a. In the fourth intercostal space b. Small conical/cylindrical meaning under the centre 51. Nipple location 4th intercostal space 52.c. Surrounded by areola: Pigmented ring skin d. Thin skin region lacks hair, sweat glands e. Contains areolar glands 3. Areola: contains a dark pigment that worsens with pregnancy a. Circular and radial smooth muscle fibres b. Cause nipple erection 53. Lobes and Lobules 54.5. The lactiferous channels converge against areola a. Form ampullae (collection site lactiferous sinuses) b. The ducts become contracted at the base of the nipple 6. Secreter epithelium a. Changes with hormonal signal b. Onset of menstruation c. Pregnancy (glands begin to increase after 2 month) d. After birth, the first secretion is colostrom (contains antibodies 55.7. Tail Spence = armpit tail a. upper, outer quadrant prolongation in the direction of the armpit b. Passes under the armpit band c. May be confused with the armpit lymph nodes 8. Adipose tissue: covers the surface, fills the gaps between the lobes. Determines the shape and size of the breast b. There is no fat deposit under the nipple & areola 56. Tail Spence Armpit tail 57. Breast: Fatty acids 58. Ships and nerves 1. Arteries: derived from the thoracic branch of three pairs of arteries a. Armpit artery continuously with subclavian a. creates an external milk (= lateral chest) artery 59. B. Internal thoracic (thoracic) artery 1) first descending subclavian artery 2) delivery of intercostal space and breast 3) used for coronary bypass surgery c. Intercostal artery: 1) numerous branches of the inner and outer thoracic arteries 2) supply of intercostal space and thoracic veins: a. forming a ring around the foundation of the nipple (circulus venosus) b. Large veins move from the circulating venous to the girth of the mammary glands, then c. External mammary glands v to the armpits v or d. Internal milk | Arterial delivery of breast Subclavian a. Axillary a. Internal mammal (breast) a. External mammalian (breast) a. 61. Veins that empty the breast subclavian vein External milk veins 62. Inerrity: derived from: a. anear and lateral skin nerves in the thorax b. dorsal segments T3 – T6 Lymphatics: clinically relevant! A. Glandular lymphatic drainage into the uterine armpit (thoracic) nodes ¡ central armpit nodes ¡ apical nodes ¡ deep cervical nodes ¡subclavicular (subclavian) nodes b. Medial quadrants drain into the parasternal node c. Superficial regions of the skin, areola, nipples: -form a large channel & drainage of the thoracic nodes d. NOTE: the armpit nodes also drain the lymph from the arm 63. Thoracic subclave lymph nodes Axillary nodes Parasternal Lateral nodem pectoral nodes 64. Lymph nodes and lymph nodes axillary Nodes 65. Metastasis pathways • From medial lymphatic to parasternal nodes – Then on the mediastinal nodes • Across the lymphatics of the sternum to the opposite side through the transverse ducts – Then to the contralateral breast • From subdiphragmatic lymphates to abdominal nodes – Then to the liver, ovaries, perium 66. The main pathways of metastasis channels to the contralateral lymphatic ducts of the breast asses subdiaphragmatic Lymph nodes 67. Arteries supplied by mammæ are derived from the breast branches of the armpit, intercostal, and internal mammals. Veins describe an anastomotic circle around the base of the papillae, called Haller circulus venosus. From this, large branches send blood to the circumference of the gland, and end in the armpit and inner thoracic veins. Arteries supplied by mammæ are derived from the breast branches of the armpit, intercostal, and internal mammals. 68. Muscles of the upper limbs 69. Latin musculus brachialis Gray themed #124 444 Origin for the anterior surface of the shoulder, especially the distal side of this bone Inserting the coronal process and tuberosity of the elbow artery into the radial recurrent artery nerves nerve activity at the elbow joint 71. Biceps is tri-articulate, which means that it works in three joints. The most important of these functions is supinate forearm and flex elbow. These joints and related activities are listed as follows for the important proximal radioularral joint humeroulnar joint Glenohumeral joint 72. Latin musculus biceps brachii Gray subject #124 443 Origin short head: coracoid process scapula. long head: supraglenoid tubes Inserting radial tuberosity and bicipittal aponeurosis into the deep fascia of the medial part of the ears of the arteries brachial artery nerve Musculocutaneous nerve (C5-C7) The action flexes the elbow and supinates forearm antagonist Tricep brachii muscle 73. Anterior compartment Muscle origin Insertion of the artery nerve action antagonist coracobrachialis coracoid process medial shoulder arteries musculocutaneous adducts humerus scapula nerve biceps brachii short head: coracoid radial tuberosity brachial artery