

Professional Master's Degree

Locoregional Anesthesia





Professional Master's Degree Locoregional Anesthesia

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/professional-master-degree/master-locoregional-anesthesia

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01

Introduction

The application of Locoregional Anesthesia, beyond the surgical field as a therapy for effective pain management, has contributed to millions of patients being able to enjoy a normal life. Nevertheless, it is a very complex clinical area, whose treatments derive in an endless number of harmful side effects for the health depending on the physiology of each person or the characteristics of the pathology he/she suffers from. Therefore, anesthesiologists must be constantly updating their practice and knowing the advances that are being made in the management of different drugs depending on the type of patient, something that they can work on in a comprehensive and intensive way with this very complete 100% online program.





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TECH introduces a program specialized in Locoregional Anesthesia so that you can work on updating your clinical practice from wherever you want, thanks to its convenient 100% online format”

The palliative treatment of herniated discs, lumbar, inguinal, femoral, etc.; the reduction of pain in people suffering from diseases associated with the muscle and bone region; or the inhibition of the nerve root of the different areas in which a surgical intervention is to be performed, are the main areas of action of Locoregional Anesthesia. This is a medical specialty whose progress has helped thousands of people to improve their quality of life, through a considerable reduction of the discomforts they suffered in previous centuries. A quite significant example of this technique is the cervical or neuroaxial blocks, in which the vertebral facets are targeted through minimally invasive anesthetic therapies that contribute to a significant reduction of pain.

However, as in General Anesthesia, this type of procedures must be subject to an exhaustive control of the techniques, as well as of the considerations to be taken into account to avoid side effects harmful to health depending on the type of patients (children, elderly, people with various pathologies, pregnant women, etc.). For this reason, TECH Global University has developed a complete program with which, in just 12 months, you will be able to get up to date on all clinical and therapeutic developments in Locoregional Anesthesia. This Professional Master's Degree will cover from the most innovative therapies to non-invasive clinical and surgical strategies for the different body regions. Furthermore, it will focus on pain-inhibiting palliative care in various types of patients, taking into account their physiological characteristics. All of this is based on the use of the latest drugs that have been tested with guarantees and are applicable at an international clinical level.

In order to achieve this, the professional will have 1,500 hours of theoretical and practical material, designed exclusively for this degree by a teaching team specialized in Anesthesiology, Resuscitation and Pain Therapy. Moreover, its convenient 100% online format will allow you to update your practice from wherever and whenever you want, in a way that is compatible with your professional activity. Therefore, it is a unique opportunity to work on perfecting your medical skills with the endorsement of the largest medical faculty in the world.

This **Professional Master's Degree in Locoregional Anesthesia** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Practical cases presented by experts in Locoregional Anesthesiology
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where self-assessment can be used to improve learning.
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



You will work on the latest developments in the application of anesthesia in the upper extremities, lower extremities, head and neck, delving into the most innovative clinical strategies for each case"

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Would you like to get up-to-date on what's new in Major Outpatient Surgery for anesthesiologists? If the answer is yes, this program is perfect for you"

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education programmed to prepare in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

Due to its convenient format and the hundreds of hours of additional material included in the program, you will be able to delve into the latest advances in critical treatments through Regional Anesthesia.

A program that will give you the keys to provide pain relief to your patients, through the most effective and innovative clinical guidelines of current Anesthesiology.



02 Objectives

The progress of science and the increasingly exhaustive knowledge of the human body has allowed modern medicine to develop increasingly safe and diverse anesthetic guidelines according to the diagnostic or physiological characteristics of the patient and his or her state of health. Therefore, the objective of this Professional Master's Degree is simply to provide specialists in this area with the most complete and innovative information on the subject, which will allow them to update their practice according to the most innovative clinical strategies being applied in locoregional therapies.





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A program that meets the demands of medical activity at the highest level with which you will work on the latest developments in neuroaxial blocks and the best drugs for this purpose”



General Objectives

- ◆ Delve into the fundamentals that allow performing procedures with Regional Anesthesia
- ◆ Become familiar with the anatomy, physiology and pharmacology applied to regional anesthesia
- ◆ Study in detail the types of central blocks, as well as their indications, contraindications, technical aspects and complications
- ◆ Study in detail the types of peripheral blocks, as well as their indications, contraindications, technical aspects and complications
- ◆ Review limb, head, neck, chest and abdominal blocks, as well as those useful for difficult airway management
- ◆ Review the basic fundamentals of electrostimulation and ultrasound and apply them to the execution of blockades
- ◆ Be familiar with the equipment necessary to perform the blocks
- ◆ Know in detail the current clinical practice guidelines for the preoperative management of patients requiring regional anesthesia
- ◆ List the particularities of outpatient surgery requiring Regional Anesthesia





Specific Objectives

Module 1. Regional Anesthesia

- ◆ Understand the basics of ultrasound to apply it in regional blocks
- ◆ Understand the fundamentals of neurostimulation to apply it to regional blockades
- ◆ Know in detail the characteristics, pharmacokinetics and pharmacodynamics of local anesthetics and adjuvants used in Regional Anesthesia
- ◆ Identify local anesthetic poisoning, know its cause and risk factors and, of course, its management and treatment
- ◆ Understand the importance of the pre-anesthesia consultation in regional anesthesia and what aspects of the clinical history are important

Module 2. Neuroaxial Blocks

- ◆ Acquire the knowledge of anatomy and physiology related to neuroaxis blockages
- ◆ Identify the different types of neuroaxial blocks and establish their indications and contraindications
- ◆ Become familiar with the pharmacology applied to neuroaxial blockades
- ◆ Learn the technique, the effects on the organism, the necessary material and the management of spinal, epidural, combined, caudal and paravertebral blocks
- ◆ Delve into the role of ultrasound in such blockages

Module 3. Upper Limbs

- ◆ Identify the different blocks that can be performed on the upper extremity and their main indications and contraindications
- ◆ Instruct in the different responses to neurostimulation obtained in the different upper extremity blockades
- ◆ Become familiar with the ultrasound image obtained in the different upper extremity blocks

Module 4. Forelimbs

- ◆ Identify the different blocks that can be performed on the lower extremity and their main indications and contraindications
- ◆ Learn about the different responses to neurostimulation obtained in different lower extremity blockades
- ◆ Become familiar with the ultrasound image obtained in the different lower extremity blocks

Module 5. Thoraco-abdominal interfascial blocks

- ◆ Know in a profound way the anatomy of the thoracic and abdominal wall, distinguishing what will be blocked with each regional technique
- ◆ Learn how to visualize, by means of ultrasound, the different muscle groups
- ◆ Train the professional in the performance of interfascial blocks, knowing the puncture site and the site where the local anesthetic will be applied
- ◆ Decide what type of block is needed by the patient depending on the type of aggression that will be performed or has been performed on the patient
- ◆ Differentiate between intercostal, interpectoral, erector spinae, serratus plane, TAP, semilunar, quadratus lumborum, ilioinguinal and iliohypogastric blocks, which are part of the repertoire of analgesic techniques
- ◆ Know the efficacy and effectiveness of infiltration of the surgical wound itself

Module 6. Head and Neck

- ◆ Learn the nerve blocks of the face, head and neck, both for anesthetic techniques in the operating room and analgesia in pain units
- ◆ Become familiar with the ultrasound imaging of the various nerve blocks, as well as the response to neurostimulation
- ◆ Learn the applications of regional anesthetic technique in head and neck surgeries
- ◆ Enhance Regional Anesthesia as a complement or substitution to traditional anesthetic techniques in head and neck surgeries
- ◆ Understand the usefulness of Regional Anesthesia in the management of the difficult airway

Module 7. Major Outpatient Surgery

- ◆ Understand the organization and planning of Major Outpatient Surgery Units
- ◆ Analyze the criteria for the choice of surgical procedures, as well as the selection of patients for Major Outpatient Surgery
- ◆ Analyze the available anesthetic techniques to establish an adequate anesthetic plan for each patient and procedure
- ◆ Assess therapeutic options for optimal postoperative pain control
- ◆ Thorough knowledge of UCMA discharge criteria, as well as hospital admission criteria and possible complications

Module 8. Critical Care and Regional Anesthesia

- ◆ Review the peculiarities of the critically ill patient and their specific risks
- ◆ Know in depth the options for assessment and control of pain in the critically ill patient
- ◆ Analyze the potential uses of locoregional analgesia in the critically ill patient
- ◆ Delve into the indications of Locoregional Analgesia/Anesthesia in specific situations such as burned, polytraumatized or amputated patients
- ◆ Learn in depth the importance of locoregional techniques in reconstructive surgery with flaps

Module 9. Locoregional Anesthesia and Pain Management

- ◆ Know in depth everything related to Locoregional Anesthesia
- ◆ Have knowledge and practice of pain management of a certain level
- ◆ Provide fundamental and safety aspects, evidence-based indications, the use of more advanced imaging techniques, a meticulous description of each of the techniques based on images, algorithms and videos, as well as the resolution of doubts and difficulties that may arise in relation to them

Module 10. Specific Situations of Regional Anesthesia

- ◆ Know in depth the aspects to be taken into account in a patient with peripheral neuropathy who is going to undergo regional anesthesia
- ◆ Describe the appropriate management of the anticoagulated/anti-aggregation patient who is potentially undergoing a regional technique
- ◆ Become familiar with regional continuum techniques for the management of acute postoperative pain
- ◆ Identify the factors related to comorbidity in the face of these anesthetic techniques
- ◆ Describe the particularities of elderly and pediatric patients



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Do you want to master the application of anesthesia in limb interventions? In this TECH program you will find the most innovative techniques to achieve this in just 12 months”

03 Skills

Local anesthetic treatments require a medical practice in which there should be no margin for error due to the fatal consequences they can cause in the patient. For this reason, this Professional Master's Degree has been designed so that the specialist can perfect his or her skills in the management of the most innovative and effective treatments and strategies in the current clinical environment. This will provide confidence and security, expanding, in addition, its catalog of techniques to address the different pathologies according to the needs of each patient.





