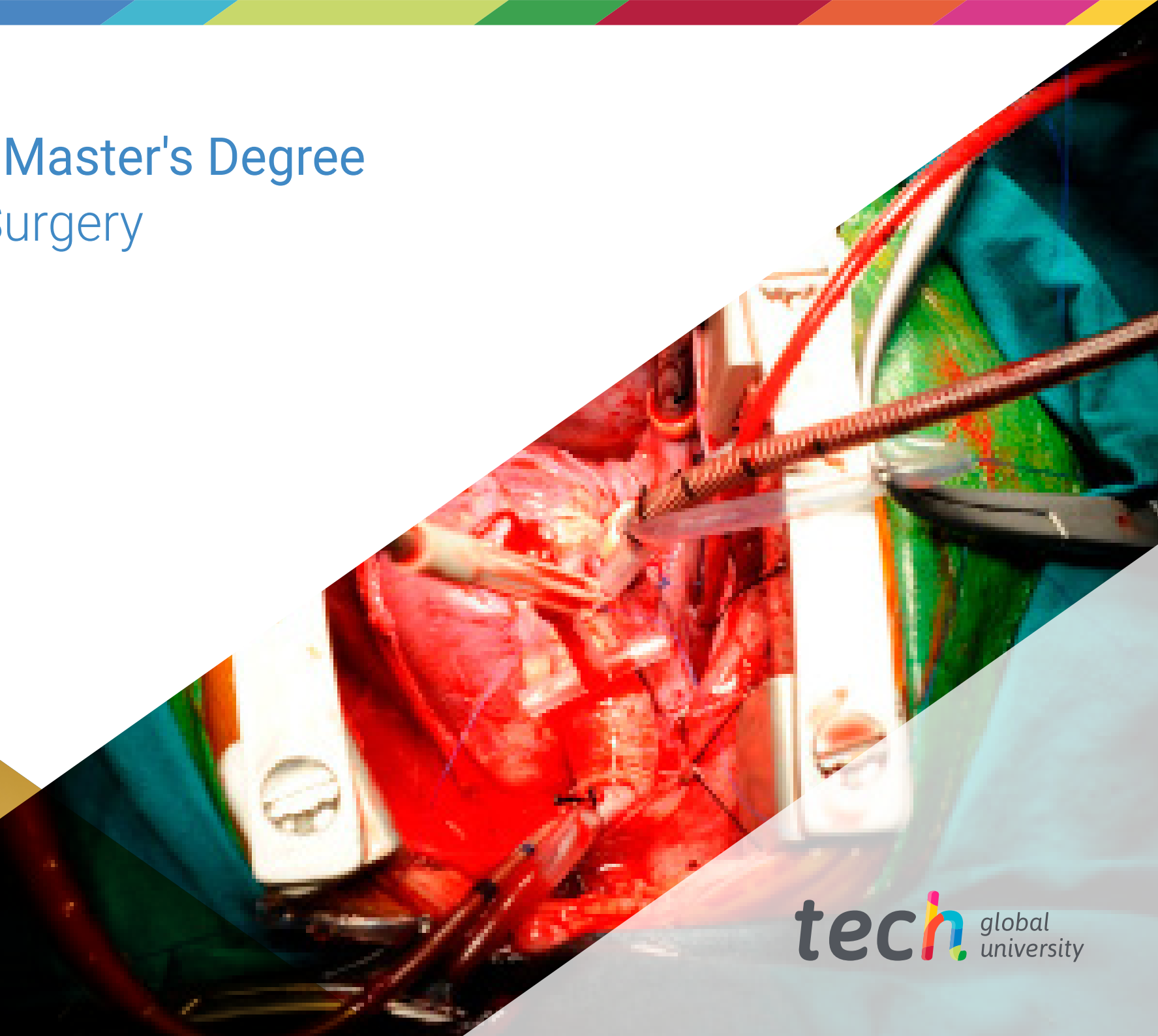


Advanced Master's Degree Pediatric Surgery





Advanced Master's Degree Pediatric Surgery

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Global University
- » Credits: 120 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/advanced-master-degree/advanced-master-degree-pediatric-surgery

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Skills

p. 16

04

Course Management

p. 20

05

Structure and Content

p. 52

06

Methodology

p. 86

07

Certificate

p. 94

01

Introduction

Pediatric Surgery faces challenges that require constant updating. For this reason, TECH has launched a complete and exhaustive completely online program, which offers an update in areas such as general pediatric, neonatal, urologic and oncologic surgery, among others. With a multidisciplinary approach, it addresses relevant topics such as pre- and postoperative management and patient management. The online modality of the program provides flexibility for medical professionals and specialists to adapt their learning to their own schedules and needs.



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It delves into the management of the surgical patient, trauma, fetal and neonatal surgery, pediatric urology, plastic surgery and pediatric oncology

The field of Pediatric Surgery currently faces various challenges that require constant updating by medical professionals and specialists. With a multidisciplinary approach, surgical pediatricians work closely with other health care professionals. In recent years, the specialty has faced technological advances, changes in clinical practices and therapeutic approaches, as well as new ethical and management challenges. Therefore, it is essential that Pediatric Surgery specialists stay up to date on the latest trends and advances in this area to provide the best possible care to their pediatric patients.

In order to assist this situation, TECH has created the Advanced Master's Degree in Pediatric Surgery, a highly specialized program that offers complete and updated teaching in this area of medicine. This program is justified based on the context in which the specialty is located, as technological advances and scientific research continue to evolve rapidly, requiring medical professionals and specialists to stay updated to provide optimal care to their patients.

Advanced Master's Degree in Pediatric Surgery is a continuing education option that allows medical professionals and specialists to update themselves on the latest advances and techniques in Pediatric Surgery. This program offers a comprehensive and updated approach in areas such as general pediatric surgery, neonatal surgery, oncologic surgery or urological surgery, among others. In addition, the program also addresses relevant topics such as pre- and postoperative management, clinical decision making, and management of complications.

One of the notable advantages of the Advanced Master's Degree in Pediatric Surgery is that it is a 100% online program, which provides flexibility to medical professionals and specialists to adapt their learning to their schedules and professional responsibilities. This allows participants to access program content from anywhere and at any time, which is especially beneficial for those who want to update but have time or geographic limitations. Additionally, the online format of the program allows access to a wide range of digital resources, including lectures, videos, clinical cases and study materials, which enriches the learning experience.

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

- ◆ The development of practical cases presented by experts in Pediatric Surgery
- ◆ Graphic, schematic, and practical contents which provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the process of self-assessment can be used to improve learning
- ◆ Special emphasis Dental is placed on innovative methodologies in the approach in Pediatric Patient
- ◆ 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.



Analyze the latest developments in endoscopy, laparoscopy, thoracoscopy, robotic surgery and more surgical techniques in the Advanced Master's Degree in Pediatric Surgery at TECH”

“

Update yourself on the latest techniques and advances in Pediatric Surgery, especially in pediatric oncological surgery, tumors, skeletal dysplasias, syndromic diseases and more”

It includes in its teaching staff professionals belonging to the field of pediatrics, who pour their work experience into this program, as well as recognized specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

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

Get up to date on children's orthopedics, upper limb, hip, spine, foot pathology and more, providing a comprehensive approach to the management of orthopedic disorders in children and adolescents.

Delve into the most up-to-date knowledge of Pediatric Surgery.



02

Objectives

The objectives of the Grand Master in Advanced Master's Degree in Pediatric Surgery are designed to offer medical professionals and specialists comprehensive and updated teaching in the various areas of pediatric surgery, addressing topics such as general and digestive surgery, fetal and neonatal surgery, pediatric urology, surgical head and neck or children's orthopedics, among others.





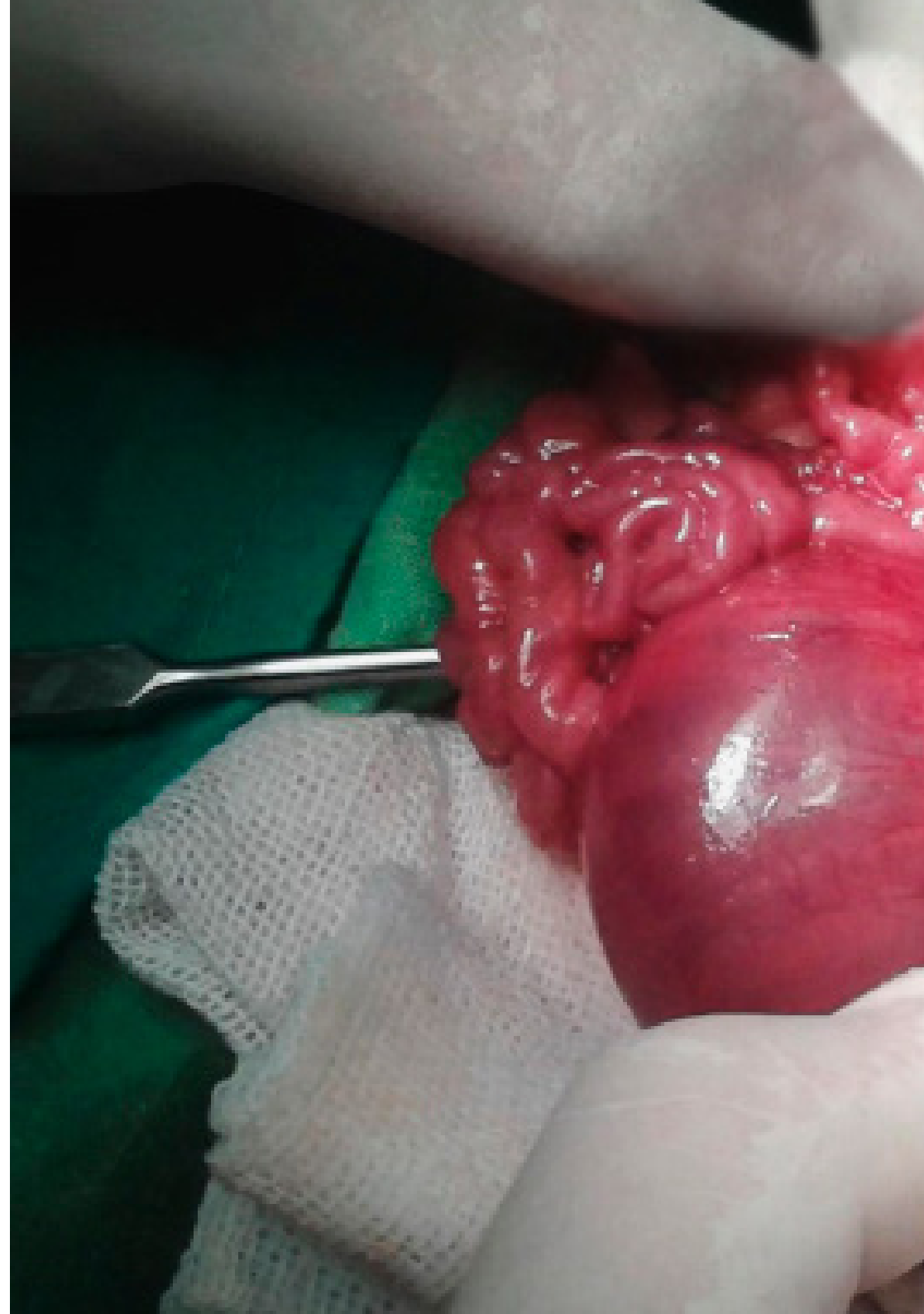
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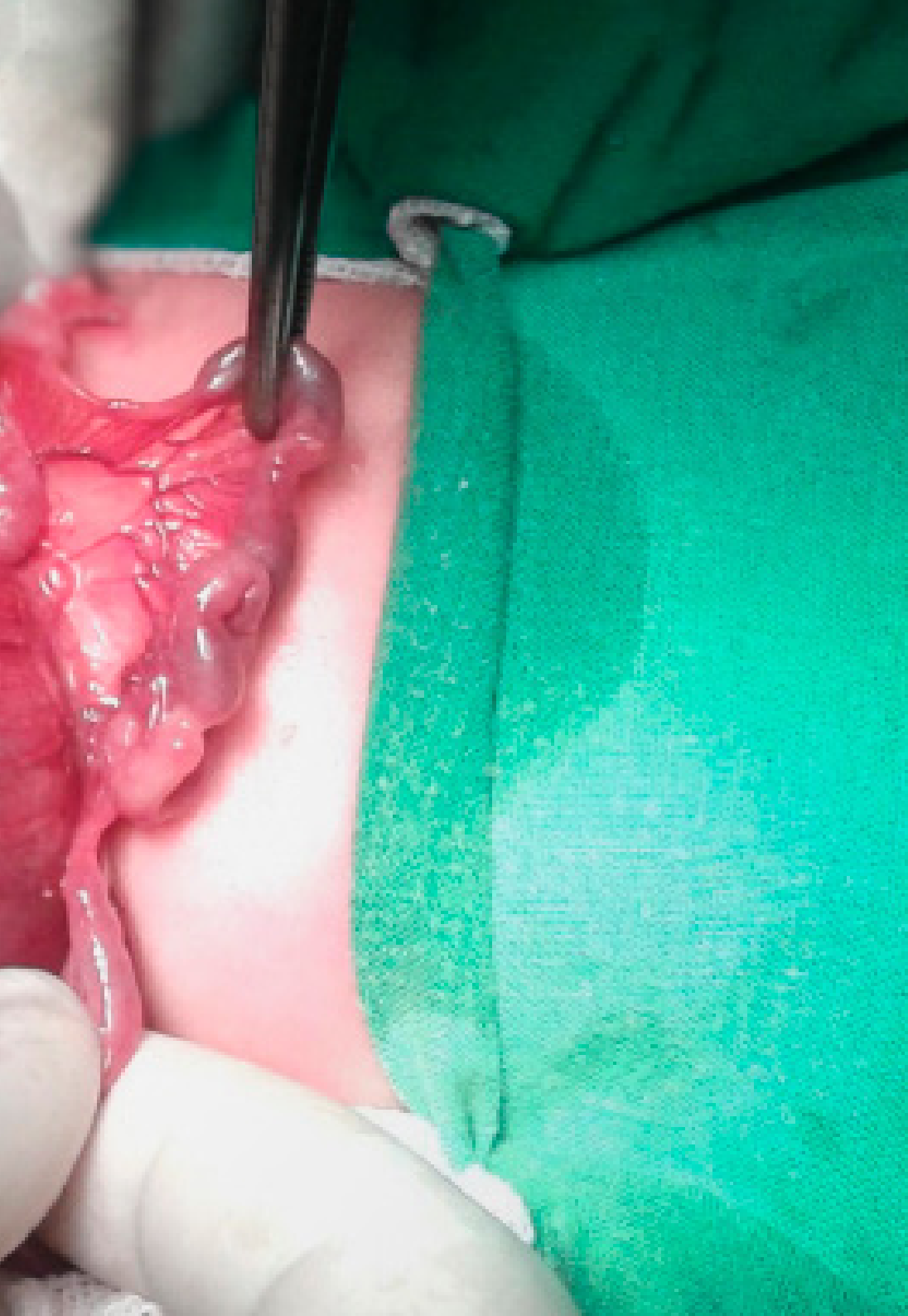
The Advanced Master's Degree in Pediatric Surgery gives you the opportunity to acquire updated skills and knowledge in a specialty that is constantly evolving”



General Objectives

- ◆ Develop specialized knowledge and current treatments in pediatric surgery
- ◆ Compile the different diagnostic methods, as well as the different therapeutic options, both medical and surgical, depending on the pathology
- ◆ Expose the possible associated complications and the prognosis of these diseases
- ◆ Establish current treatment guidelines for each of the pathologies described
- ◆ Complement the training of specialists in Pediatric Surgery with special interest in minimally invasive techniques: pediatric laparoscopy and endoscopy
- ◆ Adequately prepare these professionals to face with guarantee and quality the different pediatric pathologies that can be addressed through these access routes
- ◆ Enable students to offer professional assistance supported by an accredited teaching program
- ◆ Knowing how to carry out a good assessment of the child, starting with the anamnesis, a tool that is often underused but essential, a structured and complete examination that, depending on the age, will have different perspectives
- ◆ Become familiar with the management of the different congenital and/or acquired alterations affecting the upper limb of growing patients
- ◆ Delve into the complementary studies that help diagnose and make decisions, as well as the appropriate moment to perform them
- ◆ Manage therapeutic options, as well as the treatment schedule