Musculocutaneous flexes elbow and supinates Triceps brachii process of the tint. nerve (Lateral wire: forearm muscle long head: supraglenoid C5, C6, C7) tubercle brachialis anterior surface coronaoid process and radial periodic musculocutaneous flexion at the elbow joint humerus, especially tuberosity of the ulna artery nerve distal side of these bones in the 74th POSTERIOR COMPARTMENT • TRICEPS MUSCLE 75. Schematic drawing with measurements indicating the relationship of the radial nerve to osseous landmarks. Note the course of the radial nerve along the posterior shoulder and its association with the distal deltoid tuberosity and lateral epicondyle 76. MUSCLES ACTING ON THE ANTERIOR FOREARM: •BICEPS BRACHII •BRACHIALIS •BRACHIORADIALIS •PRONATOR TERES MUSCLES ACTING ON THE BACK: •TRICEPS BRACHII - LONG HEAD •TRICEPS BRACHII - MEDIAL HEAD •TRICEPS BRACHII - LATERAL HEAD •ANCONEUS 77. Posterior compartment Antagoni Muscle Origin Insertion of the artery nerve action st triceps long head: olecranon Profunda radial extends biceps brachii scapula process brachii nerve forearm, caput brachii lateral head: ulna longum adducts muscle posterior shoulder humerus medial head: posterior humerus anconeu lateral lateral profunda radial partially mixed s epicondyle surface brachii, nerve with recurrent (C7, C8, triceps, which it humerus olecranon interosse and T1) helps in the process and ousextenment of the superior artery forearm. the posterior elbow and ulna are robbed during pronation. 78. Cubital Fossa Cubital Fossa is a region of the upper limb in front of the elbow joint. It is a triangular area with the following boundaries: sideways, brachioradialis muscle medially, pronator teres muscle superiorly, imaginary line of medial and lateral epicondyles. 79. artery nerve layer aponeurotic layer 1 brachial artery 1 bicipital 2 mean nerve aponeurosis 2 biceps tendon vein layer 1 cephalotic vein 2 basilisil venous 2 basal veins average cubital veins bony floor muscle floor 1 humerus 1 supinator 2 radius 2 brachialis 3 ulna 3 biceps tendons 80. Trout Anterior compartment 81. kidnapped arm Nerve supply median nerve 82 flexor carpi ulnaris Origin common flexor tendon & (ulnar galva) from the medial border olecranon & upper 2 / 3 of the posterior border ulna insertion pisiform, hook hamat, and base 5thmetacarpal action flex wrist, adducts arm nerve supply elbow nerve nerve 83. the base distal phalanx of the base 2-5 action flexes metacarpophalangeal, proximal interphalangeal and distal interphalangeal joints Nerve supply mid nerve through anterolic interosseous branch (radial side); elbow nerve (elbow side) 84. radial head: in the middle of the 1/3 radius insertion shaft in the middle of the phalanx digit 2-5 action flexes metacarpophalangeal and proximal interphalangeal joints Nerve supply median nerve 85. flexor pollicis longus origin anterior radius and interosseous membrane insertion base distal phalanx thumb action flexes metacarpophalangeal joint thumb Nerve supplies mid nerve through external interosseous branch 86. pronator quadratus originating in the medial side of the anterior surface distal one-fourth of ulna insertion of the anterior surface of the distal one-fourth radius of activity pronates forearm Nerve supplies the median nerve through the anterior interosseous branch 87. palmaris longus originating in the medial epiondyle of humerus insertion distal half flexor retinaculum and palmaris aponeurosis action flexes the arm (at hand) and tightens palmar aponeurosis Nerve supply median n. (C7 and C8) elbow a. 88. , supinator crest & fossa of ulna, radial collateral ligament, insertion of the annular ligament into the lateral side proximal one-third radius of action supinates forearm Nerve supplies deep radial nerve 90. Muscle origin Insertion artery nerve activity antagonist pronator humeral head: radius elbow mean pronation Supinator teres medial arteries and nerve forearm, flexes muscle epicondyle radial elbow humerus artery (common flexor tendon) ulnar head: coronoid process elbow medial palmar elbow mean arm flexor Extensor longus epicondyle of aponeurosis artery nerve carp humerus radialis (total brevis, flexor tendon) carpi radialis longus, Extensor carpi ulnaris 91. flexor bones Extensor tendon) carpi radialis longus muscle flexor carpi medial pisiform ulnar artery muscle sums armal flexor ulnaris epicon blood carpi ulnaris branches shoulder elbow nerve muscle (total flexor tendon) flexor medial phalanx ulnar arteries mean nerve flexor of the extensor digitorum epicondyle finger digitorum superficial shoulder (mainly at the muscle (total proximal flexor interlangpha tendon), as eal joints) as eal joints) as part of the radius and elbow. 