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Among the techniques that you will be able to update with this program are lumbar and femoral blocks, which will allow you to perfect your skills in the localization of the puncture site and in the response to neurostimulation”

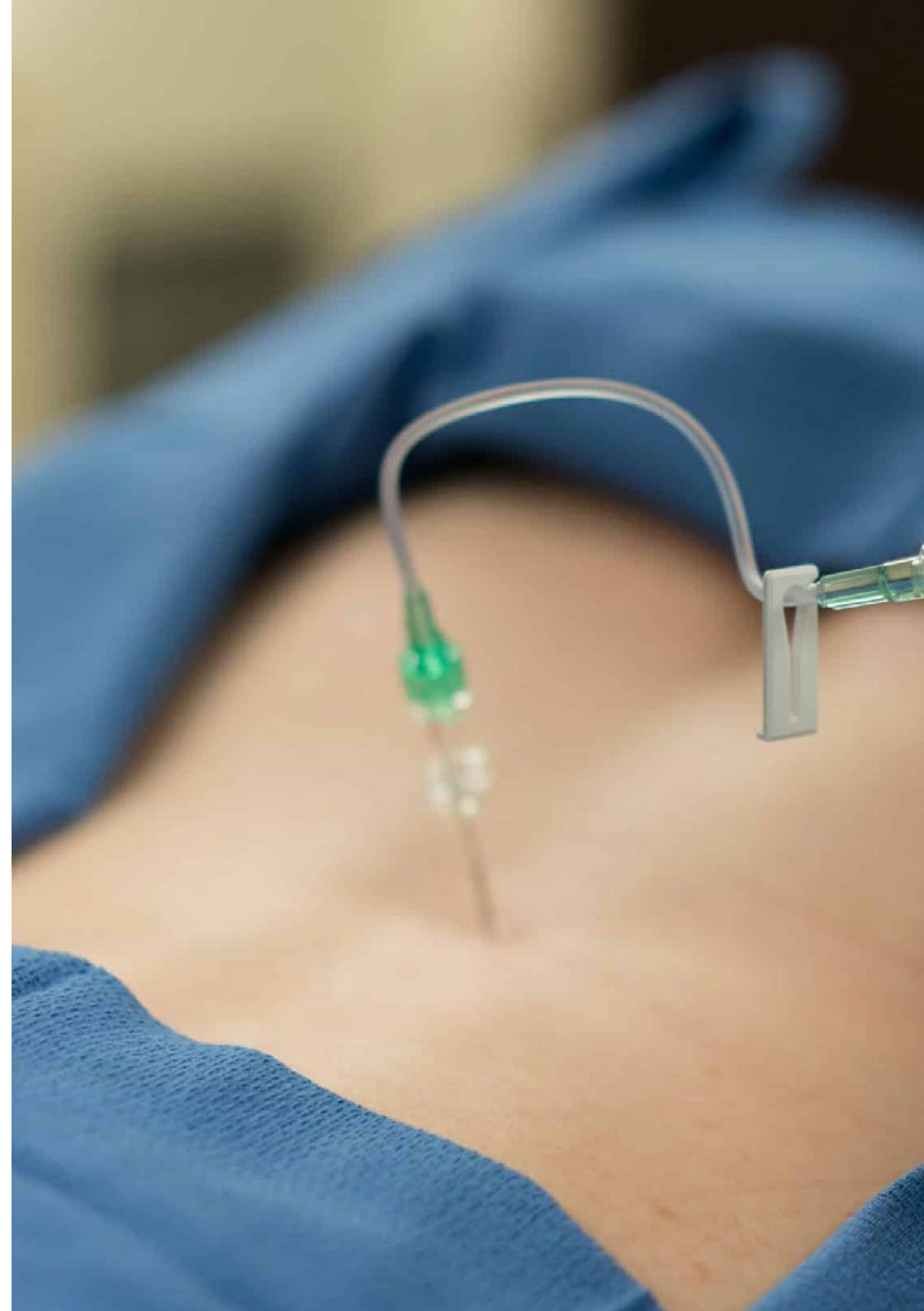


General Skills

- ◆ Delve into the role of Regional Anesthesia in the critically ill patient
- ◆ Recognize the application of Regional Anesthesia in the treatment of acute postoperative pain, as well as chronic pain
- ◆ Study the singularities of some particular situations: extremes of life (childhood, old age), pre-existing neurological diseases, as well as other specific situations
- ◆ Gain an extensive knowledge of the fundamental aspects of patient safety in Regional Anesthesia

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This Professional Master's Degree will allow you to implement in your practice the most effective strategies for the preparation of the patient in the surgical area”





Specific Skills

- ◆ Gain an extensive knowledge of the role of sedation in Regional Anesthesia
- ◆ Identify and manage the main complications of neuroaxis blockades
- ◆ Learn the anatomy of the upper extremity, as well as the characteristics of the brachial plexus
- ◆ Learn the anatomy of the lower extremity, as well as the characteristics of the lumbar plexus and sacral plexus
- ◆ Delve into the origin and evolution of interfascial blocks, understanding how the rise and standardization of new technologies have allowed their generalization and advancement
- ◆ Review the anatomy and innervation of the head and neck territories
- ◆ Emphasize the importance of maintaining adequate standards of quality and safety in health care
- ◆ Review the Utility of Ultrasound in Critical Care Units
- ◆ Learn about Interventional Medicine in chronic pain and plan practically from the beginning of the treatment
- ◆ Delve into the peculiarities of the allergic patient
- ◆ Describe and manage the general complications of regional techniques
- ◆ Acquire useful knowledge in the field of patient safety in the operating room

04

Course Management

TECH Global University is aware that having a team specialized in Locoregional Anesthesia is a significant asset that the graduate will use to make the most of the academic experience. For this reason, for this Professional Master's Degree has selected a team of experts of the highest level versed in Anesthesiology, Reanimation and Pain Therapy. This is a group of professionals who will be available to answer any questions you may have during the course of the 12-month degree program.

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A faculty experienced in Anesthesiology, Reanimation and Pain Therapy from the best hospitals will be at your disposal during the course of this Professional Master's Degree”

Management



Dr. Burgueño González, María Dolores

- ◆ FEA in Anesthesiology and Resuscitation at the HU La Paz
- ◆ Anesthesia Coordinator of Cantoblanco Hospital
- ◆ Responsible for Surgical Patient Safety at Cantoblanco Hospital
- ◆ Specialist Physician at the Virgen del Mar Hospital
- ◆ MIR in Anesthesiology, Resuscitation and Pain Therapy at the University Hospital La Paz
- ◆ Master PROANES: Official Updating Program in Anesthesiology, Resuscitation and Pain Therapy by the Catholic University of Valencia
- ◆ Postgraduate Diploma in Airway Management by the Catholic University of Valencia

Professors

Dr. Zurita Copoví, Sergio

- ◆ FEA of Anesthesiology and Resuscitation at the University Hospital La Paz
- ◆ Specialist Physician at the Virgen del Mar Hospital
- ◆ Resident Tutor at the University Hospital La Paz
- ◆ Clinical teaching collaborator at the Autonomous University of Madrid
- ◆ Master's Degree in Clinical Management, Medical and Health Care Management
- ◆ Master in Patient Management
- ◆ European Postgraduate Certificate in Anesthesia and Critical Care
- ◆ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)

Dr. Sancho De Ávila, Azahara

- ◆ Free practice anesthesiologist at La Zarzuela Hospital
- ◆ FEA of Anesthesiology and Resuscitation at the University Hospital of La Paz
- ◆ Free practice anesthesiologist at the University Hospital of La Luz
- ◆ Free practice anesthesiologist at Nuestra Señora del Rosario Hospital
- ◆ Doctor in Medicine and Surgery from the University of La Laguna
- ◆ Specialist in Anesthesiology, Resuscitation and Pain Therapy by MIR examination at the University Hospital Nuestra Señora de la Candelaria

Dr. Canser Cuenca, Enrique

- ◆ FEA of Anesthesiology and Resuscitation at El Escorial Hospital
- ◆ Specialist in Anesthesiology and Resuscitation at the University Hospital La Paz
- ◆ Residency in the Department of Anesthesiology and Resuscitation at the University Hospital La Paz
- ◆ PhD in "Neurosciences: Morphofunctional organization of the nervous system"
- ◆ Master in Pathophysiology and Treatment of Pain by the Autonomous University of Barcelona
- ◆ Master's Degree in Palliative Medicine and Supportive Care of the Cancer Patient

Dr. Salgado Aranda, Patricia

- ◆ FEA in Anesthesiology and Resuscitation at the HU La Paz
- ◆ Teaching and research experience
- ◆ Clinical Teaching Collaborator of the University Hospital La Paz
- ◆ PhD from the Autonomous University of Madrid
- ◆ Degree in Medicine from the University of Alcalá, Spain
- ◆ Master's Degree in Infectious Diseases in Intensive Care
- ◆ Member of the Illustrious Official College of Physicians of Madrid