- ◆ Apply different surgical techniques used to treat various pathologies
- ◆ Become familiar with the pathology, clinical presentation and management of the most common benign and malignant tumors of the upper extremity affecting children
- ◆ Recognize and manage the major diseases of the hip that affect children
- ◆ Manage the examination and diagnosis of hip pathology in children according to their age and the prevalence associated with it
- ◆ To review the most important pathologies that occur in pediatric orthopedics, as knowledge of them is the fundamental pillar of this speciality
- ◆ To learn about the latest advances in the treatment of these classic pediatric orthopedics diseases
- ◆ Become familiar with the diagnosis, treatment and prognosis of orthopedic and traumatological knee pathologies in children and their particular characteristics compared to adults



Specific Objectives

Module 1. Pediatric Surgery Surgical Patient Management Trauma. Robotics in Pediatric Surgery

- ◆ Generate knowledge in health care bioethics
- ◆ Analyze the most recent advances in laparoscopic surgery and robotic surgery
- ◆ Determine the pre- and postoperative nutritional management of the surgical patient
- ◆ Acquire the necessary knowledge to establish the different modes of special nutrition, enteral, parenteral and other feeding routes
- ◆ Substantiate the concept of Bioethics. Establishment of a limitation of therapeutic effort and palliative care
- ◆ Examine the latest updates in laparoscopic surgery and share initial experiences in the introduction of robotic surgery applied to pediatric surgery, as well as in the fields it applies

Module 2. Laparoscopy General and Digestive I

- ◆ Examine new techniques and tests available for diagnosing disorders motility and functional
- ◆ Delve into esophageal functional tests, especially the less common ones such as impedancemetry and esophageal manometry
- ◆ Analyze the treatments with the best results in esophageal replacement
- ◆ Determine the most frequent pathologies with diagnostic techniques and current therapies

Module 3. Pediatric surgery General and Digestive II

- ◆ Determine the main digestive and liver pathologies that can occur in pediatrics, including inflammatory bowel disease, short bowel syndrome and intestinal transplantation, coloproctology as well as hepatobiliary diseases and liver transplantation
- ◆ Acquire specialized knowledge about IBD and development of the different therapeutic options that can be applied
- ◆ Determine the different causes that can cause intestinal failure. Driving of short bowel syndrome in all its stages
- ◆ Establish the management of patients with anorectal malformations or disease by Hirschsprung
- ◆ Analyze the functional tests used in coloproctology, with special emphasis on anorectal manometry and its different indications
- ◆ Examine the most common hepatobiliopancreatic pathology

Module 4. Pediatric Fetal and Neonatal Surgery

- ◆ Develop the concept of fetal medicine and point out the necessary participation of the pediatric surgeon in the diagnosis and treatment of malformation pathology during the fetal period
- ◆ Analyze normal embryological development and know its alterations that condition the main neonatal congenital malformations
- ◆ Examine surgical pathologies acquired in the neonatal period and know their differential diagnosis

- ♦ Analyze the evolutionary and prognostic advice of the main perinatal congenital pathologies for the parents of the affected fetus
- ♦ Propose a guide to material and human resources for surgical procedures in neonatal intensive care units
- ♦ Examine the main international consensus guidelines on the perinatal management and follow-up of pathologies treated in the neonatal period, mainly esophageal atresia, congenital diaphragmatic hernia and anorectal malformation
- ♦ Substantiate the current clinical, analytical and radiological criteria for the evaluation of infectious intestinal processes acquired in the neonatal period
- ♦ Establish current protocols for the management and treatment of the syndrome short intestine as a sequel to neonatal surgical pathologies

Module 5. Head and Neck Surgery

- ♦ Analyze normal embryological development and its alterations that condition congenital malformations of the face, neck and their structures
- ♦ Examine the most common congenital pathologies, their anatomy and their pathological implications
- ♦ Present, systematically, the treatment of cleft lip and palate and malformation syndromes of the fusion of facial structures
- ♦ Analyze the tumor pathologies that occur at the facial and tumor level
- ♦ Determine the treatment of infectious pathologies in the region
- ♦ Establish guidelines for action in the event of secondary malformations

- to alterations in the development of the branchial arches
- ♦ Specify treatments for pathologies of the glands in the region oral and cervical
- ♦ Systematize the approach to pathologies of the cervical lymph nodes
- ♦ Put in order airway alterations and their treatment
- ♦ Train the pediatric surgeon to diagnose and treat pathologies of the cervico-facial region

Module 6. Pediatric Surgery Airway and Chest

- ♦ Determine the most frequent congenital and acquired pathologies and know your differential diagnosis
- ♦ Establish the current therapeutic possibilities in the management of chest wall malformations
- ♦ Establish current guidelines in the management of airway pathology in the pediatric patient
- ♦ Acquire skill in the management of congenital bronchopulmonary malformations
- ♦ Address appropriate therapeutic management in acquired pleuropulmonary pathology
- ♦ Examine the appropriate management of thoracic malformations within the wide range of surgical and conservative techniques available in the present
- ♦ Assess the advances, experience, results and prognosis of the different treatments available in airway pathology

- ◆ Develop adequate management in the prenatal and postnatal treatment of bronchopulmonary malformations with adequate prenatal counseling
- ◆ Determine the thoracoscopic approach and the specific surgical techniques used for every child pathologies
- ◆ Generate skills in the use of endoscopy, bronchoscopy and laryngoscopy techniques, which provide essential information for the diagnosis and treatment of respiratory diseases in childhood

Module 7. Pediatric Urology I. Upper urinary tract. Pathology and Surgical Techniques

- ◆ Determine the management of pathologies in pediatric urology (theoretical-practical) through the approach to diagnosis, treatment and monitoring of the patient, in the prenatal and postnatal periods
- ◆ Analyze the knowledge and management of the different surgical techniques (endoscopic, laparoscopic and percutaneous) for the care of patients with childhood urological pathology
- ◆ Determine the most frequent congenital pathologies in the kidney
- ◆ Differentiate obstructive pathology from reflux pathology
- ◆ Generate knowledge in kidney surgery
- ◆ Review percutaneous, pneumovesicoscopic, and retroperitoneoscopic renal surgery
- ◆ Evaluate the different access methods of percutaneous approach in the pediatric patient
- ◆ Develop the different types of lithotripsy used in kidney stones

Module 8. Urology Pediatrics II. Urinary Tract Infections Lower

- ◆ Analyze the management of congenital and acquired lower urinary tract pathologies in pediatric urology (theoretical-practical), through the approach in the diagnosis, treatment and monitoring of the patient both in the prenatal and postnatal periods
- ◆ Develop the pediatric neuropathic bladder
- ◆ Differentiate diagnostic and therapeutic techniques used to resolve congenital and acquired pathologies
- ◆ Examine the current situation of pediatric neuropathic bladder
- ◆ Analyze the pathophysiology of the pathology
- ◆ Determine the management of bladder exstrophy and epispadias
- ◆ Present the child's genital pathology

Module 9. Pediatric Plastic Surgery

- ◆ Develop congenital soft tissue pathology, its embryonic development and its implications in children and adolescents, and acquired soft tissue pathology, its epidemiology and its implications in children and adolescents
- ◆ Substantiate and classify vascular anomalies by updating protocols of treatment
- ◆ Determine the comprehensive management of the pediatric burn patient, peculiarities depending on age and type of burn
- ◆ Classify anomalies of the auricle and their therapeutic options
- ◆ Assess the different ways of undertaking the closure of wounds and defects on the skin and soft tissues
- ◆ Learn to diagnose and lay the foundations for the treatment of rare acquired injuries in children and adolescents

Module 10. Pediatric Oncology Surgery

- ◆ Generate specialized knowledge about the most common solid neoplasms in pediatrics
- ◆ Determine the appropriate diagnostic approach to different pediatric neoplasms
- ◆ Establish appropriate treatment strategies for each of these tumors
- ◆ Evaluate the main causes of surgical emergencies in pediatric oncology and to clarify the surgical indications in these cases
- ◆ Fundamentals of basic principles in Pediatric Oncology
- ◆ Analyze the tumor pathologies that occur in the pediatric age
- ◆ Update staging and treatment protocols
- ◆ Systematize the surgical approach to tumor pathologies in the pediatric age
- ◆ Generate specialized knowledge on the main biopsy techniques in pediatric oncologic patients
- ◆ Familiarize the pediatric surgeon for the diagnosis and surgical treatment of the main pediatric tumors
- ◆ Provide an update on fertility preservation techniques in the pediatric oncology patient

Module 11. Genitourinary Endoscopy

- ◆ Handle urological endoscopic instruments, to through cystoscopy and ureterorenoscopy, in order diagnose and treat many urological pathologies
- ◆ Many pathologies affecting the renoureteral system are managed endoscopically, so it is essential to know how to perform these procedures correctly
- ◆ Know the genitourinary malformations that require endoscopic exploration and treatment

Module 12. Endoscopy Via Digestive Tract

- ◆ Describe digestive endoscopy as a diagnostic and therapeutic method in treating pediatric digestive tract pathology
- ◆ Provide knowledge of the therapeutic techniques used in esophagogastroscopy and colonoscopy

Module 13. Airway Endoscopy

- ◆ Know the instrumentation necessary to perform rigid and flexible bronchoscopy in the pediatric patient
- ◆ Study the pathology susceptible to treatment by this route and the endoscopic techniques that are applied for its treatment

Module 14. Laparoscopy thoracoscopy and cervicothoracic surgery

- ◆ Describe the thoracic pathologies currently treated by thoracoscopy
- ◆ Know the thoracoscopic approach and the specific surgical techniques used for every child pathologies
- ◆ Understand the specific anesthetic conditions that the patients require while undergoing these treatments

Module 15. Laparoscopy General and Digestive I

- ◆ Be able to handle with ease and obtain knowledge about all the pathology included in general surgery that can be treated by laparoscopy

Module 16. Laparoscopy Surgery General and Digestive II

- ◆ Delve into the different laparoscopic surgical techniques that can be applied to different pathologies according to different authors Application

Module 17. Oncologic Laparoscopy: Gonadal Laparoscopy

- ◆ Know transperitoneal and retroperitoneal laparoscopy in depth, and know which route is appropriate for the approach of urological pathologies, taking into account that one or the other is usually used depending on the patient, personal experience or the tendency of each service
- ◆ Study pediatric urological pathologies and the laparoscopic techniques used to treat them
- ◆ Learn about pneumovesicoscopy as an alternative for the treatment of some specific urological pathologies

Module 18. Urology

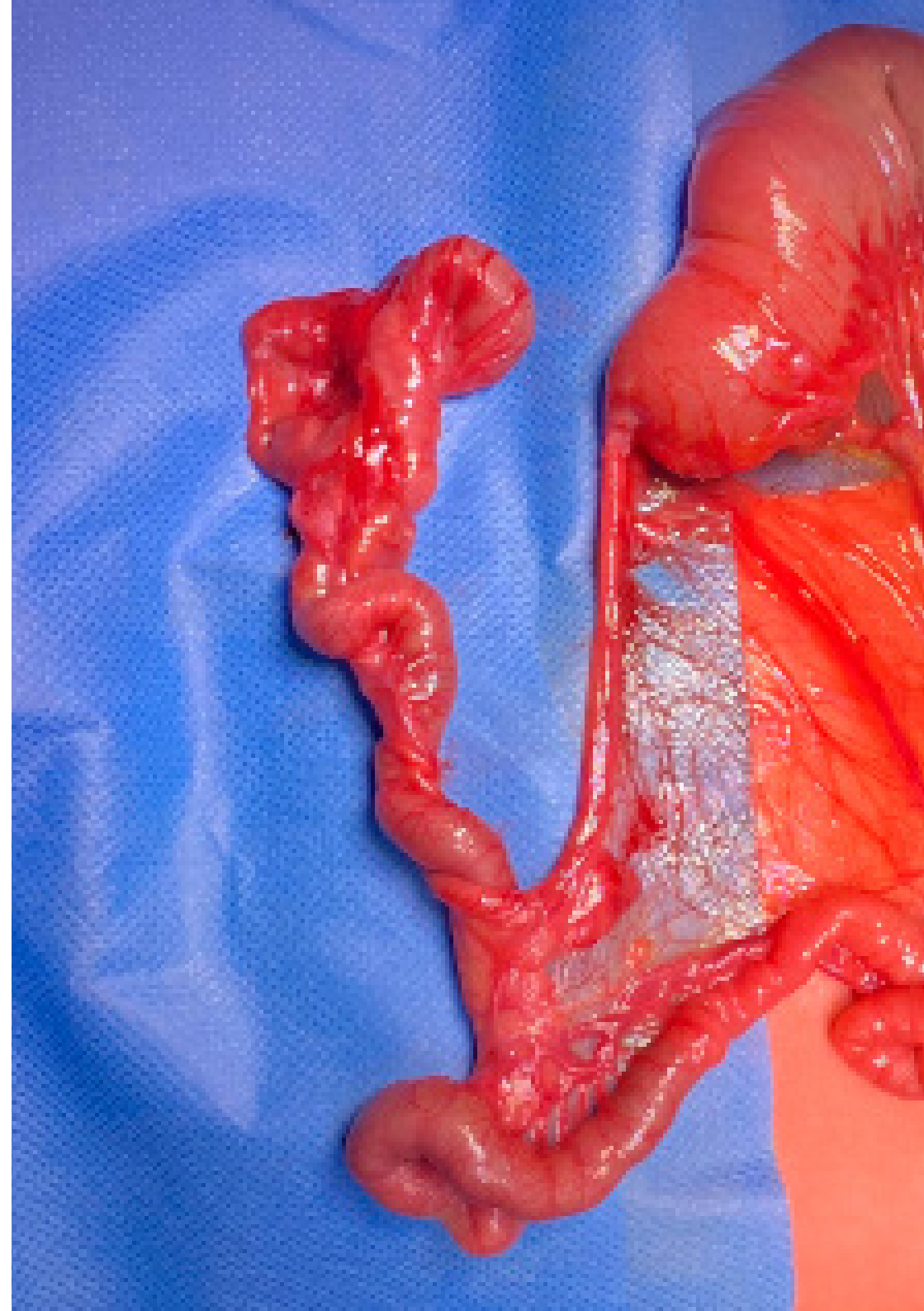
- ◆ Study the different gynecological pathologies in pediatrics and the laparoscopic surgical techniques to solve them

Module 19. Neonatal and fetal surgery

- ◆ Learn the peculiarities of laparoscopic neonatal surgery, such as the size of the laparoscopic instruments, certain pathologies exclusive to this age group and the surgical techniques used in neonatal pathology
- ◆ Know those neonatal malformations that are attempted to be corrected prenatally and to know which ones require prenatal management and how to approach them

Module 20. Abdominal Surgery through Single Port

- ◆ Have an in-depth knowledge of laparoscopic surgery, to know which techniques can be performed with it and what are its advantages and limitations This surgery is the maximum expression of laparoscopic minimally invasive surgery and allows different procedures to be performed through it





Module 21. Child Orthopedics

- ◆ Take a detailed medical history and a complete, orderly and systematic examination of pediatric patients
- ◆ Distinguish physiological from pathological development, as well as their radiological characteristics
- ◆ Learn the complementary tests and radiological characteristics of bone growth
- ◆ Learn the intricacies of the etiopathogenesis of deformities in the lower limb axis
- ◆ Anticipate and correct potential deformities
- ◆ Differentiate and know how to treat musculoskeletal pathologies associated with normal child development
- ◆ Apply the basics of fracture treatment in pediatric patients

Module 22. Upper Limb

- ◆ Delve into the knowledge of the origin and embryology of the different congenital malformations
- ◆ Become familiar with the different congenital malformations, studying etiopathogenesis, clinical studies, complementary studies, classifications and treatments of each pathology

Module 23. Hip

- ◆ Manage the diagnosis, examination and treatment of hip dysplasia, taking into account the different ages of children
- ◆ Delve into hip exploration, which is essential in neonatal screening
- ◆ Understand Perthes' disease with clear management ideas, differentiating between outdated treatments and new perspectives on the disease
- ◆ Make an early diagnosis of adolescent hip pathology, which is crucial for the survival of the hip in adulthood, and learning how to manage it properly, including complex hip reduction surgeries
- ◆ including complex reduction surgeries to reduce the size and shape of it
- ◆ Learn to recognize coxa vara and spring hip and assess their clinical implications for receiving proper treatment