92. Deep Muscle Origin Insertion arterial nerve action antagonist pronator medial, uterine lateral, abdominal middle pronates forearm Supinator quadratus surface surface interosseous nerve muscle ulna radius artery (anterior inteross nerve) flexor ulna distal phalanges anterior median flex arm, Extensor digitorum interosseous (anterior interphalangeal joints digitorum profundus artery interosseous muscle), muscle branches ulnar flexor pollicis middle 2/4 base anterior Anterior Bending thumb Ekstensora long dis the surface of the trianguan phalanx interosseous interosseous pollicis volar [disambiguation thumb artery nerve longus required] (branch of muscle, radius and mean extensor adjacent to the nerve) (C8, pollicis interosseus T1) brevis membrane. (Also muscle sometimes has a slight origin of the slightly medial epicondyle of ulna.) 93. Muscles are largely associated with bending and pronation. Superficial muscles have their origin on the common flexor tendon. Ulna's nerve and artery are also located in this compartment @@@@@ 94. Poster compartment 95. abductor pollicis longus origin in the middle one-third of the posterial surface radius, interosseous membrane, mid-part posterolateral ulna Insertion of the radial side of the base of the first metacarpal action abducts thumb at the carpometacarpal joint nerve supply radial nerve, deep branch 96. Brachioradialis originated in the upper two-thirds of the lateral supracondylar ridge of the shoulder Insertion of the lateral side of the base styloid process radius Operation flexes the elbow, assisted by pronation and supination Nerves supply radial nerve 97. Brachioradialis, a flexor forearm, is unusual because it is located in the back compartment, but it is actually a cest part of the forearm. 98. extensor carpi radialis longus Origin lower third of the lateral supracondylar ridge of the shoulder Inserting dorsum second metacarpal bone (base) Operation extends the arm; abducts hand nerve supply radial nerve 99 extensor carpi radialis brevis origin common extensor tendon (lateral epicondyle of humerus) insertion dorsum third metacarpal bone (base) widens the wrist; abducts the hand Nerve supplies deep radial nerve 100. adducts hand nerve supply deep radial nerve 101. the insertion of digital nerves to the insertion of deep radial nerves 102 extensor digitorum origin of the total extensor tendon (lateral epicondyle of the shoulder) extensor expansion digits 2-5 extends metacarpophalangeal, proximal interphalangeal and distal interphalangeal joints 2-5 digits; widens the palm of the deep nerve supply to the radial nerve 103. both tendons insert extensor expansion action extends the index finger at the metacarpophalangeal, proximal interphalangeal and distal interphalangeal joints Nerve supply deep radial nerves 104. extensor pollicis longus Origin interosseous membrane and middle part posterolateral surface ulna insertion base distal phalanx of thumb action extends thumb at interphalangeal joint nerve supply deep radial nerve 106. Upper extremity nerves Radial nerve Medial nerve Elnarna nerve 107. RADIAL NERVE Radial nerve occurs as a terminal branch of the posterior cord of the brachial plexus. It passes through the hand, first in the rear compartment of the hand, and later in the rear compartment of the hand, and will continue in the rear compartment forward. 108. In the hand of the Brahial plexus, it travels posteriorly through what is often referred to as a triangular interval (US) or triangular space axilla (UK). The radial nerve enters the armpit artery/brachial artery, and then travels posteriorly on the medial side of the arm. After at the branch long and medial head triceps brachii, it enters the groove on the shoulder, radial groove. Along with the deep shoulder artery, the radial nerve winds around the groove (between the medial and lateral head triceps) on the forearm, running laterally on the posterior aspect of the shoulder. Being in the groove, it gives at the branch side head triceps brachii. The radial nerve stems from the groove to the lateral aspect humerus. At this point, it pierces the lateral intermuscular partition and enters the plategs compartment of the hand. It continues its journey inferiorly between brachialis and brachioradialis muscles. When the radial nerve reaches the distal part of the shoulder, it goes to the side epicondyle and continues forearm 109. Branches/Inerration follows are branches/inertration of the radial nerve (including a superficial branch of the radial nerve and a deep branch of the radial nerve/posterior interosseous nerve). Skin skin inerration provides the following nerves: Posterior skin nerve arm (comes axilas) Inferior lateral skin nerve arm (coming hand) Poster skin nerve forearm (comes with hand) Posterior breath (comes with hand) Superficial branch radial sensory inervation provides nerve sensory inervation much at the back of the arm, 110 transverse autopsy between thumb and forefinger at the ends of the distal radius and elbow. 