Dr. Vallejo Sanz, Irene

- ◆ FEA in Anesthesiology and Resuscitation at the HU La Paz
- ◆ Collaborator in Clinical Simulation workshops
- ◆ MIR in Anesthesiology, Resuscitation and Pain Therapy
- ◆ European Diploma of Anaesthesiology and Intensive Care, EDAIC part I
- ◆ Member of the Illustrious Official College of Physicians of Madrid
- ◆ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)

Dr. Rodríguez Roca, María Cristina

- ◆ FEA of Anesthesiology and Resuscitation at the University Hospital La Paz
- ◆ Teaching and research experience in several university centers
- ◆ PhD from the Autonomous University of Madrid
- ◆ European Postgraduate Certificate in Anesthesia and Critical Care (EDAIC)
- ◆ Member of the Spanish Society of Anesthesiology and Pain Treatment (SEDAR)
- ◆ Member of the working group of Chronic Pain of the Spanish Society of Anesthesiology and Resuscitation

Dr. Martín Martín, Almudena

- ◆ FEA in Anesthesiology and Resuscitation at the HU La Paz
- ◆ Clinical Teaching Collaborator of the University Hospital La Paz
- ◆ MIR in Anesthesiology, Resuscitation and Pain Therapy at the University Hospital La Paz
- ◆ Master of Continuing Education in "Patient Management"

05

Structure and Content

The syllabus of this Professional Master's Degree includes 1,500 hours of the best theoretical and practical material presented in different formats: detailed videos, research articles, complementary readings and much more. All these resources have been designed by the teaching team exclusively for this program and presented in a 100% online format to guarantee an up-to-date knowledge accessible from anywhere with an internet connection. In this way, professionals in the area of Clinical Anesthesiology will not have to worry about schedules or face-to-face classes, attending an academic experience that meets not only their needs, but also the demands of Modern Medicine.



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The theoretical content of this program has been developed based on the Relearning methodology, so that you don't have to spend extra time memorizing while you improve your knowledge”

Module 1. Regional Anesthesia

- 1.1. Temporal Development
 - 1.1.1. History of Regional Anesthesia
 - 1.1.2. Historical Evolution of regional technique
 - 1.1.3. Importance of Regional Anesthesia in the 21st Century
- 1.2. Fundamentals of Anthrozoology
 - 1.2.1. Introduction
 - 1.2.2. Principles of Neurostimulation
 - 1.2.2.1. Physiology of Nerve Conduction
 - 1.2.2.2. Physical Principles
 - 1.2.2.3. Electrical Current Features
 - 1.2.2.4. Device Characteristics
 - 1.2.3. Neurostimulation Techniques
 - 1.2.3.1. Preparation Phase
 - 1.2.3.2. Location and Approach Phase
 - 1.2.3.3. Infusion Phase
 - 1.2.3.4. Implementation Phase
 - 1.2.4. Error Sources
 - 1.2.4.1. Neurostimulation
 - 1.2.4.2. Electrodes
 - 1.2.4.3. Needles
 - 1.2.4.4. Patients
 - 1.2.5. Equipment Maintenance
 - 1.2.6. The Neurostimulation Industry Today
- 1.3. Fundamentals of Anthrozoology
 - 1.3.1. Physical Principles of Ultrasound
 - 1.3.1.1. Sounds and Ultrasound
 - 1.3.1.2. Image Formation
 - 1.3.1.3. Fabric Classification
 - 1.3.2. Ultrasound Components
 - 1.3.2.1. Processing System
 - 1.3.2.2. Ultrasound/Transducers
 - 1.3.2.3. Devices
 - 1.3.2.4. Ultrasound Parameters





- 1.4. Ultrasound applied to Regional Anesthesia
 - 1.4.1. Ultrasound of fundamental structures
 - 1.4.1.1. Vessels
 - 1.4.1.2. Bone
 - 1.4.1.3. Muscle
 - 1.4.1.4. Tendons
 - 1.4.1.5. Pleura
 - 1.4.1.6. Thyroid and Trachea
 - 1.4.2. Artefacts
 - 1.4.2.1. Acoustic Shadow
 - 1.4.2.2. Posterior Acoustic Enhancement
 - 1.4.2.3. Comet Tail
 - 1.4.2.4. Refraction:
 - 1.4.2.5. Mirror Image
 - 1.4.2.6. Anisotropic Reflectors
 - 1.4.3. Systematic handling of the ultrasound scanner
 - 1.4.3.1. Probe orientation
 - 1.4.3.2. Approaches
 - 1.4.3.3. Factors Influencing Nutrition
 - 1.4.3.4. Ultrasound imaging of local anesthetics and catheters
 - 1.4.4. Preparation of an ultrasound training model
- 1.5. Local anesthetics
 - 1.5.1. Structure and Classification
 - 1.5.2. Pharmacology
 - 1.5.2.1. Pharmacokinetics
 - 1.5.2.2. Pharmacodynamics
 - 1.5.2.3. Coadjuvants
 - 1.5.3. Mechanism of Action
 - 1.5.4. Choice of local anesthetic
 - 1.5.5. Toxicity

- 1.6. Local Anesthetic Poisoning
 - 1.6.1. Introduction
 - 1.6.2. Pathophysiology
 - 1.6.3. Risk Factors
 - 1.6.4. Symptoms
 - 1.6.5. Management
- 1.7. Coadjuvant drugs in Regional Anesthesia
 - 1.7.1. Introduction
 - 1.7.2. Steroids
 - 1.7.2.1. Neuroaxial steroids
 - 1.7.2.2. Perineural steroids
 - 1.7.3. Alpha Agonists
 - 1.7.3.1. Clonidine:
 - 1.7.3.2. Dexmedetomidine
 - 1.7.4. Opioids
 - 1.7.4.1. Neuroaxial opioids
 - 1.7.4.2. Perineural opioids
 - 1.7.5. Other adjuvants
 - 1.7.6. Future Strategies
- 1.8. Sedation in Regional Anesthesia
 - 1.8.1. Pharmacology of Hypnotics
 - 1.8.2. Total Intravenous Anesthesia Technique (TIVA-TCI)
 - 1.8.3. Sedation as an adjunct to Regional Anesthesia
- 1.9. Materials
 - 1.9.1. Introduction
 - 1.9.2. Basic Monitoring
 - 1.9.3. Asepsis and Sterility in Regional Anesthesia
 - 1.9.4. Needles
 - 1.9.4.1. Spinal blockage
 - 1.9.4.2. Epidural blockage
 - 1.9.4.3. Peripheral Nerve and Other Blocks Blockage
 - 1.9.5. Catheters for continuous analgesia

- 1.9.6. Infusion System
 - 1.9.6.1. Elastomers
 - 1.9.6.2. Infusion Pumps
- 1.10. Preanesthesia Consultation
 - 1.10.1. Preanesthetic assessment
 - 1.10.2. Complementary Tests
 - 1.10.3. Information and Consent information

Module 2. Neuroaxial Blocks

- 2.1. Neuroaxis blockages
 - 2.1.1. Definition
 - 2.1.2. History
 - 2.1.3. Current utility and use
- 2.2. Anatomy and physiology applied to neuroaxial blockades
 - 2.2.1. Applied Anatomy
 - 2.2.2. Applied Physiology of Camelids
- 2.3. Pharmacology applied to neuroaxial blockades
 - 2.3.1. Local anesthetics
 - 2.3.2. Opioids
 - 2.3.3. Clonidine:
 - 2.3.4. Corticosteroids
 - 2.3.5. Neostigmine
 - 2.3.6. Ketamine
 - 2.3.7. Others
- 2.4. Spinal blockade
 - 2.4.1. Definition and anatomical recall
 - 2.4.2. Indications
 - 2.4.3. Contraindications
 - 2.4.4. Necessary Material
 - 2.4.5. Technique in single puncture spinal block
 - 2.4.6. Technique in continuous spinal block
 - 2.4.7. Effects of blockage and management
 - 2.4.8. Specific complications