Module 24. knee

- ◆ Learn to distinguish the clinical-radiological characteristics of patients with discoid meniscus
- ◆ Differentiate the types of discoid meniscus
- ◆ Perform a differential diagnosis of popliteal cysts
- ◆ Recognize the clinical, radiological and epidemiological features of Osgood-Schlatter disease
- ◆ Identify possible warning signs of Osgood-Schlatter disease
- ◆ Perform an adequate diagnosis of patellofemoral instabilities
- ◆ Learn the osteochondral lesions of children
- ◆ Delve into the implications of cruciate ligament rupture in children
- ◆ Manage fractures around the knee
- ◆ Differentiate between stable and unstable fractures for correct treatment

Module 25. Pathology of the Foot

- ◆ Gain in-depth knowledge of the etiopathogenesis of foot malformations and deformities
- ◆ Diagnose through anamnesis and physical examination
- ◆ Apply the complementary tests required for diagnosis, and primarily be able to assess and describe the radiographic images in the different pathologies
- ◆ Interpret when different diagnostic tests are appropriate
- ◆ Gain in-depth knowledge on treating each pathology. Learn the common techniques of manipulation and casting in the pediatric age, as well as the different surgical techniques required to treat each pathology
- ◆ Learn the natural history and evolution of each process

Module 26. Spine

- ◆ Learn the characteristics of the different pathologies around the spine in pediatric patients
- ◆ Learn the most frequent causes of spine deformity
- ◆ Manage the urgency of pediatric patients with spinal pathology, torticollis, atlantoaxial instability
- ◆ Conduct a long-term management of patients diagnosed with spinal deformity in infancy
- ◆ Conduct a long-term management of patients diagnosed with tumors / fractures during infancy
- ◆ Suspect and learn the management of tumors such as osteoid osteoma, aneurysmal bone cyst, etc
- ◆ Perform the necessary tests to diagnose the different entities

Module 27. Spine

- ◆ Learn available knowledge on the prevention and management of hip dislocation
- ◆ Learn the management algorithms for each pathological gait pattern
- ◆ Make decisions using three-dimensional motion analysis
- ◆ Delve into surgical techniques by anatomical segments
- ◆ Learn the application of orthoses and rehabilitation after multilevel surgery

Module 28. Skeletal Dysplasias and Syndromic Diseases

- ◆ Specialize in the etiology and pathogenic theories of bone dysplasias and congenital malformations of the lower limbs
- ◆ Perform an accurate assessment of the different diagnostic tests
- ◆ Delve into the natural history and evolution expectancy of each process
- ◆ Gain in-depth knowledge of the different treatment methods and the best moment to carry them out, depending on the pathology

Module 29. Osteoarticular Infections

- ◆ Learn the microbiologic characteristics of the different infectious musculoskeletal pathologies in pediatric patients
- ◆ Delve into the most prevalent germs that cause infectious pathology
- ◆ Develop a correct strategy for the differential diagnosis of diseases that cause lameness in pediatric patients
- ◆ Learn the emergency management of pediatric patients with infectious musculoskeletal pathologies

- ◆ Gain in-depth knowledge on the hospital management of patients admitted for musculoskeletal infections
- ◆ Apply the long-term management of patients diagnosed with musculoskeletal infections during infancy
- ◆ Manage and identify other non-infectious arthropathies, as well as their management in pediatric patients
- ◆ Suspect and learn how to manage recurrent multifocal osteomyelitis

Module 30. Tumours

- ◆ Appropriately guide the diagnostic study of this lesion and, if a musculoskeletal biopsy is necessary, learn how to perform it
- ◆ Learn the latest up-to-date treatments for the main musculoskeletal injuries in children



A program that will give you access to the latest scientific postulates in the field"

03 Skills

Advanced Master's Degree in Pediatric Surgery is designed to develop key competencies that allow participants to reach a level of excellence in their professional practice. Through a practical and up-to-date approach, participants will acquire advanced skills in various pediatric surgical techniques, such as endoscopy, laparoscopy, thoracoscopy and robotic surgery. In addition, the program addresses the comprehensive management of the pediatric surgical patient, from preoperative evaluation to postoperative care, including management of complications and appropriate clinical decision making.



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Advanced Master's Degree in Pediatric Surgery gives you the opportunity to acquire advanced skills in pediatric surgical techniques, focusing on minimally invasive treatments"



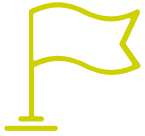
General Skills

- ◆ Analyze the most common pediatric pathologies in the surgical field and to establish a plan of action accordingly
- ◆ Experience with the most advanced surgical techniques in pediatrics
- ◆ Determine the most frequent congenital pathologies, their pathophysiology and pathological implications
- ◆ Specify the indications and rational use of complementary laboratory and radiological studies, both in the prenatal and postnatal period
- ◆ Manage treatment options in pathological wound healing
- ◆ Know how to use minimally invasive techniques: Pediatric laparoscopy and endoscopy
- ◆ Be able to deal with the different pediatric pathologies that can be addressed through these pathways
- ◆ Review the most important pathologies that occur in pediatric orthopedics
- ◆ Advise patients and family members on the use and benefits of orthopedic products
- ◆ Apply learning to explore and diagnose knee pathologies in children, losing the usual fear generated in many specialists due to lack of knowledge of the pathology
- ◆ Recognize the different pathologies of children's feet and be able to make an accurate diagnosis together with a suitable therapeutic approach
- ◆ Describe the main aspects of spinal pathology in pediatric patients





- ◆ Review advances and update knowledge on the management of spinal pathologies in pediatric patients
- ◆ Develop the necessary skills to appropriately diagnose and treat pediatric patients with spinal diseases
- ◆ Learn the treatment by applying physiopathological principles
- ◆ Explore physical examinations integrated with three-dimensional movement analysis
- ◆ Manage functional and quality of life classifications and scales
- ◆ Develop the necessary skills to appropriately diagnose and treat pediatric patients with infectious musculoskeletal diseases and other arthropathies
- ◆ Learn how to make a comprehensive and early diagnosis, and guide the treatment of the main musculoskeletal injuries that appear in children



Specific Skills

- ◆ Manage trauma in children, with indications for conservative or surgical treatment
- ◆ Establish the treatment of gastroesophageal reflux with current technology
- ◆ Treat any digestive pathology with techniques of both open and minimally invasive
- ◆ Manage current treatment guidelines for the main congenital and acquired neonatal pathologies
- ◆ Identify the most frequent inflammatory pathologies and infections that affect to the face and neck
- ◆ Establish current treatment guidelines for each of the pathologies of the cervicofacial region
- ◆ Propose diagnosis and treatment protocols in urological pathologies
- ◆ Address congenital and acquired pathology of the hand and breast
- ◆ Manage the main biopsy techniques in pediatric oncology patients
- ◆ Know how to use the endoscopic techniques applied for the treatment of pediatric pathology, as well as how to perform rigid and flexible bronchoscopy in pediatric patients
- ◆ Understand digestive endoscopy as a diagnostic and therapeutic method in the treatment of pediatric digestive tract pathology
- ◆ Apply knowledge of the therapeutic techniques used in esophagogastrosopy and colonoscopy and colonoscopy criteria into daily practice
- ◆ Handle urological endoscopic instruments with ease
- ◆ Be able to correctly perform the procedures that are managed endoscopically in pathologies of the renoureteral system
- ◆ Recognize the genitourinary malformations that require endoscopic exploration and treatment
- ◆ Be able to deliver the thoracoscopic approach and the specific surgical techniques for each of the children's pathologies from it
- ◆ Know how to apply the different laparoscopic surgical techniques depending on the pathology
- ◆ Be able to perform transperitoneal and retroperitoneal laparoscopy in pediatric patients
- ◆ Recognize pediatric urological pathologies, the laparoscopic techniques used to treat them
- ◆ Recognize the different gynecological pathologies in pediatrics and to know which laparoscopic surgical techniques to solve them
- ◆ Mastering laparoscopic neonatal surgery
- ◆ Recognize neonatal malformations
- ◆ In-depth knowledge of laparoscopic surgery
- ◆ Know which techniques can be performed with it and what its advantages and limitations are
- ◆ Make a full differential diagnosis of a pathology as frequent as lameness in children

- ◆ Evaluate the possibilities of treating tumors affecting children's hands, including surgical treatment, resections, amputations and reconstructions
- ◆ Differentiate fractures and know how and when to treat them, as well as the surgical indications versus conservative treatment of fractures
- ◆ Delve into the diagnosis and early treatment of congenital knee dislocation
- ◆ Learn to interpret when different diagnostic tests are suitable
- ◆ Develop a correct strategy in the differential diagnosis of pathologies that cause spinal pain in pediatric patients
- ◆ Manage spasticity, locally and globally, as well as other movement disorders
- ◆ Perform a correct anamnesis, physical examination and interpretation of imaging and laboratory tests required for diagnosis
- ◆ Be able to perform the necessary tests to diagnose the different infectious entities
- ◆ Learn how to differentiate a lesion with aggressive clinical and radiological characteristics from a non-aggressive one



The program will provide you with the necessary skills to comprehensively approach the pediatric surgical patient, including pre-care management, and postoperative, making appropriate clinical decisions and identifying and management of complications”

04

Course Management

The faculty of the Advanced Master's Degree Pediatric Surgery are highly trained professionals with extensive experience in the field of pediatric surgery. They are recognized experts in their respective areas of specialization, including general surgery, pediatric urology, pediatric orthopedics, among others. Participants will have the opportunity to learn from these high-level professionals, who will share their knowledge, skills and best practices in surgical pediatrics.



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All faculty will share their knowledge and experience so you can stay up to date with the latest trends and advances in pediatric surgery”

International Guest Director

Dr. Mehul V. Raval is a pediatric surgeon specializing in improving outcomes and quality of care for children requiring surgical interventions. As such, his work has encompassed General Pediatric Surgery, Thoracic Surgery and Surgical Oncology, with expertise in Minimally Invasive Techniques and Neonatal Surgery. In addition, his primary interests include the implementation of enhanced recovery protocols, patient safety and value-based surgical care.

Throughout his career, he has served as Director of Research in the Division of Pediatric Surgery and as Director of the Center for Outcomes Research and Public Health at Ann & Robert H. Lurie Children's Hospital, Chicago. He has also played key roles in surgical quality improvement nationally, collaborating on projects with the Food and Drug Administration (FDA) and the Agency for Healthcare Research and Quality (AHRQ), as well as leading research on the effectiveness of surgical procedures in children's hospitals.

Internationally recognized, he has contributed significantly to the development of the American College of Surgeons National Pediatric Surgical Quality Improvement Program (ACS-NSQIP-P), currently implemented in more than 150 hospitals in the United States. In turn, he has received numerous grants from prestigious organizations, such as the National Institutes of Health (NIH), and has served on several committees of medical organizations, including the American Association for Pediatric Surgery and the American Academy of Pediatrics.

In addition, Mehul V. Raval, M.D., has authored more than 170 peer-reviewed articles and book chapters. In fact, his research ranges from clinical trials to outcome measurement and patient safety. As a surgeon, he has strived to help children recover optimally.



Dr. Raval, Meहुल V.

- Director of Pediatric Surgery at Ann & Robert H. Lurie Children's Hospital, Chicago, United States
- Director of the Center for Outcomes Research and Public Health at Ann & Robert H. Lurie Children's Hospital
- Vice Chair of Quality and Safety at Ann & Robert H. Lurie Children's Hospital
- Chair of the Board of Pediatric Surgery at the Orvar Swenson Foundation
- Doctor of Medicine, Wake Forest University
- Master of Science in Clinical Research, Northwestern University
- B.S. in General Biology from the University of North Carolina
- Member of:
 - American Pediatric Surgical Association
 - American Academy of Pediatrics

“

Thanks to TECH, you will be able to learn with the best professionals in the world”

International Guest Director

Mininder Kocher is an internationally prominent pediatric orthopedic surgeon. His professional merits and results have been recognized with numerous awards, including the Kappa Delta award, considered the “Nobel Prize” in this surgical field. In addition, he practices as a specialist at Harvard Medical School.

The scientist also holds the program of Chief of the Division of Sports Medicine at Boston Children’s Hospital. From that entity, he deals with different complex pathologies such as **joint injuries, Osteomyelitis, Hip Labral Rupture, Osteochondritis Dissecans or Pigmented Villonodular Synovitis**, among others. His innovations in these areas of Orthopedic Medicine are reflected in more than 150 academic articles published in first impact indexed journals. He is also the author of more than 100 chapters in books and is the sole author of 4 books. His texts have become an indispensable reference for the medical community, highlighting his undeniable contributions to the field.

Dr. Mininder Kocher’s impact extends beyond the borders of the United States, as he serves as a **consultant and advisor to hospitals and universities in more than 20 countries**. Moreover, he has been listed as one of the top surgeons in the world on platforms such as US News & World Report, Castle Connelly, Top Doctors and Boston Magazine. Likewise, his skills and experiences have been the subject of attention in reference media such as the New York Times, Wall Street Journal, USA Today, Boston Globe, Chicago Tribune, Scientific American, among others.

Especially committed to the rehabilitation of children and adolescent athletes, his exhaustive work in this area has been decorated with awards as prominent as the **Von Meyer, Richard Kilfoyle, Angela Kuo or Arthur Heune awards**.



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- ◆ Master in Minimally Invasive Surgery in pediatria the CEU University
- ◆ Specialist in Pediatric Surgery at Octubre University Hospital
- ◆ Degree in Medicine and General Surgery at the Complutense University of Madrid

Dr. Álvaro Alonso, Alberto

- ◆ Neurosurgery Consultation Coordinator, Gregorio Marañón General University Hospital. Madrid
- ◆ Medical specialist in Traumatology and Orthopedic Surgery. Gregorio Marañón General University Hospital.. Madrid
- ◆ Degree in Medicine from the Complutense University of Madrid

Dr. Alves, Cristina

- ◆ Physician at the Children's Orthopedic Surgical Unit of the Pediatric Hospital of Coimbra
- ◆ Attending physician at the Neurosurgery Unit of the Hospital Infantil Universitario Niño Jesús
- ◆ Orthopedic Physician in the Pediatric Orthopedics Service. Pediatric Hospital - CHUC, EPE

Dr. Budke Neukamp, Marcelo

- ◆ Specialist in Neurosurgery at Hospital Ruber Internacional
- ◆ Head of the Epilepsy Unit. Niño Jesús Pediatric University Hospital of Madrid
- ◆ Neurosurgeon at La Luz Hospital in Madrid
- ◆ PhD in Surgery, Autonomous University of Madrid
- ◆ Degree in Medicine and Surgery from the Faculty of Medicine of the Federal De Pelotas University in Río Grande do Sul (Brazil)
- ◆ Graduated in Neurosurgery at the Cleveland Clinic in the United States
- ◆ Neurosurgeon at the Institut Mutualiste Montsouris de Paris
- ◆ Member of the Spanish Neurosurgery Society

- ◆ Member of the Spanish Society of Pediatric Neurosurgery

Dr. Cabello Blanco, Juan

- ◆ Pediatric at Hospital Ruber Internacional
- ◆ Specialist in Orthopedic Surgery and Traumatology. Residency at the La Paz University Hospital of Madrid
- ◆ Degree in Medicine from the Complutense University of Madrid
- ◆ Specialist in Pediatric Traumatology and Orthopedics

Dr. Castañeda, Pablo G

- ◆ Head of the Division of Pediatric Orthopedic Surgery at New York University Hassenfeld Children's Hospital
- ◆ Professor of Orthopedic Surgery, New York University
- ◆ Medical Surgeon graduated from the Universidad Nacional Autonoma de Mexico through the Universidad Anahuac
- ◆ Specialized in Orthopedics and Traumatology from the National Autonomous University of Mexico
- ◆ Sub-specialty in Hip and Knee Reconstructive Surgery, Oxford University, Nuffield Orthopaedic Centre, Oxford, England
- ◆ Sub-speciality in Pediatric Orthopedics by the Baylor University, Houston, Texas, USA

Dr. Espinazo Arce, Olga

- ◆ Doctor in the Children's Orthopedics Section of the Orthopedic Surgery and Traumatology Service of the Basurto Hospital
- ◆ Doctor at the Orthopedic Surgery and Traumatology Service at Hospital Alto Deba
- ◆ Collaborator at Congresses organized by the Spanish Society of Pediatric Orthopedics
- ◆ Member of: Spanish Society Cardiology Orthopedics

