

ORTHOPAEDIC SURGERY AND TRAUMATOLOGY:

SPANISH CURRICULUM

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SUMMARY

3. DEFINITION

Medical specialty dedicated to prevention, clinical evaluation, diagnostic, conservative treatment, surgical treatment and follow-up until complete functional recovery of congenital, traumatic, infectious, tumoral, metabolic, degenerative, developmental and functional disorders of the locomotor system and associated structures.

5. SPECIFIC CONTENTS

5.1. KNOWLEDGES

5.1.1. Prevention, diagnostic, and treatment of disorders of locomotor system

- Not included a detailed index
- Individual study: use of standard textbooks
- Clinical sessions: structured, open presentation of clinical cases
- Bibliographic sessions: public presentation (to all the Department) of up-to-date topic selected according to a structured inclusive program
- Attendance to local, national and international Courses, Symposia and Congresses as organized by Tutor and Chairman

5.1.2. Scientific bases of the specialty

5.1.2.1. Structure, function, repair, cellular and molecular biology, immunology and genetics of bone tissue, physis, cartilage, synovial membrane, menisci, tendons, ligaments, muscles, nerves and vessels of locomotor system.

5.1.2.2. Biomechanics and biomaterials. General principles, biomechanics of bone and joints, biomechanical principles of treatment. Types and characteristics of biomaterials: metals, ceramics, polymers, local and systemic reaction to biomaterials. Principles of design of arthroplasties.

5.1.2.3. Physiopathology of systemic disorders of locomotor system and associated structures: metabolic and endocrine, blood-borne, mesodermic tumors, infections, inflammatory and autoimmune, degenerative, genetic, dysplasias, neuromuscular.

5.1.2.4. General principles of associated treatments: oncologic chemotherapy and radiotherapy, antimicrobial prophylaxis and treatment, blood products, thromboembolic diseases, inflammation, acute and chronic pain release, physiotherapy, orthosis and exoprosthesis

5.1.2.5. Diagnostic tools: laboratory, image (ultrasonography, CT, MRI, densitometry)

5.1.3. Clinical practice

Clinical management, health management, ethics, legal aspects, computers, technical English.

5.2. SKILLS

5.2.1. General skills

Preoperative management, anesthetic techniques and indications, surgical approaches for locomotor system, postoperative control, diagnosis and treatment of complications, pain treatment, critical patient

5.2.2. Specific technical skills

5.2.2.1. Level A: must be able to manage and practice independently:

a) Acute disorders:

- non-surgical treatment of bone and joint trauma in any age
- ORIF of common fractures, compartmental syndrome, other frequent post-trauma and post-surgical complications

- locomotor system infections
- inflammatory and/or painful disorders of bones, joints, soft tissues and peripheral nerves

b) Non-acute disorders:

- prevention
- osteoarthritis management
- chronic infections
- osteopenia and complications
- frequent deformities
- sport and work overuse syndromes

c) Basic surgical skills:

- spine: simple discectomy, urgent medullary lesions
- upper limb: clavicle fractures and dislocations, acute and recurrent shoulder dislocations, scapula fractures, humeral fractures, forearm fractures, wrist fractures and dislocations, tendon lacerations, compartmental syndromes, subacromial impingement, acromioclavicular degenerative process, nerve compression syndromes, elbow and wrist tendinitis, Kienböck, hand infections
- lower limb: initial pelvic stabilization, hip fractures, diaphyseal fractures of femur and tibia, fractures around the knee, meniscus and ligament lesions in the knee, fractures and dislocations of ankle and foot, degenerative and inflammatory disorders of hip and knee, patellofemoral disorders, common deformities of children, painful ankle and foot, hallux valgus, lesser toes deformities, flat foot, amputations

5.2.2.2. Level B: must have good knowledge and must have participated:

a) Acute disorders:

Polytrauma, spinal traumatic lesions, vascular traumatic lesions, severe open fractures, severe hand trauma, flexor tendons lacerations in the hand

b) Chronic disorders:

Hip dysplasia, talipes equino-varus, children hip disorders, common hip and knee revision arthroplasty, surgery of the rheumatoid arthritis, short spinal fusions, non-unions, joint fusions, limb length discrepancy, knee arthroscopy, Dupuytren

5.2.2.3. Level C: must have knowledge and must have seen:

Dysplasias, congenital malformations, complex hip and knee revision arthroplasty, arthroplasties in other joints, limb-conservation tumor surgery, spinal deformities, pelvic osteotomies, sequelae of neurologic diseases, reconstructive hand surgery

5.3. ATTITUDES

5.3.1. Definition of professional characteristics

- High level of medical ethics
- Continuous acquisition and renewal of knowledge
- Continuous training of skills
- Compromise and service to society