- 2.5. Epidural block
 - 2.5.1. Definition and anatomical recall
 - 2.5.2. Indications
 - 2.5.3. Contraindications
 - 2.5.4. Necessary Material
 - 2.5.5. Exclusive epidural block technique
 - 2.5.6. Combined spinal-epidural block technique
 - 2.5.7. Effects of blockage and management
 - 2.5.8. Specific complications
- 2.6. Caudal Block
 - 2.6.1. Definition and anatomical recall
 - 2.6.2. Indications
 - 2.6.3. Contraindications
 - 2.6.4. Necessary Material
 - 2.6.5. Technique
 - 2.6.6. Effects of blockage and management
 - 2.6.7. Specific complications
- 2.7. Paravertebral Block
 - 2.7.1. Definition and anatomical recall
 - 2.7.2. Indications
 - 2.7.3. Contraindications
 - 2.7.4. Necessary Material
 - 2.7.5. Technique
 - 2.7.6. Effects of blockage and management
 - 2.7.7. Specific complications
- 2.8. Neuroaxial blocks in obstetrics
 - 2.8.1. Physiological Changes of Pregnancy
 - 2.8.2. Neuroaxial Analgesia in Labor
 - 2.8.3. Neuroaxial anesthesia for cesarean section, instrumented delivery and postoperative analgesia
 - 2.8.4. Effects of neuroaxial blocks on the progression of labor and on the fetus
 - 2.8.5. Specific complications
- 2.9. Complications of neuroaxial blocks
 - 2.9.1. Low back pain/dorsalgia
 - 2.9.2. Hypotension
 - 2.9.3. Accidental dural puncture and post dural puncture headache
 - 2.9.4. Blood puncture, intravascular injection and local anesthetic intoxication
 - 2.9.5. Subarachnoid injection
 - 2.9.6. Intraosseous injection
 - 2.9.7. High spinal block and total spinal block
 - 2.9.8. Failed blockage
 - 2.9.9. Neurological Lesions
 - 2.9.10. Urinary Retention
 - 2.9.11. Pneumoencephalon
 - 2.9.12. Pneumothorax
 - 2.9.13. Venous Air Embolism
 - 2.9.14. Spinal hematoma
 - 2.9.15. Infectious complications: spinal abscess, arachnoiditis and meningitis
 - 2.9.16. Complications due to the effect of drugs
- 2.10. Ultrasound in Neuroaxial Blocks
 - 2.10.1. General principles and limitations
 - 2.10.2. Ultrasound-guided spinal block
 - 2.10.3. Ultrasound-guided epidural block
 - 2.10.4. Ultrasound-guided caudal block
 - 2.10.5. Ultrasound-guided paravertebral blockade

Module 3. Upper Limbs

- 3.1. Brachial Plexus Anatomy
 - 3.1.1. Anatomy
 - 3.1.2. Nerve territory and exploration
 - 3.1.3. Cutaneous and motor distribution of brachial plexus nerves
- 3.2. Superficial and deep cervical block
 - 3.2.1. Anatomy
 - 3.2.2. Indications
 - 3.2.3. Contraindications
 - 3.2.4. Anatomical references, posture and puncture sites
 - 3.2.5. Material
 - 3.2.6. Response to neurostimulation
 - 3.2.7. Blockage by Ultrasound
 - 3.2.8. Complications
- 3.3. Interscalene Block
 - 3.3.1. Anatomy
 - 3.3.2. Indications
 - 3.3.3. Contraindications
 - 3.3.4. Anatomical references, posture and puncture sites
 - 3.3.5. Material
 - 3.3.6. Response to neurostimulation
 - 3.3.7. Blockage by Ultrasound
 - 3.3.8. Complications
- 3.4. Infraclavicular Block
 - 3.4.1. Anatomy
 - 3.4.2. Indications
 - 3.4.3. Contraindications
 - 3.4.4. Anatomical references, posture and puncture sites
 - 3.4.5. Material
 - 3.4.6. Response to neurostimulation
 - 3.4.7. Blockage by Ultrasound
 - 3.4.8. Complications



- 3.5. Infraclavicular Block
 - 3.5.1. Anatomy
 - 3.5.2. Indications
 - 3.5.3. Contraindications
 - 3.5.4. Anatomical references, posture and puncture sites
 - 3.5.5. Material
 - 3.5.6. Response to neurostimulation
 - 3.5.7. Blockage by Ultrasound
 - 3.5.8. Complications
- 3.6. Axillary Block
 - 3.6.1. Anatomy
 - 3.6.2. Indications
 - 3.6.3. Contraindications
 - 3.6.4. Anatomical references, posture and puncture sites
 - 3.6.5. Material
 - 3.6.6. Response to neurostimulation
 - 3.6.7. Blockage by Ultrasound
 - 3.6.8. Complications
- 3.7. Blockages in the humeral canal (mid-humeral block)
 - 3.7.1. Anatomy
 - 3.7.2. Indications
 - 3.7.3. Contraindications
 - 3.7.4. Anatomical references, posture and puncture sites
 - 3.7.5. Material
 - 3.7.6. Response to neurostimulation
 - 3.7.7. Blockage by Ultrasound
 - 3.7.8. Complications
- 3.8. Peripheral blockages
 - 3.8.1. Blockages at shoulder level
 - 3.8.1.1. Supraclavicular Nerve Block
 - 3.8.1.2. Mental Nerve Block
 - 3.8.1.3. Lateral Femoral Cutaneous Nerve Block
 - 3.8.1.4. Medial antebrachial cutaneous nerve block
 - 3.8.2. Isolated blockages at the elbow level
 - 3.8.2.1. Median Nerve Block
 - 3.8.2.2. Radially Nerve Block
 - 3.8.2.3. Cubital Nerve Block
 - 3.8.3. Isolated blockages at the wrist and hand level
 - 3.8.3.1. Median Nerve Block
 - 3.8.3.2. Radially Nerve Block
 - 3.8.3.3. Cubital Nerve Block
 - 3.8.3.4. Distal Blocks
- 3.9. Regional Intravenous Anesthesia of the Upper Extremity
 - 3.9.1. Indications
 - 3.9.2. Contraindications
 - 3.9.3. Material
 - 3.9.4. Methodology
- 3.10. Infiltrations in the upper limb
 - 3.10.1. General Aspects
 - 3.10.2. Indications
 - 3.10.3. Contraindications
 - 3.10.4. Materials and Drugs
 - 3.10.5. Methodology
 - 3.10.6. Adverse Effects
 - 3.10.7. Infiltrations at shoulder level
 - 3.10.8. Infiltrations at elbow level
 - 3.10.9. Infiltrations at hand level

Module 4. Forelimbs

- 4.1. Lumbar Square Tightness
 - 4.1.1. Anatomy
 - 4.1.2. Nerve territory and exploration
 - 4.1.3. Cutaneous and motor distribution of the nerves of the lumbar plexus
- 4.2. Anatomy of the sacral plexus
 - 4.2.1. Anatomy
 - 4.2.2. Nerve territory and exploration
 - 4.2.3. Cutaneous and motor distribution of sacral plexus nerves
- 4.3. Posterior lumbar block
 - 4.3.1. Anatomy
 - 4.3.2. Indications
 - 4.3.3. Contraindications
 - 4.3.4. Material
 - 4.3.5. Anatomical references, posture and puncture sites
 - 4.3.6. Response to neurostimulation
 - 4.3.7. Blockage by Ultrasound
 - 4.3.8. Complications
- 4.4. Femoral block
 - 4.4.1. Anatomy
 - 4.4.2. Indications
 - 4.4.3. Contraindications
 - 4.4.4. Anatomical references, posture and puncture sites
 - 4.4.5. Material
 - 4.4.6. Response to neurostimulation
 - 4.4.7. Blockage by Ultrasound
 - 4.4.8. Complications
- 4.5. Obturator and femorocutaneous nerve blocks
 - 4.5.1. Obturator Nerve Block
 - 4.5.1.1. Anatomy
 - 4.5.1.2. Indications
 - 4.5.1.3. Contraindications
 - 4.5.1.4. Anatomical references, posture and puncture sites
 - 4.5.1.5. Material
 - 4.5.1.6. Response to neurostimulation
 - 4.5.1.7. Blockage by Ultrasound
 - 4.5.1.8. Complications
 - 4.5.2. Lateral Femoral Cutaneous Nerve Block
 - 4.5.2.1. Anatomy
 - 4.5.2.2. Indications
 - 4.5.2.3. Contraindications
 - 4.5.2.4. Anatomical references, posture and puncture sites
 - 4.5.2.5. Material
 - 4.5.2.6. Response to neurostimulation
 - 4.5.2.7. Blockage by Ultrasound
 - 4.5.2.8. Complications
- 4.6. Interfacial blocks for hip surgery
 - 4.6.1. Introduction
 - 4.6.2. PENG or pericapsular nerve group block
 - 4.6.3. Block of the iliac fascia
 - 4.6.3.1. Suprainguinal
 - 4.6.3.2. Infrainguinal
 - 4.6.4. Benefits of peripheral hip nerve blocks
- 4.7. Saphenous nerve block and intra-articular block for knee surgery
 - 4.7.1. Introduction
 - 4.7.2. Saphenous Nerve Block
 - 4.7.2.1. Blockage of the Internal Saphenous Nerve (Adductor Canal)
 - 4.7.2.2. Other blocking sites
 - 4.7.3. Intra-articular knee block

- 4.8. Sciatic block
 - 4.8.1. Sciatic Blockage Gluteal Level
 - 4.8.1.1. Anatomy
 - 4.8.1.2. Indications
 - 4.8.1.3. Contraindications
 - 4.8.1.4. Anatomical references, posture and puncture sites
 - 4.8.1.5. Material
 - 4.8.1.6. Response to neurostimulation
 - 4.8.1.7. Blockage by Ultrasound
 - 4.8.1.8. Complications
 - 4.8.2. Sciatic Blockage Gluteal Level
 - 4.8.2.1. Anatomy
 - 4.8.2.2. Indications
 - 4.8.2.3. Contraindications
 - 4.8.2.4. Anatomical references, posture and puncture sites
 - 4.8.2.5. Material
 - 4.8.2.6. Response to neurostimulation
 - 4.8.2.7. Blockage by Ultrasound
 - 4.8.2.8. Complications
- 4.9. Sciatic Nerve Block Popliteal Level
 - 4.9.1. Anatomy
 - 4.9.2. Indications
 - 4.9.3. Contraindications
 - 4.9.4. Anatomical references, posture and puncture sites
 - 4.9.5. Material
 - 4.9.6. Response to neurostimulation
 - 4.9.7. Blockage by Ultrasound
 - 4.9.8. Complications
- 4.10. Blockage of the Terminal Branches of the Sciatic Nerve
 - 4.10.1. Posterior Tibial Nerves
 - 4.10.2. Sural Nerve
 - 4.10.3. Common Peroneal Nerve
 - 4.10.4. Deep Peroneal Nerve
 - 4.10.5. Superficial Peroneal Nerve