Dr. Chorbadjian Alonso, Gonzalo Andrés

- ◆ Deputy Chief of the Orthopedics and Traumatology Service for Children at the Hospital Clínico San Borja Arriarán in Santiago de Chile
- ◆ Deputy Chief of the Orthopedics and Traumatology Service for Children at the Hospital Clínico San Borja Arriarán from Santiago de Chile
- ◆ Child Traumatologist at the German Clinic in Santiago de Chile
- ◆ Surgeon at Universidad de Santiago de Chile
- ◆ Specialist in Orthopedics and Traumatology at the Universidad de Chile
- ◆ Fellow of Subspecialty in Neuro-Orthopedics in Hospital Infantil Universitario Niño Jesús of Madrid
- ◆ Visiting-fellow at the Orthopedics and Traumatology Service of the hospital San Joan De Deu of Barcelona
- ◆ Visiting-fellow Ankle-Foot, Neuroorthopedics and Pediatric Orthopedics Team of the Orthopedic Institute of the Clinical Hospital University of Heidelberg in Germany
- ◆ Fellow Aotrauma with Doctor Theddy Slongo at the Inselspital de Berna, in Switzerland
- ◆ Member of: AO TRAUMA, SCHOT, SLAOTI

Dr. Clemente Garulo, Daniel

- ◆ Secretary of ERNA- s Endoscopy Working Group (EWG)
- ◆ Specialist Physician in Rheumatology in San Carlos Clinical Hospital
- ◆ PhD in Health Sciences from the Universidad Camilo José Cela
- ◆ Degree in Medicine and Surgery from the Faculty of Medicine of the Universidad de Alcalá
- ◆ Member of the Spanish Rheumatology Society

- ◆ Member of the Spanish Society of Pediatric Rheumatology

Dr. De Pablos Fernández, Julio

- ◆ Specialist in Orthopedic Surgery and Traumatology at Navarra Hospital
- ◆ Associate Professor of Orthopedic Surgery and Traumatology at the Universidad de Navarra
- ◆ Visiting Professor at different American universities
- ◆ Associate Professor of Orthopedic Surgery and Traumatology at the Universidad de Navarra
- ◆ Editor of Children's Orthopedics at EFORT Orthopedic Reviews
- ◆ Member of the Editorial Committee of the Journal of Pediatric Orthopedic (JPO)
- ◆ Organizer of the International Seminar on Orthopedics for Children (Annual) during 23 editions
- ◆ PhD in Medicine and Surgery from the Universidad de Navarra. Outstanding Award.
- ◆ Fellow in Pediatric Orthopedic Surgery at the Alfred I DuPont Institute, Wilmington, Delaware, USA
- ◆ Member of: SEOP, EPOS, POSNA

Dr. Del Cura Varas, Marisol

- ◆ Attending Physician of the Orthopedic Surgery and Traumatology Department of the Ramón y Cajal Hospital
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- ◆ Specialist Physician of the Orthopedic Surgery and Traumatology Department of the Niño Jesús Pediatric Hospital
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- ◆ Specialist Physician of the Orthopedic Surgery and Traumatology Department of the Niño Jesús Pediatric Hospital
- ◆ Degree in Medicine from the UAM
- ◆ Member of ICOMEM SECOT

Dr. Downey Carmona, Francisco Javier

- ◆ Child Traumatologist at Orthopedics
- ◆ Specialist. Traumatology Infant university from Virgen del Rocío Hospital Hospital, Seville
- ◆ Member of the Children's Orthopedics team at the Children's Hospital
- ◆ Virgen del Rocío for Mauritania
- ◆ President of the Asociación Ponseti España
- ◆ Graduate in Medicine and Surgery from the University of Seville
- ◆ Specialist in Orthopedic and Trauma Surgery
- ◆ Member of the Spanish Society of Pediatric Orthopedics
- ◆ Member of the Spanish Society of Orthopedic Surgery and Traumatology.
- ◆ Member of the team of the Andalusian Association for Health Cooperation of the Zambo Foot Project of the Clubfoot Project

Dr. Duart Clemente, Julio

- ◆ Specialist in Orthopedic Surgery and Traumatology at Navarra University Hospital
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- ◆ Secretary of Spanish Society of Pediatric Orthopedics
- ◆ Resident Intern at the University of Navarra Clinic
- ◆ Associate Professor of Orthopedic Surgery and Traumatology at the Universidad de Navarra
- ◆ PhD in Medicine and Surgery from the Universidad de Navarra
- ◆ Graduate in Medicine and Surgery from the Universidad de Navarra
- ◆ Estancias formativas en Ortopedia Pediátrica en Cleveland Clinic Foundation (Cleveland, Ohio), Hospital Sant Joan de Deu, University Children's Hospital Basel (Basilea, Suiza), Mayo Clinic (Rochester, Minnesota) y travelling Fellowship EPOS - POSNA
- ◆ Member of: SEOP, EPOS, POSNA

Dr. Farrington Rueda, David M

- ◆ Orthopedic Surgery Specialist
- ◆ Chief of Orthopedic Surgery and Traumatology Service, Hospital San Juan de Dios del Aljarafe
- ◆ Specialist Physician in Child Orthopedic Surgery and Traumatology, University Hospital of Valme

- ◆ Head of the Orthopedic Surgery and Pediatric Traumatology Sections, Virgen del University Hospital
- ◆ Graduate in Medicine and Surgery from the University of Seville
- ◆ Member of: SEOP, IPOTT, GSSG

Dr. Fernandes de Carvalho, Marcos António

- ◆ Degree in Medicine from the University of Coimbra
- ◆ Specific training in Orthopedics and Traumatology, Hospital University Center of Coimbra
- ◆ Specialized in Pediatric Orthopedics at the Pediatric Hospital CHUC, CHUC

Dr. Fernández Pineda, Israel

- ◆ Faculty member of the department of surgery at St. Jude Children's Research Hospital
- ◆ Fellowship in Pediatric Oncological Surgery at St. Jude Children's Research Hospital. Memphis, USA
- ◆ Faculty area specialist in Pediatric Surgery at the Department of Pediatric Surgery of the Virgen del Rocío Pediatric University Hospital
- ◆ Degree in Medicine from the Complutense University of Madrid

05

Structure and Content

The Advanced Master's Degree in Pediatric Surgery has a rigorous structure and complete content that covers a wide range of topics relevant to the practice of pediatric surgery. Participants will have access to high quality teaching materials, online conferences, clinical cases, discussions and evaluations, which will allow them to acquire a deep knowledge and mastery of key concepts in the specialty.





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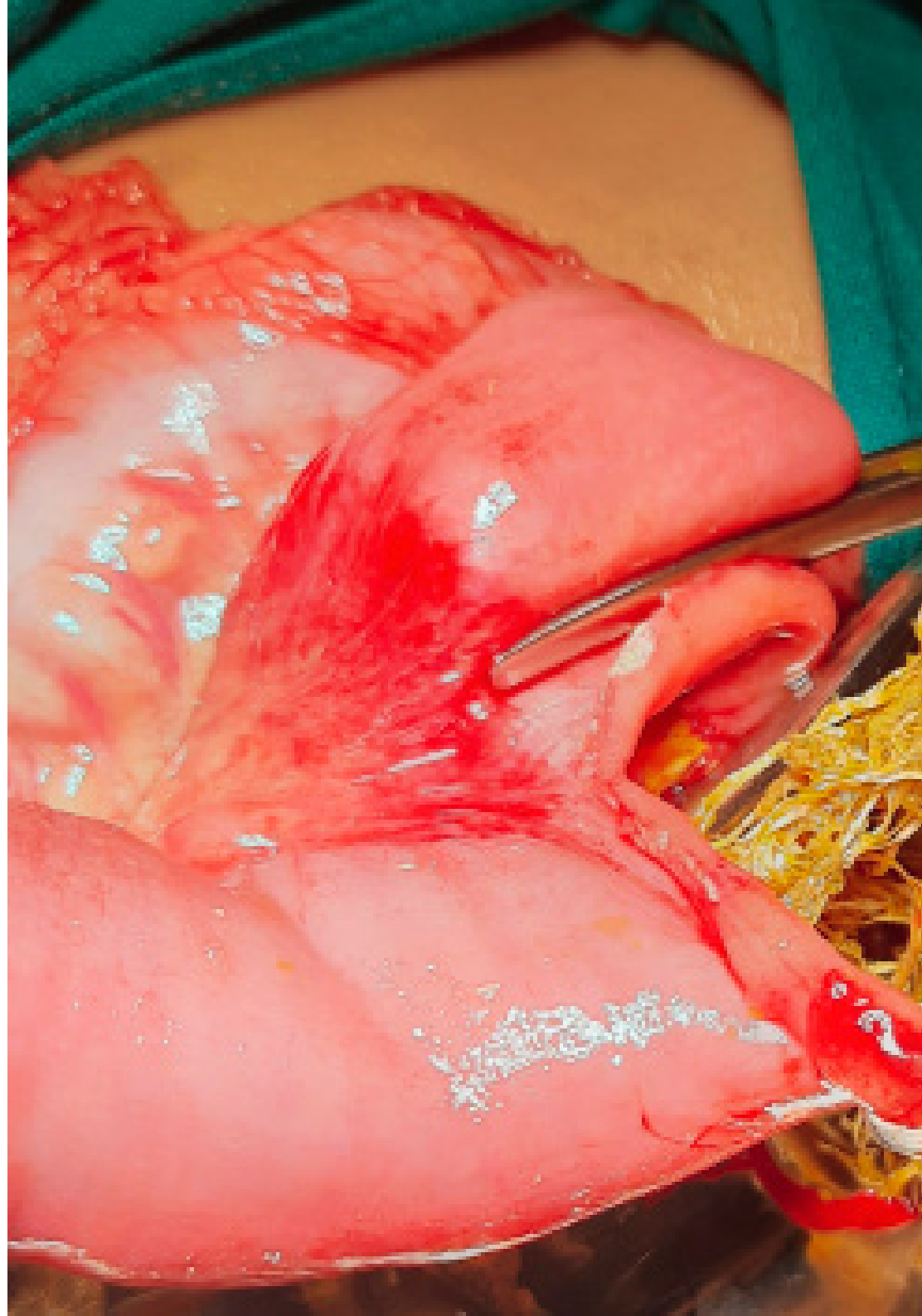
Key aspects of preoperative, intraoperative, and postoperative management of the pediatric patient will be addressed, including preoperative evaluation, perioperative care, pain control, complications and postoperative follow-up”

Module 1. Pediatric Surgery Surgical Patient Management. Trauma. Robotics in Pediatric Surgery

- 1.1. Nutrition in Dental Children. Assessment of Nutritional Status. Nutritional requirements. Specialist Enteral Nutrition at and Parenteral
 - 1.1.1 Calculating Herbivore Requirements
 - 1.1.2 Calculating Herbivore Requirements
 - 1.1.2.1. Assessment of Nutritional Status
 - 1.1.2.2. Nutritional Requirements
 - 1.1.3 Nutrition in Dental Children
 - 1.1.4 Enteral Nutrition
 - 1.1.4.1. Indications and Contraindications
 - 1.1.4.2. Access Routes
 - 1.1.4.3. Form of Administration
 - 1.1.4.4. Formulas
 - 1.1.4.5. Complications
 - 1.1.5 Parenteral Nutrition
 - 1.1.5.1. Indications and Contraindications
 - 1.1.5.2. Access Routes
 - 1.1.5.3. Composition
 - 1.1.5.4. Production
 - 1.1.5.5. Form of Administration
 - 1.1.5.6. Complications
- 1.2. Ethical considerations for the neonate and pediatric patient. Law of the minor
 - 1.2.1 Ethical considerations for neonates and pediatric patients
 - 1.2.1.1. Ethics in Pediatric Practice
 - 1.2.1.2. Ethical considerations in pediatric care for the newborn
 - 1.2.1.3. Ethics and clinical research in Pediatrics
- 1.3. Palliative Care in Surgery Pediatrics
 - 1.3.1 Palliative care in Pediatrics. BORRAR
 - 1.3.2 Bioethics at the end of life in Neonatology
 - 1.3.2.1. Decision making in Neonatal Intensive Care Units
 - 1.3.3 Complex Chronic Patient
 - 1.3.3.1. Therapeutic Effort Limitation
 - 1.3.3.2. The role of the surgeon
- 1.4. Trauma in Children Assessment and initial care for polytraumatized children
 - 1.4.1 Criteria for activating the initial care team for polytraumatized patients (PPT)
 - 1.4.2 Preparation of the patient care room PPT
 - 1.4.3 Clinical management in stages of the patient PPT
 - 1.4.4 Patient Transfer
 - 1.4.5 Primary recognition and initial resuscitation
 - 1.4.6 Secondary recognition
- 1.5. Management of hepatic, splenic and pancreatic trauma in pediatric patients
 - 1.5.1 Abdominal trauma in a pediatric patient
 - 1.5.2 Epidemiology
 - 1.5.3 The pediatric abdomen. Features
 - 1.5.4 Etiopathogenesis and Classification
 - 1.5.4.1. Blunt abdominal trauma
 - 1.5.4.1.1. Direct impact or abdominal compression
 - 1.5.4.1.2. Deceleration
 - 1.5.5 Open or penetrating abdominal trauma
 - 1.5.5.1. Firearm
 - 1.5.5.2. White weapon
 - 1.5.5.3. Penetrating herides by impalement
 - 1.5.6 Diagnosis
 - 1.5.6.1. Clinical Examination
 - 1.5.6.2. Laboratory Tests
 - 1.5.6.2.1. Blood Count:
 - 1.5.6.2.2. Urinalysis
 - 1.5.6.2.3. Biochemistry
 - 1.5.6.2.4. Cross testing
 - 1.5.6.3. Imaging Tests
 - 1.5.6.3.1. Plain abdominal x-ray
 - 1.5.6.3.2. Abdominal ultrasound and FAST ultrasound
 - 1.5.6.3.3. Computed Tomography Ultrasound
 - 1.5.6.4. Peritoneal puncture-wash

- 1.5.7 Treatment
 - 1.5.7.1. Treatment of closed abdominal trauma
 - 1.5.7.1.1. Hemodynamically stable patients
 - 1.5.7.1.2. Hemodynamically Unstable patients
 - 1.5.7.1.3. Conservative action in solid viscus injuries
 - 1.5.7.2. Treatment of Open abdominal trauma
 - 1.5.7.3. Embolization
- 1.5.8 Organ-specific lesions
 - 1.5.8.1. Bladder
 - 1.5.8.2. Liver
 - 1.5.8.3. Pancreas.
 - 1.5.8.4. Hollow Viscera Lesions
 - 1.5.8.4.1. Stomach.
 - 1.5.8.4.2. Duodenum
 - 1.5.8.4.3. Yeyuno-ileon
 - 1.5.8.4.4. Large intestine: colon, rectum and sigma
 - 1.5.8.5. Diaphragmatic injuries
- 1.6. Renal Trauma in Children
 - 1.6.1 Renal Trauma in Children
 - 1.6.2 Imaging Tests
 - 1.6.3 Indications for retrograde paleography, percutaneous nephrostomy and perinephric drainage
 - 1.6.4 Renal Trauma Management
 - 1.6.5 Renal Vascular Lesions
 - 1.6.6 Renal vascular hypertension induced by trauma
 - 1.6.7 Chronic post traumatic lumbar pain
 - 1.6.8 Recommendations for activities in monorrhea patients
 - 1.6.9 Disruption of the pyeloureteral union in patiets with previous hydronephrosis
 - 1.6.10. Urethral Trauma
- 1.7. Management of Vesicourethral Trauma and Genital Trauma
 - 1.7.1 Bladder Trauma
 - 1.7.1.1. General Aspects
 - 1.7.1.2. Diagnosis
 - 1.7.1.3. Classification and Treatment
 - 1.7.2 Urethral Trauma
 - 1.7.2.1. General Aspects
 - 1.7.2.2. Diagnosis
 - 1.7.2.3. Treatment
 - 1.7.2.4. Complications
 - 1.7.3 Genital Trauma
 - 1.7.3.1. Penile Trauma
 - 1.7.3.2. Scrotal and testicular trauma
 - 1.7.3.3. Vulvar Trauma
- 1.8. Major Outpatient Surgery Pediatric
 - 1.8.1 Abdominal Wall Hernias
 - 1.8.1.1. Umbilical Hernia
 - 1.8.1.2. Epigastric hernia
 - 1.8.1.3. Spiegel
 - 1.8.1.4. Lumbar
 - 1.8.2 Inguinal and scrotal region hernia
 - 1.8.2.1. Direct and indirect inguinal hernia
 - 1.8.2.2. Femoral hernia
 - 1.8.2.3. Hydrocele
 - 1.8.2.4. Surgical Techniques.
 - 1.8.2.5. Complications
 - 1.8.3 Cryptorchidism
 - 1.8.4 Testicular anorchia

- 1.9. Hypospadias Phimosis
 - 1.9.1 Hypospadias
 - 1.9.1.1. Embryology and penis development
 - 1.9.1.2. Epidemiology and Etiology. Risk Factors
 - 1.9.1.3. Anatomy of hypospadias
 - 1.9.1.4. Classification and clinical assessment of hypospadias. Associated anomalies
 - 1.9.1.5. Treatment
 - 1.9.1.5.1. Indications for reconstruction and therapeutic objective
 - 1.9.1.5.2. Hormone Pre Surgery Therapy
 - 1.9.1.5.3. Surgical Defects. Repair in a short time. Reconstruction in stages
 - 1.9.1.6. Other technical aspects. Bandages. Urinary Diversion
 - 1.9.1.7. Immediate Postoperative Complications.
 - 1.9.1.8. Evolution and follow-up
 - 1.9.2 Phimosis
 - 1.9.2.1. Incidence and Epidemiology
 - 1.9.2.2. Definition. Differential Diagnosis. Other changes to the foreskin
 - 1.9.2.3. Treatment
 - 1.9.2.3.1. Medical Treatment
 - 1.9.2.3.2. Surgical Treatment. Preputial plasty and circumcision
 - 1.9.2.4. Postoperative complications and sequelae
- 1.10. Robotic Surgery in Pediatrics
 - 1.10.1 Robotic systems
 - 1.10.2 Pediatric procedures
 - 1.10.3 General robotic surgery technique in pediatric urology
 - 1.10.4 Surgical procedures in pediatric urology classified according to location
 - 1.10.4.1. Upper Urinary Tract
 - 1.10.4.2. Pediatric pelvic Surgery
 - 1.10.5 Surgical procedures in General Pediatric Surgery
 - 1.10.5.1. Fundoplication
 - 1.10.5.2. Splenectomy
 - 1.10.5.3. Cholecystectomy.