5.3.2. Recognizing and progressive acquisition of professional characteristics

5.3.3. Specific aspects

- a) Patient oriented attitudes: willing to define and solve clinical, personal and social problems of patient; communication abilities
- b) Compromise with Hospital, with Department and with training
- c) Ability to collaborate with all other professionals
- d) Dedication, availability, punctuality, personal performance and progression
- e) Flexibility for changing environments and colleagues
- f) Respect for patient: ethics, autonomy, cultural characteristics, ideology, privacy, confidentiality
- g) Ability to take decisions according to level of knowledge and skills
- h) Rational use of available resources considering benefit/cost ratio, social justice and equity

5.4. RESEARCH

5.4.1. Training for all residents

- Data observation, collection and critical analysis
- Hypothesis elaboration
- Scientific method

5.4.2. Support for those interested

- Doctoral courses
- Doctoral thesis
- Obtaining PhD

5.4.3. Compulsory courses / seminars / tutorships

- a) Evidence-based medicine: clinical problems (etiology, diagnostics, prognostic, treatment), bibliography search, critical analysis of published papers, application of published evidence to specific problem
- b) Epidemiology and statistical analysis: design, type of study, sampling, statistical significance, sensitivity, specificity, reproducibility
- c) Outcome results, patient-oriented results

5.5. TEACHING

- Collaboration in practical teaching for pre-graduate students
- Recognition of teaching activities

6. PROGRAMME

6.1. RECOMMENDED EXTERNAL ROTATIONS

3 months dedicated to each one of them

6.1.1. Anesthesiology

- Critical patient, polytrauma
- Endotracheal intubation, thoracocentesis, intravenous access to central veins
- Loco-regional anesthesia
- Pain management
- Preoperative evaluation

6.1.2. Vascular surgery

- Acute and chronic vascular injuries
- Vascular surgical approaches in the limbs
- Principles and management of vascular injury repair
- Deep vein thrombosis: diagnostic and treatment
- Diabetic foot
- Amputations for vascular injuries

6.1.3. Plastic Surgery

- Management of skin and other soft tissue injuries
- Sutures: types and techniques
- Soft tissue cover: rotation, translation and free flaps
- Burn injuries: physiopathology, acute and initial treatment

6.2. OPTATIVE EXTERNAL ROTATIONS

Up to 2 months dedicated to each one of them

6.2.1. General and Digestive Surgery

- Abdominal trauma: evaluation and first-line treatment
- Anterior approaches to spine

6.2.2. Oral and Maxillofacial Surgery

- Facial trauma: evaluation and first-line treatment
- Basics of tissue reconstruction

6.2.3. Thoracic Surgery

- Thoracic trauma: evaluation and first-line treatment
- Anterior approaches to spine

6.2.4. Rehabilitation, Physical Medicine

- Therapeutic options: physiopathology, indications, outcomes
- Orthosis and external prostheses
- Disability

6.2.5. Neurosurgery

- Central nervous system trauma: evaluation and first-line treatment
- Neoplastic diseases in the central nervous system: evaluation and principles of treatment
- Cerebrovascular diseases: evaluation and principles of treatment

6.2.6. Neurology

- Physical Exploration, Semiology
- Neurologic diseases with locomotor importance

6.2.7. Rheumatology

- Medical diseases of locomotor system: diagnostic procedures, treatment

6.3. RADIOLOGICAL PROTECTION

According to European Guide "Radiological Protection 116"

Total number of hours: from 8 to 14

- a) Ionizing radiation: Atomic structure, generation and interactions
- b) Radioactivity
- c) Physical characteristics of X-ray and Radiotherapy medical equipments
- d) International measures and magnitudes for ionizing radiation
- e) Detection of ionizing radiation
- f) Biologic effects of ionizing radiation
- g) Principles of radiological protection
- h) Quality control
- i) Spanish and European Laws for ionizing radiations
- j) Radiological protection: practical measures
- k) Radiological protection for patients
- l) Radiological protection for workers

6.4. ROTATION WITH GENERAL PRACTITIONERS

Compulsory, development and structure pending

6.5. EMERGENCY DEPARTMENT

From 4 to 6 days "on-duty" every month

6.6. DISTRIBUTION ALONG TIME

- Total time for accomplishing the programme: 5 years
- First and second year: 9 months dedicated to Orthopaedic Surgery, 3 months dedicated to “recommended external rotations”
- Third and Fourth year: from 8 to 10 months dedicated to Orthopaedic Surgery, from 2 to 4 months dedicated to “optative external rotations”
- Fifth year: 12 months dedicated to Orthopaedic Surgery, but 3 of them highly recommended to rotate in a prestigious Orthopaedic Department of a foreign country, or, if this is not possible, at least in a prestigious Spanish Orthopaedic Department