Module 5. Thoraco-abdominal Interfascial Blocks

- 5.1. Interfacial Blocks
 - 5.1.1. What is an interfascial block?
 - 5.1.2. History & evolution
 - 5.1.3. Advantages and Disadvantages
- 5.2. Chest Wall Anatomy
 - 5.2.1. Musculoskeletal Component
 - 5.2.2. Nerve Components
 - 5.2.3. Cutaneous Innervation
- 5.3. Intercostal Blockages
 - 5.3.1. Blockade of the anterior cutaneous branches of the intercostal nerves (BCRA) or pectointercostal blockade
 - 5.3.1.1. Introduction
 - 5.3.1.2. Indications and Contraindications
 - 5.3.1.3. Position and Patient Preparation
 - 5.3.1.4. Materials
 - 5.3.1.5. Anatomical Image vs. Ultrasound Imaging
 - 5.3.1.6. Blockage under Ultrasound Vision
 - 5.3.1.7. Complications
 - 5.3.2. BRILMA
 - 5.3.2.1. Introduction
 - 5.3.2.2. Indications and Contraindications
 - 5.3.2.3. Position and Patient Preparation
 - 5.3.2.4. Materials
 - 5.3.2.5. Anatomical Image vs. Ultrasound Imaging
 - 5.3.2.6. Blockage under Ultrasound Vision
 - 5.3.2.7. Complications
 - 5.3.2.8. Modified BRILMA

5.4. Interpectoral Blocks

5.4.1. PEC I-II

5.4.1.1. Introduction

5.4.1.2. Indications and Contraindications

5.4.1.3. Position and Patient Preparation

5.4.1.4. Materials

5.4.1.5. Anatomical Image vs. Ultrasound Imaging

5.4.1.6. Blockage under Ultrasound Vision

5.4.1.7. Complications

5.4.2. PEC I-II

5.4.2.1. Introduction

5.4.2.2. Indications and Contraindications

5.4.2.3. Position and Patient Preparation

5.4.2.4. Materials

5.4.2.5. Anatomical Image vs. Ultrasound Imaging

5.4.2.6. Blockage under Ultrasound Vision

5.4.2.7. Complications

5.5. Other Blocks of the Thoracic Wall

5.5.1. Spinal Erector Spinae Block

5.5.1.1. Introduction

5.5.1.2. Indications and Contraindications

5.5.1.3. Position and Patient Preparation

5.5.1.4. Materials

5.5.1.5. Anatomical Image vs. Ultrasound Imaging

5.5.1.6. Blockage under Ultrasound Vision

5.5.1.7. Complications

5.5.2. Serratus Blockage

5.5.2.1. Introduction

5.5.2.2. Indications and Contraindications

5.5.2.3. Position and Patient Preparation

5.5.2.4. Materials

5.5.2.5. Anatomical Image vs. Ultrasound Imaging

5.5.2.6. Blockage under Ultrasound Vision

5.5.2.7. Complications





- 5.6. Anatomy of the Abdominal Wall
 - 5.6.1. Musculoskeletal Component
 - 5.6.2. Nerve Components
 - 5.6.3. Cutaneous Innervation
- 5.7. Transversus Abdominis Plane (TAP Block)
 - 5.7.1. Introduction
 - 5.7.2. Indications and Contraindications
 - 5.7.3. Position and Patient Preparation
 - 5.7.4. Materials
 - 5.7.5. Anatomical Image vs. Ultrasound Imaging
 - 5.7.6. Blockage under Ultrasound Vision
 - 5.7.7. Complications
 - 5.7.8. TAP Blocking Variants
 - 5.7.8.1. Subcostal TAP
 - 5.7.8.2. Back TAP
- 5.8. Ilioinguinal and Iliohypogastric Block
 - 5.8.1. Introduction
 - 5.8.2. Indications and Contraindications
 - 5.8.3. Position and Patient Preparation
 - 5.8.4. Materials
 - 5.8.5. Anatomical Image vs. Ultrasound imaging
 - 5.8.6. Blockage under Ultrasound Vision
 - 5.8.7. Complications
- 5.9. Other Blocks of the Abdominal Wall
 - 5.9.1. Locking of the Rectus Sheath
 - 5.9.1.1. Introduction
 - 5.9.1.2. Indications and Contraindications
 - 5.9.1.3. Position and Patient Preparation
 - 5.9.1.4. Materials
 - 5.9.1.5. Anatomical Image vs. Ultrasound Imaging
 - 5.9.1.6. Blockage under Ultrasound Vision
 - 5.9.1.7. Complications

- 5.9.2. Semilunar Block
 - 5.9.2.1. Introduction
 - 5.9.2.2. Indications and Contraindications
 - 5.9.2.3. Position and Patient Preparation
 - 5.9.2.4. Materials
 - 5.9.2.5. Anatomical Image vs. Ultrasound Imaging
 - 5.9.2.6. Blockage under Ultrasound Vision
 - 5.9.2.7. Complications
- 5.9.3. Lumbar Square Blockage
 - 5.9.3.1. Introduction
 - 5.9.3.2. Indications and Contraindications
 - 5.9.3.3. Position and Patient Preparation
 - 5.9.3.4. Materials
 - 5.9.3.5. Anatomical Image vs. Ultrasound Imaging
 - 5.9.3.6. Blockage under Ultrasound Vision
 - 5.9.3.7. Complications
- 5.10. Incisional Analgesia
 - 5.10.1. Local anesthetic infiltration in surgical wounds
 - 5.10.2. Continuous analgesia delivery systems. Incisional catheters
 - 5.10.3. Rate of Infusion
 - 5.10.4. Efficiency and Safety

Module 6. Head and Neck

- 6.1. Regional Anesthesia for Oral and Maxillofacial Surgery
 - 6.1.1. Introduction
 - 6.1.2. Anatomy of Trigeminal Nerves
 - 6.1.3. Equipment for Maxillary and Mandibular Regional Anesthesia
- 6.2. Facial Nerve Blocks
 - 6.2.1. Superficial Trigeminal Block
 - 6.2.1.1. Frontal Nerve Block
 - 6.2.1.2. Infraorbital Nerve Block
 - 6.2.1.3. Mentonian Nerve Block
 - 6.2.1.4. Ultrasound-guided Technique
 - 6.2.2. Jaw Nerve Blockade
- 6.2.3. Mandibular Nerve Block
- 6.2.4. Regional Nerve Block of the Nose
- 6.3. Lift Regional Anesthesia
 - 6.3.1. Supraperiosteal Infiltration
 - 6.3.2. Periodontal Intraligamentary Infiltration
 - 6.3.3. Superior Alveolar Nerve Block
 - 6.3.3.1. Posterior Superior Alveolar Nerve
 - 6.3.3.2. Medial Superior Alveolar Nerve
 - 6.3.3.3. Anterior Superior Alveolar or Infraorbital Nerve
 - 6.3.4. Palatine Nerve Block Major
 - 6.3.5. Mental Nerve Block
 - 6.3.6. Jaw Nerve Blockade
- 6.4. Mandibular Regional Anesthesia
 - 6.4.1. Inferior Alveolar Nerve Block
 - 6.4.2. Mental Nerve Block
 - 6.4.3. Mandibular Nerve Block
 - 6.4.4. Mentonian Nerve Block
 - 6.4.5. Incisor Nerves Block
- 6.5. Regional External Ear Blocks
 - 6.5.1. Anatomy
 - 6.5.2. Indications
 - 6.5.3. Classic Blocking Technique
 - 6.5.4. Complications
- 6.6. Nerve Blocks of the Head
 - 6.6.1. Major Occipital Nerve Block
 - 6.6.2. *Scalp Block* (scalp nerve blockage)
 - 6.6.3. Anesthesia in Craniotomy in Awake Patient
- 6.7. Anesthesia for Ophthalmic Surgery
 - 6.7.1. Orbit and Innervation Anatomy
 - 6.7.2. Surgical Considerations
 - 6.7.3. Perioperative Management