Module 2. Pediatric Surgery General and Digestive I

- 2.1. Functional alterations of the esophagus: evaluation methods. Functional Tests
 - 2.1.1. esophageal pHmetry
 - 2.1.2. pH / Esophageal Impedance
 - 2.1.3. Conventional esophageal manometry
 - 2.1.4. B. High Esophageal-resolution manometry
- 2.2. Gastroesophageal Reflux
 - 2.2.1. Gastroesophageal Reflux
 - 2.2.2. Epidemiology and Pathophysiology
 - 2.2.3. Clinical Presentation
 - 2.2.4. Diagnosis
 - 2.2.5. Treatment
 - 2.2.5.1. Medical Treatment
 - 2.2.5.2. Treatment of extraesophageal manifestations of ERGE
 - 2.2.5.3. Surgical Management
 - 2.2.5.3.1. Fundoplication Types
 - 2.2.5.3.2. Other surgical procedures
 - 2.2.5.4. Endoscopic treatment
 - 2.2.6. Evolution, Complications and Prognosis
- 2.3. Esophageal Acquired Diseases. Esophageal rupture and perforation, Caustic stenosis. Endoscopy
 - 2.3.1. Acquired esophageal pathology prevalent in childhood
 - 2.3.2. Advances in the Management of oesophageal perforation
 - 2.3.3. Esophageal causticization
 - 2.3.3.1. Diagnostic methods and management of esophageal causticization
 - 2.3.3.2. Caustic esophageal stricture
 - 2.3.4. Peculiarities in upper digestive endoscopy in children
- 2.4. Achalasia and esophageal motility disorders
 - 2.4.1. Epidemiology
 - 2.4.2. Etiology
 - 2.4.3. Pathophysiology
 - 2.4.4. Clinical Characteristics

- 2.4.5 Diagnosis
 - 2.4.5.1. Diagnostic Approach.
 - 2.4.5.2. Diagnostic Tests
- 2.4.6 Differential Diagnosis
 - 2.4.6.1. Gastroesophageal Reflux Disease (GORD)
 - 2.4.6.2. Pseudoachalasia
 - 2.4.6.3. Others esophageal motility disorders
- 2.4.7 Types of achalasia
 - 2.4.7.1. Type I (classic achalasia)
 - 2.4.7.2. Type I
 - 2.4.7.3. Type III (spastic achalasia)
- 2.4.8 Natural History and Prognosis
- 2.4.9 Treatment
 - 2.4.9.1. Medical Treatment
 - 2.4.9.2. Esophageal dilations
 - 2.4.9.3. Endoscopic treatment
 - 2.4.9.4. Surgical Management
- 2.4.10. Evolution, Complications and Prognosis
- 2.5. Techniques and indications for esophageal replacement
 - 2.5.1 Indications
 - 2.5.1.1. Esophageal Atresia
 - 2.5.1.2. Peptic stricture
 - 2.5.1.3. Caustic stenosis
 - 2.5.1.4. Others
 - 2.5.2 Characteristics of an ideal esophageal replacement
 - 2.5.3 Types of esophageal replacement
 - 2.5.4 Pathways of ascent of the esophageal substitute
 - 2.5.5 Ideal time for intervention
 - 2.5.6 Surgical Techniques.
 - 2.5.6.1. Colonic interposition
 - 2.5.6.2. Esophagoplasty with gastric tubes
 - 2.5.6.3. Yeyunal interposition
 - 2.5.6.4. gastric interposition
 - 2.5.7 Post-Operative Care
 - 2.5.8 Evolution and results
- 2.6. Acquired Gastric Pathologies
 - 2.6.1 Hypertrophic pyloric stenosis
 - 2.6.1.1. Etiology
 - 2.6.1.2. Clinical Manifestations
 - 2.6.1.3. Diagnosis
 - 2.6.1.4. Treatment
 - 2.6.2 Pyloric atresia
 - 2.6.3 Peptic Ulcer Disease
 - 2.6.3.1. Clinical Manifestations
 - 2.6.3.2. Diagnosis
 - 2.6.4 Gastric duplications
 - 2.6.5 Gastrointestinal bleeding.
 - 2.6.5.1. Introduction
 - 2.6.5.2. Assessment and Diagnosis
 - 2.6.5.3. Treatment Management
 - 2.6.6 Gastric volvulus
 - 2.6.7 Extraneous bodies and bezoar
- 2.7. Intestinal Duplications Meckel's Diverticulum. Persistence of omphalomesenteric conduct
 - 2.7.1 Objectives
 - 2.7.2 Intestinal Duplications
 - 2.7.2.1. Epidemiology
 - 2.7.2.2. Embryology, anatomical characteristics, classification and location
 - 2.7.2.3. Clinical Presentation
 - 2.7.2.4. Diagnosis
 - 2.7.2.5. Treatment
 - 2.7.2.6. Post-operative Considerations
 - 2.7.2.7. News and current interests

- 2.7.3 Meckel's Diverticulum
 - 2.7.3.1. Epidemiology
 - 2.7.3.2. Embryology, anatomical characteristics, other abnormalities of the persistence of the omphalomesenteric conduct
 - 2.7.3.3. Clinical Presentation
 - 2.7.3.4. Diagnosis
 - 2.7.3.5. Treatment
 - 2.7.3.6. Post-operative Considerations
- 2.8. Intestinal volvulus. intestinal invagination. Intestinal Malrotation Epiplón Torsion
 - 2.8.1 Intestinal Volvulus
 - 2.8.1.1. Epidemiology
 - 2.8.1.2. Clinical Presentation
 - 2.8.1.3. Diagnosis
 - 2.8.1.4. Treatment
 - 2.8.2 Bowel Intussusception
 - 2.8.2.1. Epidemiology
 - 2.8.2.2. Clinical Presentation
 - 2.8.2.3. Diagnosis
 - 2.8.2.4. Treatment
 - 2.8.3 Intestinal Malrotation
 - 2.8.3.1. Epidemiology
 - 2.8.3.2. Clinical Presentation
 - 2.8.3.3. Diagnosis
 - 2.8.3.4. Treatment
 - 2.8.4 Epiplón Torsion
 - 2.8.4.1. Epidemiology
 - 2.8.4.2. Clinical Presentation
 - 2.8.4.3. Diagnosis
 - 2.8.4.4. Treatment
- 2.9. Cecal appendix pathology. Acute appendicitis, appendicular plastron, Carcinoid tumor. Mucocele
 - 2.9.1 Anatomy of the appendix
 - 2.9.2 Acute Appendicitis
 - 2.9.2.1. Pathophysiology and Epidemiology
 - 2.9.2.2. Clinical Characteristics
 - 2.9.2.3. Diagnosis
 - 2.9.2.4. Differential Diagnosis
 - 2.9.2.5. Treatment
 - 2.9.2.6. Complications
 - 2.9.3 Gastric Carcinoid Tumour
 - 2.9.3.1. Epidemiology
 - 2.9.3.2. Clinical Presentation
 - 2.9.3.3. Diagnosis
 - 2.9.3.4. Treatment
 - 2.9.3.5. Post-operative Considerations
 - 2.9.4 Appendicular mucocele
 - 2.9.4.1. Epidemiology
 - 2.9.4.2. Clinical Presentation
 - 2.9.4.3. Diagnosis
 - 2.9.4.4. Treatment
 - 2.9.4.5. Post-operative Considerations

Module 3. Pediatric Surgery General and Digestive II

- 3.1. Chronic inflammatory bowel disease in pediatrics
 - 3.1.1. Ulcerative Colitis
 - 3.1.1.1. Epidemiology
 - 3.1.1.2. Etiology
 - 3.1.1.3. Pathological Anatomy
 - 3.1.1.4. Clinical Presentation
 - 3.1.1.5. Diagnosis
 - 3.1.1.6. Medical Treatment
 - 3.1.1.7. Surgical Management
 - 3.1.2. Crohn's Disease
 - 3.2.1. Etiology
 - 3.2.2. Pathologic Anatomy
 - 3.2.3. Clinical Presentation
 - 3.2.4. Diagnosis
 - 3.2.5. Medical Treatment
 - 3.2.6. Surgical Management
 - 3.1.3. Indeterminate colitis
- 3.2. Short Bowel Syndrome
 - 3.2.1. Causes of Short Bowel Syndrome
 - 3.2.2. Initial determinants of intestinal function
 - 3.2.3. Intestinal adaptation process
 - 3.2.4. Clinical Manifestations
 - 3.2.5. Initial management of the patient with small bowel syndrome
 - 3.2.6. Autologous surgical reconstruction techniques
- 3.3. Intestinal and multiorgan transplant
 - 3.3.1. Intestinal rehabilitation
 - 3.3.2. Transplant indications
 - 3.3.3. Surgical considerations and transplant intervention
 - 3.3.4. Immediate Postoperative Complications.
- 3.4. Anorectal Atresia and Cloacal Malformations
 - 3.4.1. Anorectal atresia
 - 3.4.1.1. Embryological Recall
 - 3.4.1.2. Classification
 - 3.4.1.3. Diagnostic Tests
 - 3.4.1.4. Treatment
 - 3.4.1.5. Post-Operative Care
 - 3.4.2. Sewer
 - 3.4.2.1. Embryological Recall
 - 3.4.2.2. Classification
 - 3.4.2.3. Diagnostic Tests
 - 3.4.2.4. Treatment
- 3.5. Hirschsprung's Disease. Intestinal neuronal dysplasias and other causes of megacolon. Acquired anorectal pathology
 - 3.5.1. Hirschsprung's Disease
 - 3.5.1.1. Etiology
 - 3.5.1.2. Clinical Symptoms
 - 3.5.1.3. Diagnosis. Differential Diagnosis
 - 3.5.1.3.1. Abdominal x-ray
 - 3.5.1.3.2. Bare enema
 - 3.5.1.3.3. Anorectal manometry
 - 3.5.1.3.4. Suction rectal biopsy
 - 3.5.1.4. Physical Examination
 - 3.5.1.5. Treatment
 - 3.5.1.6. Postsurgical evolution
 - 3.5.2. Intestinal neuronal dysplasias and other causes of megacolon
 - 3.5.3. Acquired anorectal pathology
 - 3.5.3.1. Anal Fissure
 - 3.5.3.2. Clinical Symptoms
 - 3.5.3.3. Diagnosis
 - 3.5.3.4. Treatment
 - 3.5.4. Perianal abscesses and fistulas
 - 3.5.4.1. Clinical Symptoms
 - 3.5.4.2. Treatment

- 3.6. Digestive Functional Tests. Anorectal manometry New therapies for the study and treatment of incontinence and stress
 - 3.6.1 Anorectal manometry
 - 3.6.1.1. Normal Values
 - 3.6.1.2. Anal inhibitory reflex
 - 3.6.1.3. Anal canal pressure gradient
 - 3.6.1.4. Rectal sensitivity
 - 3.6.1.5. Voluntary Contraction
 - 3.6.1.6. Defecatory maneuver
 - 3.6.2 Biofeedback
 - 3.6.2.1. Indications
 - 3.6.2.2. Techniques
 - 3.6.2.3. Preliminary results
 - 3.6.3 Posterior Tibial Nerve Stimulation
 - 3.6.3.1. Indications
 - 3.6.3.2. Technique
 - 3.6.3.3. Preliminary results
- 3.7. Splenic and pancreatic pathology. Portal Hypertension
 - 3.7.1 Objectives
 - 3.7.2 Splenic Pathology
 - 3.7.2.1. Anatomy
 - 3.7.2.2. Surgical Indication
 - 3.7.2.2.1. Hematologic Pathology
 - 3.7.2.2.2. Splenic Lesions
 - 3.7.2.3. Pre-operative Considerations
 - 3.7.2.4. Surgical Techniques.
 - 3.7.2.5. Post-operative Considerations
 - 3.7.2.6. Complications
 - 3.7.3 Pancreatic Pathology
 - 3.7.3.1. Anatomy
 - 3.7.3.2. Surgical Indication
 - 3.7.3.2.1. Congenital hyperinsulinism
 - 3.7.3.2.2. Pancreatic pseudocyst
 - 3.7.3.3. Pancreatic Tumors
 - 3.7.3.3. Surgical Techniques.
 - 3.7.3.4. Complications
- 3.7.4 Portal Hypertension
 - 3.7.4.1. Types of portal hypertension
 - 3.7.4.2. Diagnosis
 - 3.7.4.3. Clinical Symptoms
 - 3.7.4.4. Therapy Options
 - 3.7.4.5. Surgical Techniques.
 - 3.7.4.6. Prognosis
- 3.8. Hepatobiliary Pathology I. Biliary Tract Atresia. Cholestatic illnesses
 - 3.8.1 Objectives
 - 3.8.2 Causes of jaundice and cholestasis in breastfeeding
 - 3.8.2.1. Thick bile syndrome
 - 3.8.2.2. Alagille's Disease
 - 3.8.3 Biliary Tract Atresia
 - 3.8.3.1. Epidemiology
 - 3.8.3.2. Etiopathogenesis.
 - 3.8.3.3. Classification
 - 3.8.3.4. Clinical Presentation
 - 3.8.3.5. Diagnosis. Histopathology
 - 3.8.3.6. Portoenterostomy of Kasai
 - 3.8.3.7. Post-operative Considerations
 - 3.8.3.8. Medical Treatment. Adjuvant Therapy
 - 3.8.3.9. Complications
 - 3.8.3.10. Prognosis and results
 - 3.8.3.11. News and current interests
- 3.9. Hepatobiliary Pathology II. Choledochal Cyst Pancreatobiliary malunion. Biliary Lithiasis
 - 3.9.1 Objectives
 - 3.9.2 Choledochal Cyst
 - 3.9.2.2. Classification
 - 3.9.2.3. Clinical Presentation
 - 3.9.2.4. Diagnosis
 - 3.9.2.5. Management and Surgical Techniques
 - 3.9.2.6. Complications
 - 3.9.2.7. Special considerations
 - 3.9.2.8. Caroli's Disease and Choledochocele
 - 3.9.2.9. Prognosis and Long-Term Results

- 3.9.3 Pancreatobiliary malunion.
- 3.9.4 Biliary Lithiasis
 - 3.9.4.1. Types of calculations
 - 3.9.4.2. Diagnostic Tests
 - 3.9.4.3. Colelitis asintomática
 - 3.9.4.4. Colelitis asintomática
 - 3.9.4.5. Surgical Anatomy
 - 3.9.4.6. Surgical Techniques.
- 3.10. Pediatric Hepatic Transplantation. Current Status
 - 3.10.1 Transplant indications
 - 3.10.2 Contraindications
 - 3.10.3 Donor considerations
 - 3.10.4 Preoperative preparation
 - 3.10.5 Transplant intervention
 - 3.10.6 Immunodepressant treatment
 - 3.10.7 Immediate Postoperative Complications.
 - 3.10.8 The Evolution of Transplantation

