Department of Biomedical Sciences
Physiotherapy Degree Programme
Palpatory Anatomy Practices and Mobilisation Techniques Syllabus

Academic year 2020-2021. Academic term: first and second semester of the first year

Palpatory anatomy practices and mobilisation techniques (3 ECTS)	
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Objectives	The Palpatory Anatomy and Mobilisation module aims to provide essential knowledge of anatomical landmarks in order to learn how to evaluate joints and mobilise body segments and to facilitate the observation of normal and pathological movement. The workshop will be carried out while studying anatomy, so that some of the notions learnt can be recognised in the human locomotor system. The technical skills acquired will enable the student to recognise the different structures of the locomotor system; through these skills the student will be able to apply manual therapy techniques.
Teaching methods	Guided practical workshops. The teaching material will be available on the Hunimed LMS website. At the end of each lesson, questions concerning the topics covered will be discussed and answered.
Teaching material	Slides presented in class, available for physiotherapy students on LMS. Serge Tixa "Atlante di anatomia palpatoria di collo, tronco e arto superiore. Ispezione manuale di superficie" e " Atlante di anatomia palpatoria dell'arto inferiore. Ispezione manuale di superficie" edizioni 2013, Elsevier Bernard Reichert "Anatomia palpatoria applicata alla clinica riabilitativa" edizione italiana 2013 UTET.

Content

1) Explanation of the course objectives and introduction to the basic concepts of body movement. Classical mechanics: static, kinetic, kinematics and arthrokinematics: Limits and barriers, parameters to be evaluated. Quality, quantity, crepitus, pain, end-feel. Planes and axes of movement → frontal, horizontal and sagittal. Degrees of freedom. Movements (roll and slide, swing and glide, spin)

2) Lumbar spine
Observe and evaluate the physiological movements of the lumbar spine and conduct palpation, for which students should have knowledge of the bone and muscular structures. Structures to be palpated: Bony landmarks: iliac crests, L4-L5 interspinous space, sacrum, L5-S1 interspinous space, transverse processes. Muscles**:** paravertebral muscles

3) Dorsal spine and rib cage
Observe and evaluate the physiological movements of the dorsal spine and the rib cage and conduct palpation, for which students should have knowledge of the bone structures. Structures to be palpated: Bony landmarks: twelfth rib, T12 spinous process, T11- T12 interspinous space, T8-T7-T3-T2-T1 spinous process, costal angle, manubrium of sternum, angle of Lewis, xiphoid process, I rib, II rib, costal arch, upper ribs T2 to T5, lower ribs T6 to T10 and XI and XII rib.

4) Cervical spine
Observe and evaluate the physiological movements of the cervical spine and conduct palpation, for which the students should have knowledge of the bone and muscular structures. Structures to be palpated: Bony landmarks: nuchal plane, occipital protuberance, superior nuchal line, inferior nuchal line, mastoid process, C1 transverse process, C2 spinous process, middle cervical vertebra spinous process, spinous processes T1 to T4. Muscles: scalene, sternocleidomastoid, levator scapulae and trapezius.

5) Temporomandibular joint
Observe and evaluate the physiological movements of the temporomandibular joint and conduct palpation, for which the students must have knowledge of the bone, muscular and ligamentous structures. Structures to be palpated: Bony landmarks: temporal bone, mandibular condyle. Muscles: masseter, medial and lateral pterygoid, temporal, digastric.

6) Shoulder and scapula
Observe and evaluate the physiological movements of the shoulder and scapula and conduct palpation, for which the students should have knowledge of the bone, muscular and neural structures. Structures to be palpated: Bony landmarks: suprasternal notch, sternoclavicular joint, clavicle, coracoid process, acromioclavicular joint, acromion, greater tuberosity, bicipital groove, lesser tuberosity, spine of the scapula, superior angle of the scapula, inferior angle of the scapula, lateral margin and vertebral border of the scapula. Soft tissue: rotator cuff, pectoralis major, latissimus dorsi, serratus anterior, biceps brachii, deltoid, trapezius, rhomboids, teres major muscle, triceps brachii. Nerves: median, ulnar, radial.