- 6.8. Anesthetic Techniques for Ophthalmic Surgery
 - 6.8.1. Local Anesthesia
 - 6.8.2. Subtenonian or Episcleral
 - 6.8.3. Subconjunctival Anesthesia
 - 6.8.4. Oculoplastics Nerve Blocks
 - 6.8.5. Retrobulbar Anesthesia
 - 6.8.6. Peribulbar Anesthesia
 - 6.8.7. Complications
- 6.9. Superficial Cervical Plexus Block
 - 6.9.1. General Considerations
 - 6.9.2. Anatomy
 - 6.9.3. Ultrasound-guided Block
 - 6.9.4. Nervous Stimulation Techniques
 - 6.9.5. Anesthesia for Carotid Endarterectomy
- 6.10. Regional Anesthesia for VAD Management
 - 6.10.1. Introduction
 - 6.10.2. Upper Airway Innervation
 - 6.10.3. Local Anesthesia
 - 6.10.4. Regional Anesthesia:
 - 6.10.4.1. Superior Laryngeal Nerve Blockage
 - 6.10.4.2. Glossopharyngeal Block
 - 6.10.4.3. Recurrent Laryngeal Block
 - 6.10.4.4. Transtracheal Block
 - 6.10.5. Sedation for Intubation in Awake Patient
- 7.3. CMA Circuit
 - 7.3.1. Types of Units
 - 7.3.2. Structure and Organization
- 7.4. Selection Criteria
 - 7.4.1. What Surgical Procedures Can Be Performed?
 - 7.4.2. Which Patients do we Select?
- 7.5. Role of the Pre-Anesthesia Consultation
 - 7.5.1. Preanesthesia Consultation
 - 7.5.2. Patient Preparation
- 7.6. Anesthetic Technique Selection
 - 7.6.1. What Anesthetic Technique do we Use?
 - 7.6.2. Opioids in Major Outpatient Surgery
- 7.7. Pain Control in Major Outpatient Surgery
 - 7.7.1. Pain Relieving Techniques
 - 7.7.2. Multimodal Analgesia
- 7.8. Complications in Major Ambulatory Surgery
 - 7.8.1. Nausea and Vomiting
 - 7.8.2. Pain
 - 7.8.3. Urinary Retention
 - 7.8.4. Other Complications
- 7.9. Discharge from the Major Outpatient Surgery Unit
 - 7.9.1. Discharge Criteria at Home
 - 7.9.2. Hospital Admission Criteria
- 7.10. Morbimortality, Safety and Quality in Major Outpatient Surgery
 - 7.10.1. Morbidity and Mortality Data
 - 7.10.2. Security/Safety
 - 7.10.3. Indicators of Quality of Care

Module 7. Major Outpatient Surgery

- 7.1. Major Outpatient Surgery
 - 7.1.1. What is Major Outpatient Surgery?
 - 7.1.2. History
- 7.2. Current Situation of Major Outpatient Surgery
 - 7.2.1. Implementation Difficulties
 - 7.2.2. Cost-Effectiveness Approach
 - 7.2.3. Achievements of Major Outpatient Surgery

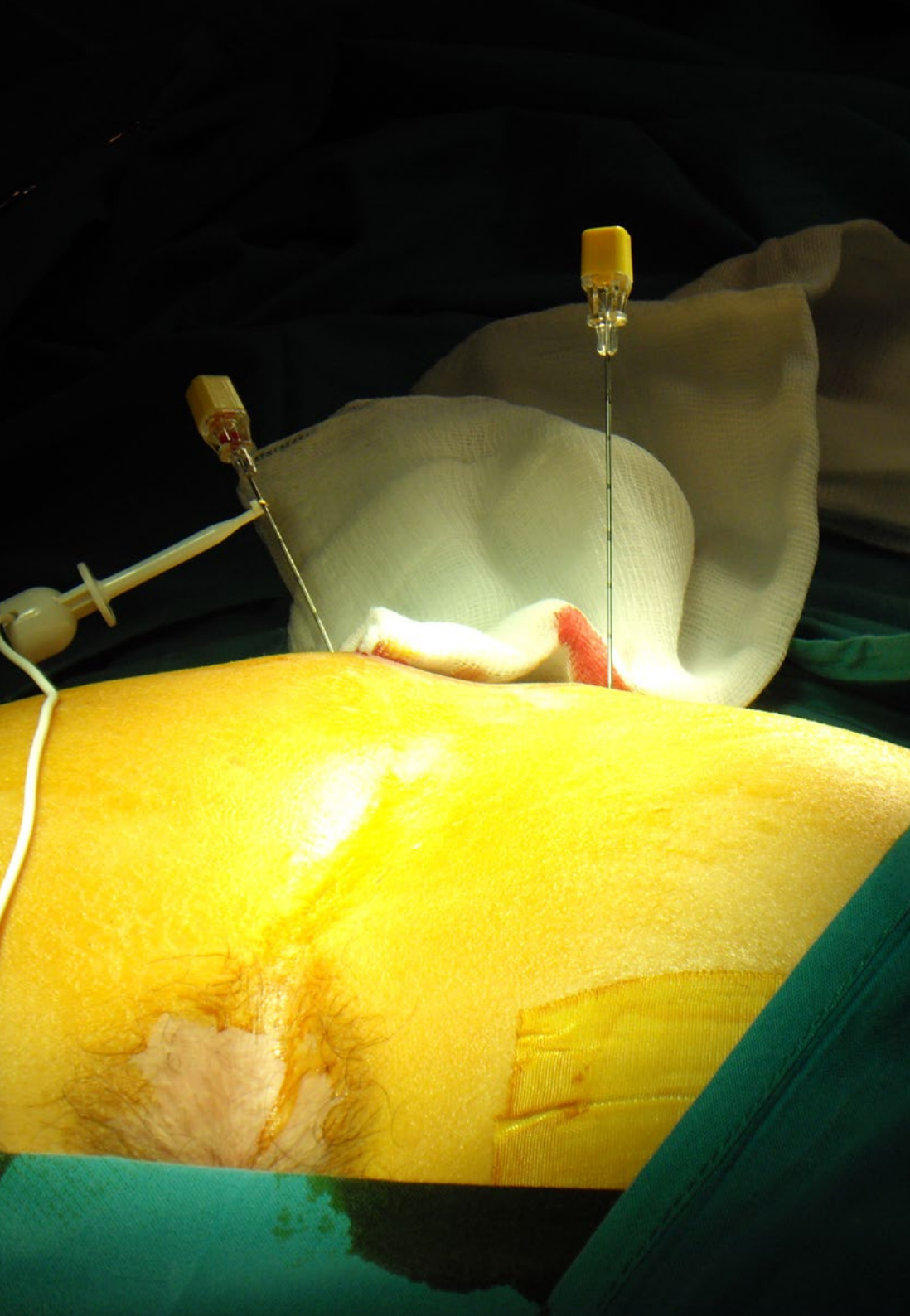
Module 8. Critical Care and Regional Anesthesia

- 8.1. Peculiarities of Critical Patients
 - 8.1.1. Pathophysiology of Critical Patients
 - 8.1.2. Special Considerations for the Locoregional Techniques
- 8.2. Pain Assessment in the Critical Patients
 - 8.2.1. Introduction
 - 8.2.2. Assessment of Pain in Conscious and/or Communicative Patient
 - 8.2.3. Assessment of Pain in Unconscious and/or Non-Communicative Patients
- 8.3. Pain Management in Critical Care Units
 - 8.3.1. Origin of Pain
 - 8.3.2. Impact of Pain in the Critically Ill Patient
 - 8.3.3. Therapeutic Options for Pain
- 8.4. Locoregional Technique in Critical Care Units
 - 8.4.1. Upper Limb Blocks
 - 8.4.2. Lower Limb Blocks
 - 8.4.3. Central Blocks
 - 8.4.4. Thoracoabdominal Wall Block
- 8.5. The Polytraumatized Patient
 - 8.5.1. Etiopathogenesis
 - 8.5.2. Characteristics of the Polytraumatized Patient
 - 8.5.3. Locoregional Techniques in the Polytraumatized Patient
- 8.6. Amputee Patient and Phantom Limb
 - 8.6.1. Amputee Patient. Incidence and Characteristics
 - 8.6.2. Phantom Limb. Incidence and Characteristics
 - 8.6.3. Prevention and Management of Phantom Limb
- 8.7. Burn patient
 - 8.7.1. Etiopathogenesis
 - 8.7.2. Characteristics of the Burn Patient
 - 8.7.3. Locoregional Techniques in the Burned Patient
- 8.8. Regional Anesthesia and Microvascularized Flap
 - 8.8.1. The Flap
 - 8.8.2. Physiological Considerations
 - 8.8.3. Anesthetic Approach

- 8.9. Ultrasound in Critical Care Units
 - 8.9.1. Utility of Ultrasound in Critical Care Units
 - 8.9.2. Ultrasound-Guided Techniques in Critical Care Units
- 8.10. Central Line Canalization
 - 8.10.1. Internal Jugular Vein Canalization
 - 8.10.2. Subclavian Vein Canalization
 - 8.10.3. Femoral Vein Canalization
 - 8.10.4. Central line Canalization by Peripheral Access
 - 8.10.5. Others

Module 9. Locoregional Anesthesia and Pain Management

- 9.1. Pain and its Pathophysiological Basis. Types of Pain
 - 9.1.1. Lesson on Neuroanatomy
 - 9.1.2. Lesson on Somatic Nociceptive Pain
 - 9.1.3. Lesson on Visceral Nociceptive Pain
 - 9.1.4. Lesson on Neuropathic Pain
 - 9.1.5. Lesson from acute to chronic pain: peripheral and central sensitization
- 9.2. Locoregional Anesthesia in the Psychotherapeutic treatment Psychopharmacological treatment of Acute Postoperative Pain
 - 9.2.1. Regional Analgesia as a fundamental part of multimodal analgesia in acute postoperative pain
 - 9.2.2. Lesson on Regional Analgesia in Shoulder Surgery and MMSS
 - 9.2.3. Lesson on Regional Analgesia in Hip Surgery
 - 9.2.4. Lesson on Regional Analgesia in Knee Surgery
 - 9.2.5. Lesson on Regional Analgesia in Foot Surgery
 - 9.2.6. Lesson on Regional Analgesia in Thoracotomy
 - 9.2.7. Lesson on Regional Analgesia in Breast Surgery
 - 9.2.8. Lesson on Regional Analgesia in Laparotomy
 - 9.2.9. Lesson on Regional Analgesia in Laparoscopy