Module 4. Pediatric Fetal and Neonatal Surgery

- 4.1. The Fetus as a Patient
 - 4.1.1 Prenatal Diagnosis. Management of mother and fetus
 - 4.1.2 Videoendoscopic fetal surgery
 - 4.1.3 Fetal problems susceptible to prenatal treatment
 - 4.1.4 Ethics-legal Considerations
 - 4.1.5 Fetal surgery and exit surgery
- 4.2. Neonatal Pediatric Surgery
 - 4.2.1 Functional and structural organization of the Pediatric Surgery Unit
 - 4.2.2 Skills in the neonatal surgical area
 - 4.2.3 Neonatal Intensive Care Units
 - 4.2.4 Surgery in neonatal units
- 4.3. Congenital Diaphragmatic Hernia (CDH)
 - 4.3.1 Embryology and epidemiology
 - 4.3.2 Associated anomalies Genetic associations
 - 4.3.3 Pathophysiology. Pulmonary Hypoplasia and Pulmonary Hypertension

- 4.3.4 Prenatal Diagnosis.
 - 4.3.4.1. Prognostic Factors
 - 4.3.4.2. Prenatal treatment
- 4.3.5 Postnatal resuscitation
 - 4.3.5.1. Medical treatment and ventilatory. ECMO
- 4.3.6 Surgical Management
 - 4.3.6.1. Abdominal and thoracic approaches
 - 4.3.6.2. Open and minimally invasive
 - 4.3.6.3. Diaphragmatic substitutes
- 4.3.7 Evolution. Mortality
 - 4.3.7.1. Pulmonary morbidity
 - 4.3.7.2. Neurologic
 - 4.3.7.3. Digest
 - 4.3.7.4. Osteomuscular
- 4.3.8 Morgani hernia or anterior diaphragmatic hernia
 - 4.3.8.1. Congenital Diaphragmatic Eventration (CDH)
- 4.4. Esophageal atresia. Tracheoesophageal fistula
 - 4.4.1 Embriology. Epidemiology
 - 4.4.2 Associated anomalies Classification
 - 4.4.3 Prenatal and Postnatal Diagnosis
 - 4.4.4 Surgical Management
 - 4.4.4.1. Preoperative bronchoscopy
 - 4.4.5 Surgical approaches
 - 4.4.5.1. Thoracotomy
 - 4.4.5.2. Thoracoscopy
 - 4.4.6 Long gap esophageal atresia
 - 4.4.6.1. Treatment Options
 - 4.4.6.2. Elongation
 - 4.4.7 Complications
 - 4.4.7.1. Recurrence of tracheoesophageal fistula
 - 4.4.7.2. Stenosis
 - 4.4.8 Secuelas

- 4.5. Abdominal Wall Defects
 - 4.5.1 Gastroschisis. Incidence
 - 4.5.1.1. Embryology
 - 4.5.1.2. Etiology
 - 4.5.1.3. Prenatal management
 - 4.5.2 Neonatal Resuscitation.
 - 4.5.2.1. Surgical Management
 - 4.5.2.2. Primary cierre
 - 4.5.2.3. Closing in stages
 - 4.5.3 Treatment of associated intestinal atresia
 - 4.5.3.1. Evolution
 - 4.5.3.2. Intestinal morbidity
 - 4.5.4 Omphalocele
 - 4.5.4.1. Incidence
 - 4.5.4.2. Embryology
 - 4.5.4.3. Etiology
 - 4.5.5 Prenatal management
 - 4.5.5.1. Associated anomalies
 - 4.5.5.2. Genetic Counseling
 - 4.5.6 Neonatal Resuscitation.
 - 4.5.6.1. Surgical Management
 - 4.5.6.2. Primary cierre
 - 4.5.6.3. Closing in stages
 - 4.5.6.4. Deferred closing in stages
 - 4.5.7 Short and Long-Term Aims. Survival
- 4.6. Pyloric and gastric pathology in the newborn
 - 4.6.1 Hypertrophic pyloric stenosis
 - 4.6.1.1. Etiology
 - 4.6.1.2. Diagnosis
 - 4.6.2 Surgical Approach.
 - 4.6.2.1. Open vs. Laparoscopy
 - 4.6.3 Pyloric atresia
 - 4.6.4 Perforación gástrica espontanea
 - 4.6.5 Gastric volvulus
 - 4.6.6 Gastric duplications
- 4.7. Duodenal Obstruction
 - 4.7.1 Embryology
 - 4.7.1.1. Etiology
 - 4.7.2 Epidemiology
 - 4.7.2.1. Associated anomalies
 - 4.7.3 Duodenal atresia and stenosis
 - 4.7.3.1. Annular pancreas
 - 4.7.4 Clinical Presentation
 - 4.7.4.1. Diagnosis
 - 4.7.5 Surgical Management
- 4.8. Congenital Intestinal Obstruction
 - 4.8.1 Duodenal atresia and stenosis
 - 4.8.1.1. Embryology
 - 4.8.1.2. Incidence
 - 4.8.1.3. Types
 - 4.8.2 Clinical and Radiological Diagnosis
 - 4.8.2.1. Surgical Management
 - 4.8.2.2. Prognosis
 - 4.8.3 Colic atresia and stenosis
 - 4.8.4 Meconium plug syndrome
 - 4.8.4.1. Left Colon Syndromes
 - 4.8.5 Meconium Ileus
 - 4.8.5.1. Etiopathogenesis.
 - 4.8.5.2. Genetics
 - 4.8.5.3. Cystic fibrosis
 - 4.8.6 Simple and complicated meconium ileus
 - 4.8.7 Medical and Surgical Treatment
 - 4.8.8 Complications

- 4.9. Minimally Invasive Surgery Neonatal
 - 4.9.1 General Materials
 - 4.9.2 Esophageal Atresia/Long-Gap Esophageal Atresia
 - 4.9.3 Neonatal diaphragmatic Pathologies
 - 4.9.4 Duodenal Atresia
 - 4.9.5 Intestinal Atresia
 - 4.9.6 Intestinal Malrotation
 - 4.9.7 Neonatal Ovarian Cysts
 - 4.9.8 Other indications
- 4.10. Necrotizing Enterocolitis
 - 4.10.1 Epidemiology
 - 4.10.1.1. Pathophysiology
 - 4.10.2 Classification
 - 4.10.2.1. Prognostic Factors
 - 4.10.3 Clinical diagnosis
 - 4.10.3.1. Differential Diagnosis
 - 4.10.4 Intestinal Perforation
 - 4.10.5 Medical Treatment
 - 4.10.5.1. Surgical Management
 - 4.10.6 Evolution. Prevention

Module 5. Pediatric Surgery Head and Neck

- 5.1. Craniofacial malformations I. Unilateral and Bilateral Cleft Lip
 - 5.1.1 Facial development
 - 5.1.2 Unilateral and bilateral cleft lip
 - 5.1.3 Embryology and anatomy of the malformation
 - 5.1.4 Classification
 - 5.1.5 Pre-surgical treatment
 - 5.1.6 Primary surgical techniques, times
 - 5.1.7 Complications and treatment. follow-up

- 5.2. Craniofacial malformations II. Fissure of Palate
 - 5.2.1 Fissure of taste
 - 5.2.2 Embryology and anatomy of the malformation
 - 5.2.3 Classification
 - 5.2.4 Treatment, techniques and times
 - 5.2.5 Complications and treatment
 - 5.2.6 Monitoring
- 5.3. Craniofacial malformations III. Velopharyngeal insufficiency
 - 5.3.1 Velopharyngeal insufficiency
 - 5.3.2 Studio and treatment
 - 5.3.3 Syndromes (Cruzón, Tracher-Collins, Pierre Robin Sequence, etc.)
 - 5.3.4 Sequelae Surgery
 - 5.3.5 Multidisciplinary teams and continued treatment
 - 5.3.6 Rehabilitation, orthodontics and orthopedics
 - 5.3.7 Monitoring
- 5.4. Surgical pathology of the oronasopharyngeal cavity
 - 5.4.1 Dermoid cyst; glioma and encephalocele; choanal atresia
 - 5.4.2 Juvenile angiofibroma
 - 5.4.3 Retropharyngeal and peripharyngeal abscess; Ludwig's angina
 - 5.4.4 Ankyloglossia, macroglossia
 - 5.4.5 Epulis, mucocele
 - 5.4.6 Vascular malformations (hemangioma, lymphangioma)
- 5.5. Salivary Gland Pathologies
 - 5.5.1 Inflammatory Diseases
 - 5.5.2 Sialoadenitis
 - 5.5.3 Cystic disease: ranula
 - 5.5.4 Malignant and non-malignant neoplasms
 - 5.5.5 Vascular malformations (hemangioma, lymphangioma)
- 5.6. Malignant and non-malignant neoplasms
 - 5.6.1 General approach to cervical adenopathy
 - 5.6.2 Acute lymphadenitis. Adenitis due to atypical mycobacteria. cat spider disease
 - 5.6.3 Lymphomas

- 5.7. Thyroid Disease
 - 5.7.1 Embryology and Anatomy
 - 5.7.2 Surgical Considerations
 - 5.7.3 Juvenile thyroglossal cyst and ectopic thyroids
 - 5.7.4 Hypo and hyperthyroidism
 - 5.7.5 Thyroid neoplasms
- 5.8. Parathyroid pathology
 - 5.8.1 Embryology and Anatomy
 - 5.8.2 Surgical Considerations
 - 5.8.3 Functional Tests
 - 5.8.4 Neonatal and familial hyperparathyroidism
 - 5.8.5 Secondary hyperparathyroidism
 - 5.8.6 Parathyroid adenomas
- 5.9. Cervical cysts and sinuses
 - 5.9.1 Embryology
 - 5.9.2 Anomalies of the 1st branchial arch and cleft
 - 5.9.3 Anomalies of the 2nd arch and branchial cleft
 - 5.9.4 Anomalies of the 3rd arch and branchial cleft
 - 5.9.5 Anomalies of the 4th arch and branchial cleft
 - 5.9.6 Dermoid cysts Preauricular Cysts and Fistulas
 - 5.9.7 Thymic cysts
 - 5.9.8 Jugular venous aneurysms
- 5.10. Auricular malformations
 - 5.10.1 Aetiopathogenesis and Pathophysiology
 - 5.10.2 Types of malformations
 - 5.10.3 Preoperative Evaluation
 - 5.10.4 Surgical Management
 - 5.10.5 Non-Surgical Treatment

Module 6. Pediatric Surgery Airway and Chest

- 6.1. Malformations and deformities of the thoracic wall I. Pectus carinatum. Poland Syndrome and others
 - 6.1.1 Embryology and anatomy of the Thoracic Wall
 - 6.1.2 Classification
 - 6.1.3 Additional exams
 - 6.1.4 Pectus Carinatum Orthopedic treatment
 - 6.1.5 Poland Syndrome
- 6.2. Thoracic wall malformations and deformities II. Pectus Excavatum
 - 6.2.1 Pectus Excavatum
 - 6.2.2 Surgical Management
 - 6.2.2.1. Open Surgery Techniques
 - 6.2.2.2. Techniques from Minimally Invasive Surgery
 - 6.2.2.3. Other surgical alternatives
 - 6.2.3 Non-surgical alternatives Complications and follow-up
- 6.3. Mediastinal tumors and cysts
 - 6.3.1 Embryology
 - 6.3.2 Diagnosis
 - 6.3.3 Classification
 - 6.3.4 General Management
 - 6.3.5 Characteristics and specific management
- 6.4. Bronchopulmonary malformations. Congenital Lobar Hyperinsufflation. Bronchogenic Cysts Pulmonary Sequestration Cystic Adenomatoid Malformation
 - 6.4.1 Embryology
 - 6.4.2 Prenatal diagnosis and classification of congenital bronchopulmonary malformations
 - 6.4.3 Postnatal management of congenital bronchopulmonary malformations
 - 6.4.4 Surgical Management of congenital bronchopulmonary malformations
 - 6.4.5 Conservative Treatment of congenital bronchopulmonary malformations

- 6.5. Pleuropulmonary Pathology. Surgical treatment of complicated pneumonia. Metastatic Cancer
 - 6.5.1 Objectives
 - 6.5.2 Pleuropulmonary Pathology. Pneumothorax
 - 6.5.2.1. Introduction
 - 6.5.2.2. Classification
 - 6.5.2.3. Diagnosis
 - 6.5.2.4. Treatment
 - 6.5.2.5. Techniques for recurrent Neumothorax or the presence of bullas
 - 6.5.2.6. News and current interests
 - 6.5.3 Complicated Pneumonia
 - 6.5.3.1. Introduction
 - 6.5.3.2. Diagnosis
 - 6.5.3.3. Surgical Indications
 - 6.5.3.4. Endothoracic drainage placement +/- Fibrinolysis
 - 6.5.3.5. Thoracoscopy
 - 6.5.4 Chylothorax.
 - 6.5.4.1. Introduction
 - 6.5.4.2. Medical Treatment
 - 6.5.4.3. Drainage instructions
 - 6.5.4.4. Pleurodesis. Types
 - 6.5.4.5. News and current interests
 - 6.5.5 Metastatic Cancer
 - 6.5.5.1. Introduction
 - 6.5.5.2. Indications
 - 6.5.5.3. Thoracotomy
 - 6.5.5.4. Thoracoscopy
 - 6.5.5.5. Mapping methods. Nuclear Medicine. Indocyanine green
 - 6.5.5.6. News and current interests
- 6.6. Bronchoscopy. in Pediatric Surgery
 - 6.6.1 Fibrobronchoscopy:
 - 6.6.1.1. Technique
 - 6.6.1.2. Indications
 - 6.6.1.3. Diagnostic and Follow-Up Procedures in Pediatric
 - 6.6.2 Rigid bronchoscopy
 - 6.6.2.1. Technique
 - 6.6.2.2. Indications
 - 6.6.2.3. Diagnostic and Follow-Up Procedures in Pediatric
- 6.7. Indications and techniques to perform: open and closed surgical approaches to the chest. Pediatric Thoracoscopy
 - 6.7.1 Surgical approaches
 - 6.7.1.1. Types
 - 6.7.1.2. Techniques
 - 6.7.1.3. Indications
 - 6.7.2 Pleural Drain
 - 6.7.2.1. Indications
 - 6.7.2.2. Techniques
 - 6.7.2.3. Chest tube management
 - 6.7.3 Pediatric Thoracoscopy
 - 6.7.3.1. History
 - 6.7.3.2. Instruments
 - 6.7.3.3. Techniques and patient placement
 - 6.7.3.4. Advances
- 6.8. Upper Airway Assessment
 - 6.8.1 Anatomy and Physiology
 - 6.8.2 Semiology
 - 6.8.3 Diagnostic Techniques. Endoscopy CT: 3D Reconstruction
 - 6.8.4 Endoscopic Treatments. Laser
- 6.9. Pediatric laryngeal Pathology
 - 6.9.1 Laryngomalacia
 - 6.9.2 Subglottic stenosis
 - 6.9.3 laryngeal web
 - 6.9.4 Vocal Cord Paralysis
 - 6.9.5 Subglottic hemangioma
 - 6.9.6 LTE slit

- 6.10. Pediatric Tracheal Pathology
 - 6.10.1 Tracheomalacia
 - 6.10.2 Tracheal Stenosis.
 - 6.10.3 Vascular Rings.
 - 6.10.4 Air Duct Tumors

Module 7. Pediatric Urology I. Upper Urinary Tract. Pathology and Surgical Techniques