7) Elbow
Observe and evaluate the physiological movements of the elbow and conduct palpation, for which students should have knowledge of the bone, muscular and neural structures. Structures to be palpated: ANTERIOR Bony landmarks: medial epicondyle, ulnar border, epicondyle, radial head. Soft tissue: biceps brachii, brachioradialis, pronator teres, flexor carpi radialis, palmaris longus, flexor carpi ulnaris. POSTERIOR Bony landmarks: medial epicondyle, olecranon, ulnar border, olecranon fossa, ulnar nerve groove, epicondyle, radial head. Soft tissue: triceps brachii, extensor carpi radialis longus and brevis, extensor carpi ulnaris and extensor digitorum.

8) Wrist and hand
Observe and evaluate the physiological movements of the wrist and hand and conduct palpation, for which students should have knowledge of the bone, muscular, ligamentous and neural structures. Structures to be palpated: DORSAL PART Bony landmarks: Lister's tubercle, radial and ulnar styloid, anatomical snuffbox, scaphoid, trapezius, trapezoid, capitate, lunate, pyramidal, ulnar styloid. Soft tissue: anatomical snuffbox extensor carpi radialis longus and brevis, extensor pollicis brevis, extensor digitorum communis, extensor indicis, extensor digiti minimi, extensor carpi ulnaris. PALMAR Bony landmarks: pisiform, hamate bone. Soft tissue: palmaris longus tendon, flexor carpi radialis, transverse carpal ligament.

9) Hip and pelvis
Observe and evaluate of the physiological movements of the hip and pelvis and conduct palpation, for which the students should have knowledge of the bone, muscular, ligamentous and neural structures. Structures to be palpated: POSTERIOR PART Bony landmarks: iliac crest, posterior superior iliac spine, ischial tuberosity, greater trochanter, Michaelis dimples, S1-S2, median sacral crest and long dorsal ligament. Tendons: common hamstring mm. Nerves: sciatic or ischiadic nerve.
ANTERIOR PART Bony landmarks: pubic symphysis, anterior superior iliac spine, pubic tubercle,

iliac tubercle, iliac crest. Ligaments: inguinal ligament. Tendons: sartorius, tensor fascia latae, adductor longus, rectus femoris, pectineus. Muscles: piriformis. Nerves: femoral nerve. Arteries: femoral artery. Veins: femoral vein.

10) Knee

Observe and evaluate the physiological movements of the knee and conduct palpation, for which the students should have knowledge of the bone, muscular, ligamentous and neural structures. Structures to be palpated: ANTERIOR PART Bony landmarks: patella, anterior tibial tuberosity, tibial plateau, femoral condyles. Ligaments: patellar retinaculum, patellar ligament, coronary ligaments or meniscotibial ligaments. MIDDLE PART Bony landmarks: medial epicondyle of the femur, adductor tubercle, Pes anserinus insertion. Ligaments: medial collateral ligament, tendons of the sartorius, gracilis, semitendinosus and adductor magnus. LATERAL PART Gerdy's tubercle, head of fibula, lateral epicondyle of the femur. Ligaments: Lateral collateral ligament. Tendons: iliotibial tract and biceps femoris. Nerves: common peroneal nerve.

11) Ankle and foot

Observe and evaluate the physiological movements of the foot and ankle and conduct palpation, for which students should have knowledge of the bone, muscular, ligamentous and neural structures. Structures to be palpated: MEDIAL PART Bony landmarks: medial cuneiform, tubercle of the scaphoid, medial malleolus, talus, sustentaculum tali, I metatarsal. Soft tissue: deltoid ligament, posterior tibial tendon, anterior tibial tendon

LATERAL PART Bony landmarks: base of V metatarsal, cuboid, lateral malleolus, neck of talus. Soft tissues: ATF ligament, calcaneofibular ligament, peroneal and posterior talofibular ligament.

DORSAL PART Bony landmarks: anterior border of the tibial epiphysis, neck and head of the talus. Soft tissue: AITF ligament. PLANTAR PART Bony landmarks: cuboid. POSTERIOR PART Bony landmarks: Malleolus profiles, posterior side of the calcaneus. Soft tissue: PITF ligament and Achilles tendon.

12) Palpation and mobilisation of the main nerves of the limbs

Upper limb: median, radial and ulnar nerves.

Lower limb: sciatic and femoral nerves.

Examination for the palpatory anatomy practices and mobilisation techniques course. The skills acquired through palpatory anatomy **practices** and mobilisation techniques will be assessed through a practical examination as part of the Physics and Kinesiology examination (Chairman of the Examination Committee: Prof Roberto Gatti).