- 9.3. Updates on Neuropathic Pain Treatment(DN)
 - 9.3.1. Diagnostic blocks in DN treatment
 - 9.3.2. Pulsed RF in the treatment of DN in MMSS
 - 9.3.3. Pulsed RF in the treatment of thoracic DN
 - 9.3.4. Pulsed RF in the treatment of abdominal DN
 - 9.3.5. Pulsed RF in the treatment of lumbar DN
 - 9.3.6. Pulsed RF in the treatment of MMII DN
- 9.4. Locoregional Anesthesia in the treatment of oncologic pain and in the palliative care setting
 - 9.4.1. Invasive Techniques as an adjunct to pain management in palliative care. General and differential aspects of these patients. Neurolysis
 - 9.4.2. Stellate ganglion block for neck cancer pain and EESS
 - 9.4.3. Celiac plexus blockade for supramesocolic cancer pain
 - 9.4.4. Superior Hypogastric plexus block, inferior hypogastric plexus block and ganglion impar in pelvic oncologic pain
 - 9.4.5. Peripheral Nerve and plex nerve block in the oncologic patient
 - 9.4.6. Long-term epidural catheter in the context of the oncologic patient
 - 9.4.7. Intrathecal pumps for oncology patient management
- 9.5. Locoregional Anesthesia in the treatment of low back pain
 - 9.5.1. Block and radiofrequency in lumbar facet syndrome
 - 9.5.2. Regional Approach to Discogenic Pain
 - 9.5.3. Pain from Lumbosacral Radiculopathy
 - 9.5.4. Lumbar Epidural Steroids
 - 9.5.5. Lumbosacral DRG RF
 - 9.5.6. Lumbar Myofascial Syndrome
 - 9.5.7. Botulinum toxin blockade and infiltration of the piriformis muscle
 - 9.5.8. Botulinum toxin blockade and infiltration of the psoas and quadratus lumborum muscle
 - 9.5.9. Pain due to alterations in the sacroiliac joint. Diagnostic and RF blocking
 - 9.5.10. Epidurolisis and epiduroscopy

- 9.6. Regional anesthesia and craniofacial pain. Cervicalgia
 - 9.6.1. Trigeminal Neuralgia Blockage and RF of Gasser's Ganglion
 - 9.6.2. Other orofacial algiass. Sphenopalatine Ganglion Block and RF
 - 9.6.3. Cervicogenic cephalgia. Blocking and RF of the TON and GON
 - 9.6.4. Cervical pain due to facet pathology. Diagnostic and RF blockade in cervical facet syndrome
 - 9.6.5. Cervical discogenic pain. Cervical epidural steroids
 - 9.6.6. Radiculopathy of the MMSS. Epidural, radicular and RF blocks of cervical root DRG
- 9.7. Regional Anesthesia, visceral pain and CRPS
 - 9.7.1. Regional Anesthesia in Acute and Chronic Pancreatitis
 - 9.7.2. Regional Anesthesia in the pathology of acute and chronic renal lithiasis
 - 9.7.3. Regional Anesthesia in chronic non-oncologic pelvic pain
 - 9.7.3.1. Diagnostic and therapeutic block of the superior hypogastric plexus
 - 9.7.3.2. Diagnostic and therapeutic blockade of the Ganglion Impar
 - 9.7.3.3. Pudendal nerve block and RF
 - 9.7.3.4. Blockage and RF of the Ilioinguinal and Iliohypogastric Nerves
 - 9.7.4. SDRC
 - 9.7.4.1. ACS Pathophysiology
 - 9.7.4.2. CRPS in MMSS: peripheral and stellate ganglion techniques
 - 9.7.4.3. CRPS in MMII: peripheral and lumbar sympathetic techniques
- 9.8. Regional Anesthesia and musculoskeletal pain Thorax and Large Joints
 - 9.8.1. Regional Anesthesia in the painful shoulder. Intra-articular Block. RF of the Suprascapular Nerve
 - 9.8.2. Regional Anesthesia in Coxarthrosis. Intra-articular Block Denervation Techniques
 - 9.8.3. Regional Anesthesia in Gonarthrosis. Intra-articular Block Denervation techniques (RF N geniculates)
 - 9.8.4. Regional Anesthesia in myofascial syndrome. Trigger Point Block. Intrafascial Blocks
 - 9.8.5. Regional Anesthesia and discogenic dorsalgia. Epidural Steroids
 - 9.8.6. Regional Anesthesia and degenerative dorsalgia. Diagnostic and RF blockade in dorsal facet syndrome
- 9.9. Regional Anesthesia in the IV Staggered. Neurostimulation and spinal infusion of drugs
 - 9.9.1. Pathophysiological basis of neurostimulation and spinal drug infusion
 - 9.9.2. Neurostimulation in the treatment of pain secondary to failed back surgery (FBSS)
 - 9.9.2.1. Posterior Cord Stimulation
 - 9.9.2.2. GRD Stimulation
 - 9.9.3. Neurostimulation in Peripheral Neuropathies
 - 9.9.4. Posterior cord neurostimulation in angor and visceral pain
 - 9.9.5. Sacral Root Neurostimulation in DCP
 - 9.9.6. Intracranial and Transcranial Stimulation
 - 9.9.7. Drug infusion via the spinal route in non-oncologic pathology
- 9.10. Regional Anesthesia in Labor Analgesia (ATP)
 - 9.10.1. Pathophysiology of pain in the stages of labor
 - 9.10.2. Regional Analgesia in PTA: epidural analgesia. Modalities of drug administration in ATP
 - 9.10.3. PTA and other regional analgesia modalities: combined epidural-intradural analgesia (CIE). CIE analgesia without intradural drug
 - 9.10.4. Anesthesia Regional in Cesarean Sections. Epidural Anesthesia. Intradural Anesthesia. Anesthesia CIE
 - 9.10.5. Special situations in PTA and Regional Anesthesia
 - 9.10.5.1. ATP, Regional Anesthesia and Obese Patient. Ultrasound. Caudal Epidural Approach
 - 9.10.5.2. DAP in cesarean section without epidural catheter. Ultrasound Wall Block
 - 9.10.5.3. Transvaginal/Transperineal Pudendal Nerve block

Module 10. Specific Situations of Regional Anesthesia

- 10.1. Regional Anesthesia in Patients with Pre-existing Neurological Disease
 - 10.1.1. Introduction
 - 10.1.2. Peripheral Nervous System Disorders
 - 10.1.2.1. Hereditary Peripheral Neuropathy
 - 10.1.2.2. Acquired Peripheral Neuropathy. Diabetic Polyneuropathy
 - 10.1.2.3. Chemotherapy-Induced Neuropathy
 - 10.1.2.4. Entrapment Neuropathy
 - 10.1.2.5. Inflammatory Neuropathy. Guillén-Barré Syndrome
 - 10.1.2.6. Post-Surgical Inflammatory Neuropathy

- 10.1.3. Central Nervous System disorders
 - 10.1.3.1. Multiple Sclerosis
 - 10.1.3.2. Post Polio Syndrome
 - 10.1.3.3. Amyotrophic Lateral Sclerosis
 - 10.1.3.4. Spinal Stenosis and Neural Disc Disease
 - 10.1.3.5. Spinal Cord Injury
- 10.2. Anti-Aggregation Therapy, Anticoagulation Therapy
 - 10.2.1. Introduction
 - 10.2.2. Minimum Hemostatic Values
 - 10.2.3. Anticoagulants, Antiplatelet Agents and Anesthesia
 - 10.2.3.1. Unfractionated Heparin
 - 10.2.3.2. Low Molecular Weight Heparin
 - 10.2.3.3. Fondaparinux
 - 10.2.3.4. Antivitamin K Drugs (Acenocoumarol, Warfarin)
 - 10.2.3.5. Platelet Aggregation Inhibitors
 - 10.2.4. Ophthalmological Procedures
 - 10.2.4.1. Surgeries in which Antithrombotic Treatment can Be Continued
 - 10.2.4.2. Surgeries in which Antithrombotic Treatment Should Be Discontinued and Bridging Therapy Considered
 - 10.2.4.3. How to Use Guides in Peripheral Nerve Blocks
- 10.3. Continuous Techniques for Postoperative Pain Control
 - 10.3.1. Introduction
 - 10.3.2. Drugs:
 - 10.3.2.1. Coadjuvants
 - 10.3.2.2. Continuous Perfusions Through Catheters
 - 10.3.2.3. New Local Anesthetics
 - 10.3.3. Material
 - 10.3.3.1. Needle and Catheter
 - 10.3.3.2. Infusion Pumps
 - 10.3.4. Modes of Administration
 - 10.3.4.1. Boluses
 - 10.3.4.2. Continuous Administration
 - 10.3.5. Techniques
 - 10.3.5.1. Interscalene Block
 - 10.3.5.2. Infraclavicular Block
 - 10.3.5.3. Axillary Block
 - 10.3.5.4. Posterior Lumbar Plexus Block
 - 10.3.5.5. Anterior Lumbar Plexus Block
 - 10.3.5.6. Proximal Sciatic Nerve Blocks
 - 10.3.5.7. Proximal Sciatic Nerve Blocks
 - 10.3.5.8. Distal Blocks
- 10.4. Regional Anesthesia and Pulmonary Disease
 - 10.4.1. Introduction
 - 10.4.2. Epidural and Spinal Anesthesia
 - 10.4.3. Brachial Plexus Block
 - 10.4.4. Paravertebral Blockade and Intercostal Nerves
 - 10.4.5. Importance of Regional Anesthesia during the COVID-19 Pandemic
- 10.5. Regional Anesthesia and other Systemic Diseases
 - 10.5.1. Renal disease
 - 10.5.1.1. Introduction
 - 10.5.1.2. Effects on Renal Function
 - 10.5.1.3. Considerations in Patients with Renal Pathology
 - 10.5.2. Liver Diseases
 - 10.5.2.1. Introduction
 - 10.5.2.2. Effects on Hepatic Blood Flow
 - 10.5.2.3. Hepatic Coagulopathy
 - 10.5.3. Diabetes Mellitus
 - 10.5.3.1. Introduction
 - 10.5.3.2. Effects on Glucose Homeostasis
 - 10.5.3.3. Peripheral Neuropathy in the Diabetic Patient
 - 10.5.4. Obesity
 - 10.5.5. Cancer