- 7.1. Kidney anomalies. Horseshoe Kidney
 - 7.1.1 Renal anomalies of position, shape and fusion
 - 7.1.1.1. Simple renal ectopia or ectopic kidney
 - 7.1.1.2. Crossed renal ectopia
 - 7.1.1.3. Horseshoe Kidney
 - 7.1.2 Kidney anomalies of number and size
 - 7.1.2.1. Renal agenesis
 - 7.1.2.2. Small kidney
 - 7.1.2.3. Megacaliosis
 - 7.1.3 Renal cystic anomalies
 - 7.1.3.1. Autosomal dominant polycystic kidney disease (adult)
 - 7.1.3.2. Autosomal Recessive polycystic kidney disease (Infant)
 - 7.1.3.3. Malformative syndromes with renal cysts
 - 7.1.3.3.1. Tuberous Sclerosis
 - 7.1.3.3.2. Von Hippel-Lindau Disease
 - 7.1.3.4. Multicystic dysplastic kidney
 - 7.1.3.5. Cystic nephroma
 - 7.1.3.6. Simple renal cyst
 - 7.1.3.7. Acquired renal cystic disease
 - 7.1.3.8. Calyceal diverticulum
- 7.2. Pyeloureteral Stenosis
 - 7.2.1 Introduction
 - 7.2.2 Embryology
 - 7.2.3 Etiopathogenesis.
 - 7.2.3.1. Intrinsic Factors:
 - 7.2.3.2. Extrinsic Factors
 - 7.2.3.3. Functional factors
- 7.2.4 Clinical Symptoms
- 7.2.5 Diagnosis
 - 7.2.5.1. Ultrasound
 - 7.2.5.2. CAT
 - 7.2.5.3. Magnetic Resonance
 - 7.2.5.4. Renogram
- 7.2.6 Indications
- 7.2.7 Treatment
 - 7.2.7.1. Open pyeloplasty
 - 7.2.7.1.1. Anderson Hynes
 - 7.2.7.1.2. Other Techniques
 - 7.2.7.2. Transperitoneal pyeloplasty
 - 7.2.7.2.1. Transperitoneal pyeloplasty removing the colon
 - 7.2.7.2.2. Transmesocolic pyeloplasty
 - 7.2.7.2.3. Vascular hitch
 - 7.2.7.3. Retroperitoneal pyeloplasty
 - 7.2.7.3.1. Retroperitoneal pyeloplasty
 - 7.2.7.3.2. Laparoassisted retroperitoneal pyeloplasty
- 7.3. Ureteral duplication. Ureterocele Ectopic ureter
 - 7.3.1 Ureteral duplication.
 - 7.3.2 Ureterocele
 - 7.3.3 Ectopic ureter
 - 7.3.4 Contributions of endourology
- 7.4. Obstructive megaureter
 - 7.4.1 Incidence
 - 7.4.2 Etiopathogenesis.
 - 7.4.3 Pathophysiology
 - 7.4.4 Diagnosis
 - 7.4.4.1. Ultrasound
 - 7.4.4.2. C.U.M.S.
 - 7.4.4.2.1. Diuretic renogram (MAG)
 - 7.4.4.2.2. Other Diagnostic Tests

- 7.4.5 Differential Diagnosis
 - 7.4.5.1. Treatment
 - 7.4.5.2. Conservative Management
 - 7.4.5.3. Surgical Management
 - 7.4.5.3.1. Ureterostomy
 - 7.4.5.3.2. Extravesical Ureteral Reimplantation
 - 7.4.5.3.3. Ureteral Catheter Placement
 - 7.4.5.4. Ureteral Reimplantation.
 - 7.4.5.4.1. Endourological Treatment
 - 7.4.5.4.2. Postoperative Aftercare.
- 7.5. Vesicoureteral Reflux
 - 7.5.1 Definition, types and classification of vesicoureteral reflux (VUR)
 - 7.5.2 Epidemiology of primary VUR
 - 7.5.2.1. ASD Prevalence
 - 7.5.2.2. Urinary Tract Infections and RVU
 - 7.5.2.3. VUR nephropathy
 - 7.5.2.4. Vesicoureteral reflux and end-stage renal failure (ESRD)
 - 7.5.3 Embryology of the Ureterovesical Junction
 - 7.5.4 ACS Pathophysiology
 - 7.5.4.1. Vesicoureteral Reflux
 - 7.5.4.2. VUR / urinary tract infection / kidney damage
 - 7.5.5 Clinical diagnosis of VUR
 - 7.5.5.1. Prenatal hydronephrosis
 - 7.5.5.2. Urinary Tract Infections
 - 7.5.6 Diagnostic Imaging of the RVU
 - 7.5.6.1. Serial voiding cystourethrography (CUMS)
 - 7.5.6.2. Direct cystogram (CGD)
 - 7.5.6.3. Indirect cystogram (CGI)
 - 7.5.6.4. Voiding echocystography (ECM)
 - 7.5.6.5. Renal Ultrasound Scan
 - 7.5.6.6. Nuclear Medicine
- 7.5.7 RVU therapeutic options
 - 7.5.7.1. Observational
 - 7.5.7.2. Antibiotic Prophylaxis
 - 7.5.7.3. Surgical treatment: open surgery, endoscopic surgery, laparoscopic/robotic surgery
- 7.6. Renal Lithiasis
 - 7.6.1 Epidemiology and Risk Factors
 - 7.6.2 Clinical Introduction and Diagnosis
 - 7.6.2.1. Clinical Presentation
 - 7.6.2.2. Diagnosis
 - 7.6.3 Treatment
 - 7.6.3.1. Treatment of the acute episode
 - 7.6.3.2. Medical Treatment
 - 7.6.3.3. Surgical Management
 - 7.6.3.3.1. Extracorporeal Shock Wave Lithotripsy
 - 7.6.3.3.2. Percutaneous Nephrolithotomy
 - 7.6.3.3.3. Ureterorenoscopy
 - 7.6.3.3.4. Open Surgery, Laparoscopy and Robotic
 - 7.6.4 Long-Term Follow-Up Using Recurrence Techniques
- 7.7. Renal Transplant
 - 7.7.1 Renal Transplantation Surgery
 - 7.7.1.1. Obtaining the river
 - 7.7.1.1.1. Multiorgan (corpse donor)
 - 7.7.1.1.2. Living donor nephrectomy
 - 7.7.1.2. Bench Surgery
 - 7.7.1.3. Renal Implant
 - 7.7.1.4. Surgical complications
 - 7.7.2 Factors affecting the Survival of graft
 - 7.7.2.1. Donors
 - 7.7.2.1.1. Source of the donor
 - 7.7.2.1.2. Donor age
 - 7.7.2.1.3. Histocompatibility
 - 7.7.2.2. Receptor
 - 7.7.2.2.1. Age of receiver
 - 7.7.2.2.2. Early transplantation (predialysis)

- 7.7.2.2.3. Oncologic Urologic Pathology
 - 7.7.2.2.4. Previous vascular problems
 - 7.7.2.2.5. Primary Kidney Disease
 - 7.7.2.3. Delay of initial injection function
 - 7.7.2.4. Immunosuppressive Treatments
 - 7.7.2.5. Rejection
 - 7.7.3 Renal Transplantation Results
 - 7.7.3.1. Short and to Long-Term Survival of Graft
 - 7.7.3.2. Morbidity and Mortality
 - 7.7.4 Loss of graft
 - 7.7.4.1. Trasplactectomy
 - 7.7.5 Kidney transplant combined with other organs
 - 7.7.5.1. Hepatorenal transplant
 - 7.7.5.2. Cardio-renal transplant
 - 7.7.6 Controversies
 - 7.7.7 Future Perspectives Challenges
- 7.8. Current status of transperitoneal urological laparoscopy
 - 7.8.1 La Transperitoneal Urological Laparoscopy
 - 7.8.2 Surgical Techniques
 - 7.8.2.1. Nephrectomy.
 - 7.8.2.2. Heminephrectomy
 - 7.8.2.3. Pyeloplasty
 - 7.8.2.4. Vesicoureteral Reflux Surgery
 - 7.8.2.5. Congenital Obstructive Megaureter
 - 7.8.2.6. Undescended testicle. Sexual differentiation disorders
- 7.9. Pediatric percutaneous renal surgery
 - 7.9.1 Endourology
 - 7.9.2 Historical Recollection
 - 7.9.3 Presentation of objectives
 - 7.9.4 Surgical Technique.
 - 7.9.4.1. Surgical Planning
 - 7.9.4.2. Patient Positioning
 - 7.9.4.3. Details of the percutaneous puncture
 - 7.9.4.4. Access Methods

- 7.9.5 Surgical Indications
 - 7.9.5.1. Renal Lithiasis
 - 7.9.3.2. Pyeloureteral Stenosis
 - 7.9.3.3. Other indications
- 7.9.6 Literature Review.
 - 7.9.6.1. Experience in pediatric urology
 - 7.9.6.2. Miniaturization of instrumentation
 - 7.9.6.3. Current Indications
- 7.10. Pediatric neumovesicostomy and retroperitoneoscopy
 - 7.10.1 Pneumovesicostomy
 - 7.10.2 Technique
 - 7.10.3 Bladder diverticulectomy
 - 7.10.4 Ureteral Reimplantation.
 - 7.10.5 Bladder Neck Surgery
 - 7.10.6 Retroperitoneoscopy

Module 8. Pediatric Urology II. Lower Urinary Tract Pathology

- 8.1. Neurogenic bladder dysfunction. Urinary Incontinence.
 - 8.1.1 Non-neuropathic bladder-intestinal dysfunction
 - 8.1.1.1. Epidemiology
 - 8.1.1.2. Etiopathogenesis.
 - 8.1.2 Causes of lower urinary tract dysfunction
 - 8.1.2.1. Fundamental patrons of DTUI
 - 8.1.2.2. Postponing patient
 - 8.1.2.3. Other DTUI patrons
 - 8.1.3 Associated Problems
 - 8.1.3.1. Vesico-ureteral reflux and Urinary Tract Infection
 - 8.1.3.2. Psychosocial Problems
 - 8.1.4 Diagnostic Protocol
 - 8.1.4.1. Medical History
 - 8.1.4.2. Physical Examination
 - 8.1.4.3. Daily Micturition
 - 8.1.4.4. Laboratory Studies

- 8.1.4.5. Imaging Tests
- 8.1.4.6. Non-invasive urodynamic studies
- 8.1.4.7. Invasive Urodynamic Study
- 8.1.4.8. Gradation of symptomatology
- 8.1.5 Therapeutic Approach
 - 8.1.5.1. Urotherapy
 - 8.1.5.2. Drug Therapy
 - 8.1.5.3. Botulinum toxin
 - 8.1.5.4. Intermittent catheterizations
 - 8.1.5.5. ICCS therapeutic recommendations
- 8.2. Neurogenic Bladder
 - 8.2.1 Urinary Tract
 - 8.2.1.1. Innervation
 - 8.2.1.2. Operation
 - 8.2.1.3. Physiopathology of neuropathic vejiga
 - 8.2.2 The neuropathic bladder
 - 8.2.2.1. Prevalence and Etiology
 - 8.2.2.2. Urinary Tract Obstructions
 - 8.2.3 Physiopathology of the neuropathic bladder
 - 8.2.3.1. Diagnosis
 - 8.2.3.2. Suspected diagnosis
 - 8.2.3.3. Ultrasound
 - 8.2.3.4. CUMS and DMSA
 - 8.2.4 Urodynamic Study
 - 8.2.4.1. Flowmetry
 - 8.2.4.2. Cystomanometry
 - 8.2.4.3. Pressure-flow study
 - 8.2.5 Medical treatment
 - 8.2.5.1. Anticholinergics
- 8.3. Urinary diversion in pediatric age
 - 8.3.1 Physiopathology of renal damage in pediatric age associated with uropathy
 - 8.3.2 Dysplasia
 - 8.3.1.1. Congenital Urinary Obstruction
 - 8.3.1.2. Acquired Acute/Chronic Urinary Obstruction
 - 8.3.1.3. Role of Reflux/ Cicatricial Nephropathy Associated with Stroke
 - 8.3.1.4. Secondary damage to bladder dysfunction
 - 8.3.3 Surgical urinary diversion
 - 8.3.3.1. Anatomy
 - 8.3.3.2. Surgical Techniques.
 - 8.3.3.3. Endourological techniques
 - 8.3.3.4. Percutaneous Techniques
 - 8.3.4 Clinical Management
 - 8.3.4.1. Initial Management
 - 8.3.4.2. Care and removal
 - 8.3.5 Long-Term Results
- 8.4. Pediatric cystoscopy and ureteroscopy
 - 8.4.1 Cystoscopy
 - 8.4.1.1. Basic Components
 - 8.4.2 Cystourethroscopy
 - 8.4.2.1. Most common types
 - 8.4.3 Ureteroscopy.
 - 8.4.3.1. Basic Components
 - 8.4.3.2. Cystourethroscopy
 - 8.4.3.3. Most common types
- 8.5. Female Genital Abnormalities
 - 8.5.1 Embryological Recall
 - 8.5.2 Congenital Disorders
 - 8.5.2.1. Changes dependent on the genital tubercle
 - 8.5.2.2. Changes dependent on the labioscrotal folds
 - 8.5.2.3. Changes dependent on the urogenital sinus
 - 8.5.2.4. Changes dependent on the development of Mullerian structures
 - 8.5.3 Changes acquired
 - 8.5.4 Changes dependent on the urinary tract

- 8.6. Urogenital Sinus
 - 8.6.1. Embryological Recall
 - 8.6.2. urogenital sinus
 - 8.6.2.1. in the cloaca
 - 8.6.2.2. in Different Sexual Development (DSD)
 - 8.6.2.3. in other entities
 - 8.6.3. Urogenital sinus treatment
 - 8.7. Extrophy Epispadias Complex
 - 8.7.1. Extrophy Epispadias Complex
 - 8.7.1.1. The History of CEE
 - 8.7.1.2. Epidemiology and Current Situation
 - 8.7.1.3. Embryology and associated anomalies
 - 8.7.1.4. Anatomical description and variants of the EEC
 - 8.7.2. Diagnostic Approach
 - 8.7.2.1. Antenatal diagnosis
 - 8.7.2.2. Clinical diagnosis
 - 8.7.2.3. Complementary tests and exams, according to profitability
 - 8.7.3. Clinical Management
 - 8.7.3.1. Multidisciplinary Teams
 - 8.7.3.2. Prenatal Genetic Counseling
 - 8.7.3.3. Initial management of the patient with EEC
 - 8.7.3.3.1. Comparative analysis of different surgical approaches
 - 8.7.3.4. complete primary cierre
 - 8.7.3.5. Closing in stages
 - 8.7.3.6. Deferred primary closing
 - 8.7.3.7. Long-Term Management of the with CEE Patient
 - 8.7.4. Opportunities for developing new knowledge
 - 8.8. Urethral malformations. Posterior Urethral flap
 - 8.8.1. Posterior Urethral Valves
 - 8.8.1.1. Epidemiology
 - 8.8.1.2. Embryology and classification
 - 8.8.1.3. Pathophysiology
 - 8.8.1.4. Clinical Introduction and Diagnosis
 - 8.8.1.5. Treatment
 - 8.8.1.6. Prognosis
 - 8.8.1.7. VUP and kidney transplant
 - 8.8.2. Anterior urethral valves
 - 8.8.2.1. Classification
 - 8.8.2.2. Embryology and etiology
 - 8.8.2.3. Clinical Presentation
 - 8.8.2.4. Diagnosis
 - 8.8.2.5. Treatment
 - 8.8.3. Ureteral Stenosis
 - 8.8.3.1. Etiology
 - 8.8.3.2. Clinical Presentation
 - 8.8.3.3. Diagnosis
 - 8.8.3.4. Treatment
- 8.9. Bladder diverticula, urinary anomalies and other bladder malformations
 - 8.9.1. Bladder Diverticulum
 - 8.9.1.1. Etiology and associated syndromes
 - 8.9.1.2. Clinical Presentation
 - 8.9.1.3. Diagnosis
 - 8.9.1.4. Treatment
 - 8.9.2. Urachal Abnormalities
 - 8.9.2.1. Patent Urachus
 - 8.9.2.2. Urachal sinus
 - 8.9.2.3. Urachus cyst
 - 8.9.2.4. Urachal diverticulum
 - 8.9.2.5. Diagnosis
 - 8.9.2.6. Treatment
 - 8.9.3. Megavejiga
 - 8.9.4. Bladder hypoplasia
 - 8.9.5. Bladder duplication
 - 8.9.6. Bladder agenesis
 - 8.9.7. Other bladder anomalies

- 8.10. Management protocol for pediatric enuresis
 - 8.10.1 Definitions
 - 8.10.2 Pathophysiology
 - 8.10.3 Comorbidities
 - 8.10.4 Examinations
 - 8.10.4.1. Medical History
 - 8.10.4.2. Physical Examination
 - 8.10.4.3. Complementary Tests
 - 8.10.5 Treatment
 - 8.10.5.1. Indications
 - 8.10.5.2. General Recommendations
 - 8.10.5.3. Treatment Algorithm
 - 8.10.5.4. Therapy Options