111. Forearm In aearm it branches into a superficial branch (mainly sensory) and deep branch (mainly motor). The superficial branch of the radial nerve descends into the forearm under the brachioradialis. It eventually pierces the deep band at the back of the arm. The deep branch of the radial nerve pierces the supinator muscle, after which it is known as the posterior interosseous nerve. 112. Motor muscle branches radial nerve: Triceps brachii Anconeus Brachioradialis Extensor carpi radialis longus Deep branch radial nerve: Extensor carpi radialis brevis Supvis Supvis Supinator Posterior interosseous nerve (Extensor carpi radialis brevis Supvis Supinator Posterior interosseous nerve sequel deep branch after supinator): Extensor digitorum Extensor digiti minimi Extensor carpi ulnaris Abductor pollicis longus Extensor pollicis brevis Extensor pollicis longus Extensor indicis 113. The median nerve is obtained from the lateral and medial cordbrachybrahial plexus. Disc herniations in the spinal cord (level C5-C8 and T1) can cause numbness and/or reduced adhesion strength in the arm 114 mid nerve courses with brachial arteries in the medial side of the arm between biceps brachii and brachialis. At first the lateral to the artery then crosses anteriorly to run the medial artery of the distal arm and into the cubital fossa. 115. The average nerves arise from the cubital fossa and go between the two heads of the pronator teres. It then travels between flexor digitorum superficial and flexor digitorum profundus before appearing between flexor digitorum superficialis and flexor carpi radialis 116. Unbranched part of the middle nerve innervates the muscles in the superficial and intermediate group abdominal compartment, except flexor carpi ulnaris 117. The average nerve does give away two branches as it courses through the skins: The plates interosseous branch courses with abdominal mediator arteries and innervates all muscles from the abdominal compartment parearm, except flexor carpi ulnaris and medial (elbow) half flexor digitorum profundus. They end with their inertation pronator quadratus. The palmar skin branch of the middle nerve occurs in the distal part of the forarm. It delivers sensory inervation to the side aspect of the skin palm (but not the digits). 118. The middlener (upper) item of the scattering hands does not have a voluntary motor or skin function. It gives vascular branches to the wall of the brahtal artery. These vascular branches carry sympathetic fibers. Forearm It innervates all flexors with forearm except flexor carpi ulnaris and that part of the flexor digitorum profundus that supplies the medial two digits. The last two muscles supply the elbow nerve (especially the muscle branches of the elbow nerve). The main part of the middle nerve supplies the following muscles: Superficial group: Pronator teres Flexor carpi radialis Palmaris longus Intermediate group: Flexor digitorum superficialis muscle Theterior interos fungal branch of the middle nerve supplies the following muscles: Deep group: Flexororu digitm profundus (only side side) Flexor pollicis longus Pronator quadratus 119. MEDIANE NERVE BRANCHES IN THE ARM The middle nerve enters the arm through the carpal tunnel, deep into the flexor retinaculum along with the flexor digitorum of the superficial tendons , flexor digitorum prorumfundus, and flexor pollicis longus. From there it is sent at several branches: 1. Repeated branch to muscles in the thenar compartment (the periodic branch is also called a million dollar nerve)[1] 2. Digital skin branches the common wrist digital branch and proper wrist digital branch of the middle nerve that supplies: a) lateral (radial) three and a half digits on the wrist side b) the index, middle and ring finger to the dorsum of the arm Medium nerve supply motor inerration to the first and second semi-shattering muscles. 120. Hand in hand, the average nerve supplies motor inerration to the 1st and 2nd sly muscles. It also supplies muscles to thenar eminence with a repetitive thenar branch. The rest of the inner muscles of the arm delivers the elbow nerve. 121. The muscles of the arm provided by the middle nerve can be remembered using mnemonic, loaf for Lumbricals 1 & 2, Opponenslicis pollicis, Abductor pollicis brevis and flexor pol brevis. 122. The middle nerve inert the skin of the wrist side of the thumb, index and middle finger, half of the ring finger, and the nail bed of these fingers Opponens pollicis muscle is innervated with only the middle nerve. The inability to firmly hold an object between the index finger and thumb is a classic sign of median nerve pathology. 123. The lateral part of the wrist is supplied by the skin branch of the middle nerve, which is proximally left proximally to the folds of the wrist. This wrist skin branch moves in a separate groove next to flexor carpi radialis and then superficial flexor retinaculum. Therefore, it is spared carpal tunnel syndrome. 