- 10.6. Regional Anesthesia in the Elderly
 - 10.6.1. Introduction and Definition of the Elderly
 - 10.6.1.1. Is Anesthetic Risk Increased in the Elderly?
 - 10.6.1.2. What is the Reason for this?
 - 10.6.1.3. How is this Organ Degradation Reflected at the Level of all Systems?
 - 10.6.1.4. Is the Metabolism of Anesthetic Drugs Altered in the Elderly Patient?
 - 10.6.1.5. What type of Interventions are Most Common in the Elderly?
 - 10.6.1.6. Is Regional Anesthesia Specially Indicated in these Patients?
 - 10.6.2. Physiologic Changes Associated with Aging and Considerations for Regional Anesthesia/Analgesia
 - 10.6.2.1. Nervous System Function
 - 10.6.2.2. Pulmonary Function
 - 10.6.2.3. Pharmacokinetic and Pharmacodynamic Changes in the Elderly
 - 10.6.2.4. Multimodal Pharmacotherapy and the Elderly
 - 10.6.2.5. Kidney
 - 10.6.2.6. Physiology and Perception of Pain in the Elderly
 - 10.6.3. Assessment of Pain in Elderly Patients with Cognitive Impairment
 - 10.6.4. Considerations for the Use of Regional and Neural Blockade
 - 10.6.5. Types of Regional Blocks in the Elderly
 - 10.6.5.1. Epidural Anesthesia and Analgesia
 - 10.6.5.2. Intrathecal Opioid Analgesia
 - 10.6.5.3. Peripheral Nerve and Nerve Plexus Blockage
- 10.7. Regional Anesthesia in Pediatrics
 - 10.7.1. Introduction
 - 10.7.1.1. Why Regional Anesthesia in Pediatric Patients?
 - 10.7.1.2. Applications of Pediatric Regional Anesthesia
 - 10.7.1.3. Regional Anesthesia: Awake or Asleep?
 - 10.7.2. Peculiarities of Pediatric Regional Anesthesia
 - 10.7.3. Neurostimulation
 - 10.7.3.1. Anatomical Differences Between Children and Adults
 - 10.7.3.2. Pharmacology of Local Anesthetics
 - 10.7.3.3. Dosage of Local Anesthetics
 - 10.7.3.4. Toxicity of Local Anesthetics
 - 10.7.4. Types of Peripheral Blocks
 - 10.7.4.1. Upper Limb Blocks
 - 10.7.4.2. Lower Limb Blocks
 - 10.7.4.3. Penile Block
 - 10.7.4.4. Ilioinguinal/Iliohypogastric Block
 - 10.7.4.5. Rectus Sheath Block or Umbilical Blockade
 - 10.7.4.6. Caudal Block
 - 10.7.5. Central Blocks
 - 10.7.5.1. Epidural Anesthesia
 - 10.7.5.2. Subarachnoid Anesthesia
 - 10.7.6. Complications of Pediatric Regional Anesthesia
- 10.8. Allergy and Regional Anesthesia
 - 10.8.1. Introduction
 - 10.8.1.1. Type A Reactions
 - 10.8.1.2. Type B Reactions
 - 10.8.1.3. Type C Reactions
 - 10.8.2. Epidemiology
 - 10.8.3. Pathophysiology
 - 10.8.3.1. Type I: Immediate Hypersensitivity or IgE Mediated Hypersensitivity
 - 10.8.3.2. Type II: Cytotoxic or IgG, IgM Mediated Reaction
 - 10.8.3.3. Type III: Immunocomplex-Mediated Reaction
 - 10.8.3.4. Type IV: Delayed Hypersensitivity or T-Cell Mediated reaction
 - 10.8.4. Etiology
 - 10.8.5. Signs and Symptoms
 - 10.8.6. Diagnosis
 - 10.8.7. Differential Diagnosis
 - 10.8.7.1. Reddening Syndrome
 - 10.8.7.2. Syndromes Associated with Substance Use
 - 10.8.7.3. Increased Endogenous Histamine Production
 - 10.8.7.4. Functional Criteria
 - 10.8.7.5. Others
 - 10.8.8. Treatment

- 10.9. Complications in Regional Anesthesia
 - 10.9.1. Introduction
 - 10.9.2. Complications following Neuroaxial Block Procedures
 - 10.9.2.1. Post Dural Puncture Headache
 - 10.9.2.2. Complications due to Air Injection. Pneumoencephalon
 - 10.9.2.3. Spinal Cord Compression
 - 10.9.2.4. Neurological Damage. Neurotoxicants
 - 10.9.2.5. Infectious Complications
 - 10.9.2.6. Iatrogenic Spinal Tumors
 - 10.9.2.7. Tattoos and Anesthetic Considerations
 - 10.9.3. Complications after Peripheral Nerve Blocks
 - 10.9.3.1. Introduction
 - 10.9.3.2. Preventive Measures
 - 10.9.3.3. Classification of Acute Nerve Injuries
 - 10.9.4. Mechanisms Capable of Producing Complications During the Performance of Nerve Blocks
 - 10.9.4.1. Mechanical Mechanism
 - 10.9.4.2. Vascular Mechanism
 - 10.9.4.3. Chemical Mechanism
 - 10.9.4.4. Infectious Mechanism
 - 10.9.4.5. Systemic Toxicity
- 10.10. Regional Anesthesia and Patient Safety
 - 10.10.1. Introduction
 - 10.10.2. How has Regional Anesthesia Evolved during these Years?
 - 10.10.3. Advantages and Disadvantages of the Different Types of Regional Anesthesia
 - 10.10.4. What is ISO 80369-6 and how does it Affect Regional Anesthesia?
 - 10.10.5. Comparison between Traditional Spinal Needles and the new NRFIT version
 - 10.10.6. Adjusted *checklist* for Regional Anesthesia
 - 10.10.7 SENSAR



Do not hesitate and opt for a program that not only adapts to your needs, but also to the requirements of Locoregional Anesthesia in medical practice at the highest professional level"

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



07

Certificate

The Professional Master's Degree in Locoregional Anesthesia Therapy guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree diploma issued by TECH Global University.



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Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This program will allow you to obtain your **Professional Master's Degree diploma in Locoregional Anesthesia** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

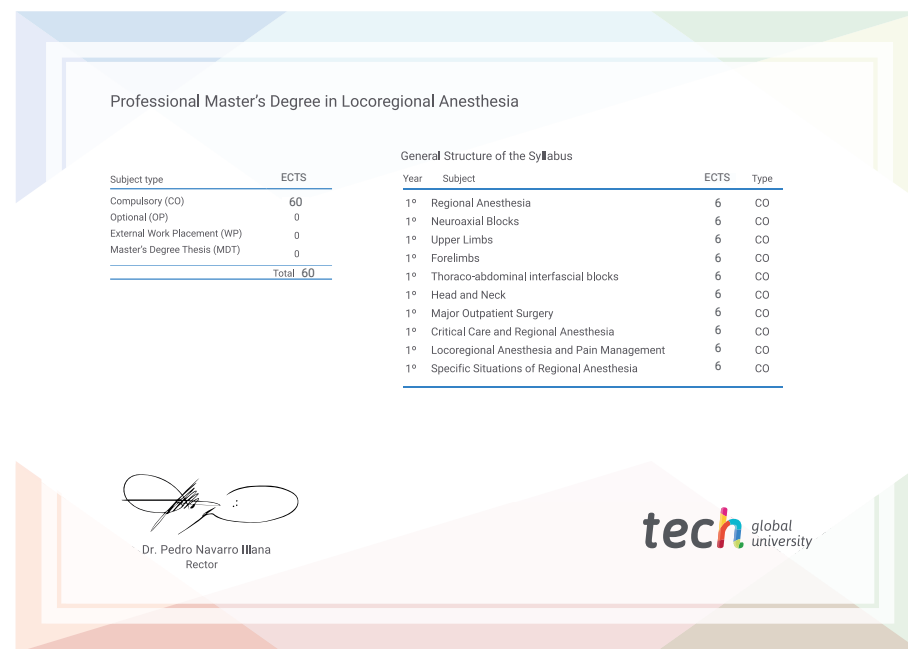
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Locoregional Anesthesia**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development language
virtual classroom



**Professional Master's
Degree**
Locoregional Anesthesia

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Professional Master's Degree

Locoregional Anesthesia