124. ULNAR NERVE IN THE ARM THE ELBOW NERVE COMES FROM THE MEDIAL WIRE IN THE SHOULDER PLEXUS, AND DESCENDS TO THE POSTEROMEDIAL ASPECT OF THE SHOULDER. It passes behind the medial epicondyle, through the cubital tunnel, at the elbow forearm It enters the front (flexor) compartment forearm through the two-headed flexor carpi ulnaris and passes alongside the ulna. There it supplies one and a half muscles (flexor carpi ulnaris & medial half flexor digitorum profundus). It soon joins the arteries in the elbow, and the two travel inferiorly together, deep flexor carpi ulnaris muscle. In forearm it lays the following branches:[2] Muscle branches of the elbow nerve branch of the elbow nerve Dorsal nerve 125. Hands After it travels down the ulna, the elbow nerve enters the palm hand. The elbow nerve and arteries pass superficial to the flexor retinaculum, through the elbow canal, the course of the elbow nerve through the wrist contrasts with that of the median nerve that travels deep into the flexor retinaculum of the arm and therefore through the carpal tunnel in the hand ulnar nerve gives a superficial branch of the ulnar nerve Deep branch ulnar nerve 126. Carpal bones 1. scaphoid metacarpal bones 2. triquetrum 10. V 7. capitate 8. •flexor retinaculum (FR) •1 scaphoid •2 trapezoidal nerve •3 pisiform tendons flexor digitorum superficialis •4 hamate tendons flexor digitorum profundus tendon flexor pol longlicisus tendons flexor carpi radialis 129. Muscles hand From superficial to Deep inner muscles the hand can be arranged in three groups either to the region or to the depth. Regional groups of muscle irar and hypothenar group. Thenar muscles are three number and handle the thumb. Hypothenar group has three number and handle the small finger. Ramainder muscles can be deployed from superficial to deep, as shown in the diagrams below. When the palm of the palm of the aponeurosis is removed, the first layer consists of a flexor digitorum of superficial tendons. This and other layers are shown below. 130. Palmar aponeurosis Lumbricals Flexor digitorum superficialis 131. Palmar interossei Back interossei 132. The superficial arterial arc is formed mainly from the elbow artery and is completed by a superficial branch of the radial. This completion is not always present or can be very small. The deep arteries of the arteries are formed mainly by the deep branch of the radial artery and are completed by the deep branch of the elbow artery. 133. Back vein plexus in the arm and its bone (1) and basilistry (2) veins drain the superficial from the hand. The cefalu vein enters the armpit vein just before it becomes subclavian and the basil vein joins the brachial vein to become an armpit vein. 134. Dorsum of the back of the arm antebrachial skin skin dorsum hand skin dorsum thumb and radial nerve 2 1/2 digits, as far as the distal interphalangeal joint of the elbow 1 1/2 digits and the elbow nerve nerve adjacent to the dorsum of the arm 135. palm hand sensors on the skin ulnar 1 1/2 digits motor muscles hypothenar eminence ulnar nerve motor ulnar two lumbricals motor up to 7 interossei motor adductor pollicis muscles sensors to skin wrist aspect thumb and 2 1/2 digits including skin on back aspect of the middle nerve distal phalange motor muscles thenar eminence motor radial two lumbrical muscles 136. abductor digiti minimi proximal phalanx little pisiform ulnar bothbuilding little finger (hypothenar muscle) finger flexor digiti minimi flexor retinaculum object to the little finger on the 5 metacarpal elbow (hypothenar muscle) hook hamate other digits in the medial side of the 2 adducts indexbefore wist interossesus I medial base indexbefore ulnar metacarpal to middle finger side side 4 adducts ring finger interosseous II side base ring finger elbow metacarpal on middle finger side side 5 adducts little finger interosseous III medial base small finger elbow metacarpal to middle finger side side aspect exten surrepate ring finger away back interosseous I ulnar metacarpal bone expansion ring finger from middle finger adjacent to sides medial aspect extensor abducts middle finger lateral II elbow metacarpal bone enlargement middle finger away from its long axis adjacent sides lateral aspect of extensor ab the middle finger interosseous III ulnar metacarpal bones widening middle toe away from long index finger next to sides lateral aspect extensor back interosseous IV ulnar away from the middle metacar bones extension indexbefore finger flex tendon flex no flex no flex or lateral aspect extensor metacarpophalangeal joint lumbricals I & II mean digitorum superficial extension extend interphalangeal joint flex tendon flex tendon flexor lateral aspect extensor metacarpophalangeal joint lumbricals III & IV ulnar digitorum superficialis extension extend the interphalangeal joint 137. superfic