Module 9. Pediatric Plastic Surgery

- 9.1. Vascular Anomalies. Vascular Tumours.
 - 9.1.1 Classification
 - 9.1.2 Benign Vascular Tumors
 - 9.1.3 Vascular tumors with aggressive or potentially malignant behavior
 - 9.1.4 Malign Vascular Tumors
- 9.2. Vascular Anomalies. Spinal Vascular Malformations
 - 9.2.1 Classification
 - 9.2.2 Capillary malformations and associated syndromes
 - 9.2.3 Venous malformations and associated syndromes
 - 9.2.4 Arteriovenous malformations and associated syndromes
 - 9.2.5 Lymphatic malformations and associated syndromes
- 9.3. Childhood burns
 - 9.3.1 Medical History
 - 9.3.2 First Aid
 - 9.3.3 Evaluation and Management Initial
 - 9.3.4 Outpatient management
 - 9.3.5 Hospital management
 - 9.3.6 Surgical Treatment
 - 9.3.7 Secuelas
- 9.4. Congenital hands of Anomalies
 - 9.4.1 Embryonic Development
 - 9.4.2 Classification
 - 9.4.3 Polydactyly
 - 9.4.4 Syndactyly
- 9.5. Injuries to the hand
 - 9.5.1 Epidemiology
 - 9.5.2 Exploration
 - 9.5.3 Basis of treatment
 - 9.5.4 Digital trauma
- 9.6. Cutaneous and acne pathology
 - 9.6.1 . Anatomy of the Skin
 - 9.6.2 Congenital Melanocytic Nevi
 - 9.6.3 Acquired Melanocytic Nevi
 - 9.6.4 Melanoma
 - 9.6.5 Non-pigmented skin lesions
- 9.7. Breast pathology in childhood and adolescence
 - 9.7.1 Embryonic Development
 - 9.7.2 Classification
 - 9.7.3 Congenital and developmental disorders (alterations in size, number and asymmetries)
 - 9.7.4 Acquired disorders (functional, inflammatory and tumor pathology).
- 9.8. Management of cicatricial sequelae
 - 9.8.1 Scar and sequels
 - 9.8.2 Phases of Healing
 - 9.8.3 Anomalous scarring
 - 9.8.4 Treatment of cicatricial sequelae
- 9.9. Skin coverage
 - 9.9.1 Types of Wounds
 - 9.9.2 Types of Closure
 - 9.9.3 Skin patches and injections
 - 9.9.4 Expansión titular
 - 9.9.5 Negative Pressure Therapy
 - 9.9.6 Dermal substitutes
- 9.10. Special acquired skin and deep tissue lesions
 - 9.10.1 Extravasations
 - 9.10.2 Necrotizing Fasciitis
 - 9.10.3 Compartment Syndrome



Module 10. Pediatric Oncological Surgery

10.1 Tumors in the pediatric patient

- 10.1.1 Epidemiology
- 10.1.2 Etiology
- 10.1.3 Diagnosis
- 10.1.4 Tumor staging
- 10.1.5 Therapeutic principles: surgery, chemotherapy, radiotherapy and immunotherapy
- 10.1.6 Future therapies and rectums

10.2. Wilms Tumour. Other Renal Tumors

- 10.2.1 Wilms Tumor
 - 10.2.1.1. Epidemiology
 - 10.2.1.2. Clinical Symptoms
 - 10.2.1.3. Diagnosis
 - 10.2.1.4. Staging. Umbrella Protocol
 - 10.2.1.5. Treatment
 - 10.2.1.6. Prognosis
- 10.2.2 Other Renal Tumors
 - 10.2.2.1. Clear Cell Sarcoma
 - 10.2.2.2. Rhabdoid tumor
 - 10.2.2.3. Renal Cell Carcinoma
 - 10.2.2.4. Congenital mesoblastic nephroma
 - 10.2.2.5. Cystic nephroma
 - 10.2.2.6. Partially differentiated cystic nephroblastoma

10.3. Neuroblastoma

- 10.3.1 Epidemiology
- 10.3.2 Histopathology and Classification Molecular Biology
- 10.3.3 Clinical Presentation. Syndromes Associated to Child Hemangioma
- 10.3.4 Diagnosis: laboratory and imaging techniques
- 10.3.5 Staging and risk group
- 10.3.6 Multidisciplinary treatment: chemotherapy, surgery, radiotherapy, immunotherapy. New strategies
- 10.3.7 Response Evaluation
- 10.3.8 Prognosis

- 10.4. Benign Hepatic Tumors and Malignant
 - 10.4.1. Diagnosis of liver masses
 - 10.4.2. Benign Hepatic Tumors
 - 10.4.2.1. Child Hemangioma
 - 10.4.2.2. Mesenchymal hamartoma
 - 10.4.2.3. Focal Nodular Hyperplasia
 - 10.4.2.4. Adenomas
 - 10.4.3. Malign Hepatic Tumors
 - 10.4.3.1. Hepatoblastoma
 - 10.4.3.2. Hepatocellular Carcinoma
 - 10.4.3.3. Hepatic angiosarcoma
 - 10.4.3.4. Other liver sarcomas
- 10.5. Pediatric sarcomas
 - 10.5.1. Initial classification
 - 10.5.2. Rhabdomyosarcoma
 - 10.5.2.1. Epidemiology
 - 10.5.2.2. Risk Factors
 - 10.5.2.3. Histopathology
 - 10.5.2.4. Clinical Symptoms
 - 10.5.2.5. Diagnosis
 - 10.5.2.6. Staging
 - 10.5.2.7. Treatment
 - 10.5.2.8. Prognosis
 - 10.5.3. Non-rhabdomyosarcoma
 - 10.5.3.1. Synovial Sarcoma
 - 10.5.3.2. Infantile fibrosarcoma
 - 10.5.3.3. Malignant peripheral nerve sheath tumor, malignant schwannoma or neurofibrosarcoma
 - 10.5.3.4. Dermatofibrosarcoma Protuberans
 - 10.5.3.5. Desmoplastic Small Round Cell Tumor
 - 10.5.3.6. Liposarcomas
 - 10.5.3.7. Leiomyosarcoma
 - 10.5.3.8. Angiosarcoma
 - 10.5.3.9. Solitary Fibrous Tumor
 - 10.5.3.10. Undifferentiated Soft Tissue Sarcomas
 - 10.5.3.11. Inflammatory Myofibroblastic Sarcoma
 - 10.5.3.12. Others
- 10.5.4. Extraosseous bone sarcomas
- 10.6. Gonadal tumors
 - 10.6.1. Testicular Tumors
 - 10.6.1.1. Epidemiology
 - 10.6.1.2. Clinical Symptoms
 - 10.6.1.3. Diagnosis
 - 10.6.1.4. Analytical Determinations Tumor Markers
 - 10.6.1.5. Imaging Tests
 - 10.6.1.6. Staging
 - 10.6.1.7. Classification
 - 10.6.1.8. Treatment
 - 10.6.1.9. Prognosis
 - 10.6.1.10. Histopathology
 - 10.6.1.11. Germ Cell Tumors
 - 10.6.1.12. Stromal tumors
 - 10.6.1.13. Metastatic Spinal Tumors
 - 10.6.1.14. Paratesticular tumors
 - 10.6.2. Ovarian Tumors.
 - 10.6.2.1. Epidemiology
 - 10.6.2.2. Clinical Symptoms
 - 10.6.2.3. Diagnosis
 - 10.6.2.4. Analytical Determinations Tumor Markers
 - 10.6.2.5. Imaging Tests
 - 10.6.2.6. Staging
 - 10.6.2.7. Classification
 - 10.6.2.8. Treatment
 - 10.6.2.9. Prognosis
 - 10.6.2.10. Histopathology
 - 10.6.2.11. Mature teratoma
 - 10.6.2.12. Gonadoblastoma

- 10.6.2.13. Unripe teratoma
- 10.6.2.14. Endodermal sinus tumor
- 10.6.2.15. Choriocarcinoma
- 10.6.2.16. Embryonic carcinoma
- 10.6.2.17. Dysgerminoma
- 10.6.2.18. Germ Cell Tumors
- 10.6.3 Preservation of fertility in pediatric oncology patients
 - 10.6.3.1. Gonadotoxic treatments
 - 10.6.3.2. Chemotherapy
 - 10.6.3.3. Radiotherapy
 - 10.6.3.4. Preservation techniques
 - 10.6.3.5. Ovarian suppression
 - 10.6.3.6. Oophoropexy or ovarian transposition
 - 10.6.3.7. Ovarian Cortex Cryopreservation
- 10.6.4 Combined Technique
- 10.7 Surgical support in pediatric hemato-oncology
 - 10.7.1 Pediatric hematological diseases for the pediatric surgeon
 - 10.7.2 Biopsies
 - 10.7.2.1. types
 - 10.7.2.2. Incisional and scisional biopsy techniques
 - 10.7.2.3. Tru-cut
 - 10.7.2.4. Coaxial needle
 - 10.7.2.5. Ultrasound for biopsy in pediatric oncology
 - 10.7.3 Enteral and Parenteral Nutrition in the Dermatology Ill Patient
 - 10.7.4 Vascular Access
 - 10.7.4.1. classification
 - 10.7.4.2. Eco-guided placement technique for vascular access
 - 10.7.5 Surgical emergencies in the immunocompromised patient: neutropenic enterocolitis. Hemorrhagic Cystitis
- 10.8. Bone Tumors
 - 10.8.1 Classification
 - 10.8.1.1. Benign Bones Tumors
 - 10.8.1.1.1. Epidemiology
 - 10.8.1.1.2. Clinical Manifestations
 - 10.8.1.1.3. Diagnosis and Histological Classifications
 - 10.8.1.1.3.1. Bone Tumors
 - 10.8.1.1.3.2. Cartilaginous tumors
 - 10.8.1.1.3.3. Fibrous Tumors
 - 10.8.1.1.3.4. bony cysts
 - 10.8.1.2. Malign Bones Tumors
 - 10.8.1.2.1. Introduction
 - 10.8.1.2.2. Ewing Sarcoma
 - 10.8.1.2.2.1. Epidemiology
 - 10.8.1.2.2.2. Clinical Symptoms
 - 10.8.1.2.2.3. Diagnosis
 - 10.8.1.2.2.4. Treatment
 - 10.8.1.2.2.5. Prognosis
 - 10.8.1.2.3. Osteosarcoma
 - 10.8.1.2.3.1. Epidemiology
 - 10.8.1.2.3.2. Clinical Symptoms
 - 10.8.1.2.3.3. Diagnosis
 - 10.8.1.2.3.4. Treatment
 - 10.8.1.2.3.5. Prognosis
- 10.9. Teteromas
 - 10.9.1 Ovarian Germ Cell Tumors
 - 10.9.2 Mediastinal teratomas
 - 10.9.3 Retroperitoneal teratomas
 - 10.9.4 Sacrococcygeal Teratomas
 - 10.9.5 Other Locations
- 10.10. Endocrine Tumors
 - 10.10.1 Adrenal Gland Gland Tumors: Pheochromocytoma
 - 10.10.1.1. Epidemiology
 - 10.10.1.2. Genetics
 - 10.10.1.3. Presentation and evaluation
 - 10.10.1.4. Treatment
 - 10.10.1.5. Prognosis

- 10.10.2 Thyroid tumors
 - 10.10.2.1. Epidemiology
 - 10.10.2.2. Genetics
 - 10.10.2.3. Clinical Symptoms
 - 10.10.2.4. Diagnosis. Imaging and cytology
 - 10.10.2.5. Preoperative endocrinological management, surgical intervention, postoperative management and adjunctive treatments
 - 10.10.2.6. Complications
 - 10.10.2.7. Postoperative stage and categorization
 - 10.10.2.8. Follow-up according to stage

Module 11. Genitourinary Endoscopy

- 11.1. Equipment. Cystoscopes and Ureterorenoscopes
- 11.2. Instrumentation Material
- 11.3. Hydronephrosis. Ureterohydronephrosis
 - 11.3.1 Pyeloureteral Stenosis Anterograde and Retrograde Dilatation and Endopyelotomy
 - 11.3.2 Congenital Obstructive Megaureter Dilatation of the Ureterovesical Junction
- 11.4. Bladder Pathology I
 - 11.4.1 Ureteral Vesic Reflux: Injection of Material at the Ureterovesical Junction
- 11.5. Bladder Pathology II
 - 11.5.1 Cystoscopy Bladder Masses
 - 11.5.2 Bladder Diverticulum Ureterocele
- 11.6. Bladder Pathology III
 - 11.6.1 Bladder Dysfunction Botox Injection
- 11.7. Urethral Pathology.
 - 11.7.1 Ureteral Stenosis Ureteral Traumatism Urethrotomy.
 - 11.7.2 Urethra Valvles Urethral Diverticula
- 11.8. Lithiasis I
 - 11.8.1 Percutaneous Nephrolithotomy
 - 11.8.2 Retrograde Intrarenal Surgery

- 11.9. Lithiasis II
 - 11.9.1 Ureteral Lithiasis Ureterorenoscopy
 - 11.9.2 Bladder Lithiasis Special Situations: Enterocystoplasties and Ducts
 - 11.9.3 Catheterizable
- 11.10. Gynecological Pathology
 - 11.10.1 Urogenital Sinus Sewer
 - 11.10.2 Vaginal Malformations

Module 12. Endoscopy Via Digestive Tract

- 12.1. Team, Instrumentation and Pre-Procedure Patient Preparation
- 12.2. Sedation and Anesthesia for Digestive Endoscopic Procedures With Children
- 12.3. Oesophageal I
 - 12.3.1 Oesophageal stricture. Achalasia Esophageal Dilatation and Endoluminal Prosthesis
 - 12.3.2 Extraction of Foreign Bodies from the Oesophageal
- 12.4. Oesophageal II
 - 12.4.1 Esophageal Varices Ligation of Varicose Veins
- 12.5. Caustic Injuries
- 12.6. Stomach I
 - 12.6.1 Percutaneous Gastrostomy
 - 12.6.2 Anti-Reflux Surgical Techniques
- 12.7. Stomach II
 - 12.7.1 Gastric Lesions Excision
 - 12.7.2 Gastric Foreign Bodies Bezoars
- 12.8. Pyloro-Duodenal Pathology
 - 12.8.1 Pyloric Stenosis
 - 12.8.2 Duodenal Stenosis and Duodenal Cysts
- 12.9. Colon I
 - 12.9.1 Colonoscopy Rectal Stenosis
 - 12.9.2 Ulcerative Colitis
 - 12.9.3 Colorectal Polyps
- 12.10. Colon II
 - 12.10.1 Chromoendoscopy
 - 12.10.2 Capsuloendoscopy

Module 13. Airway Endoscopy

- 13.1. Sedation and Anesthesia in Pediatric Bronchoscopy
- 13.2. Bronchoscopy.
 - 13.2.1 Exploration of the Airway in the Otorhinolaryngological Practice
 - 13.2.2 Equipment and Instrumentation in Rigid and Flexible Bronchoscopy
 - 13.2.3 Indications of Rigid and Flexible Bronchoscopy
- 13.3. Diagnostic Procedures I
 - 13.3.1 Bronchoalveolar Lavage
 - 13.3.2 Total Lung Lavage
- 13.4. Diagnostic Procedures II
 - 13.4.1 Endobronchial and Transbronchial Biopsy
 - 13.4.2 EBUS (Ultrasound-Guided Biopsy)
 - 13.4.3 Bronchoscopy and Study of Swallowing
- 13.5. Therapeutic Procedures I
 - 13.5.1 Extraction of Foreign Bodies
 - 13.5.2 Pneumatic Dilation
 - 13.5.3 Placement of Stents in the Airway
- 13.6. Therapeutic Procedures II
 - 13.6.1 Laser Procedures
 - 13.6.2 Cryotherapy
 - 13.6.3 Other Techniques: Endobronchial Valves, Sealants and Drug Application
 - 13.6.4 Technique Complications
- 13.7. Specific Laryngeal Pathologies I
 - 13.7.1 Laryngomalacia
 - 13.7.2 Laryngeal Paralysis.
 - 13.7.3 Laryngeal Stenosis
- 13.8. Specific Laryngeal Pathologies II
 - 13.8.1 Laryngeal Tumors and Cysts
 - 13.8.2 Other Less Frequent Pathologies: Clefting

- 13.9. Specific Tracheobronchial Pathologies I
 - 13.9.1 Tracheal/Bronchial Stenosis: Congenital and Acquired
 - 13.9.2 Tracheobronchomalacia: Primary and Secondary
- 13.10. Specific Tracheobronchial Pathologies II
 - 13.10.1 Tumours
 - 13.10.2 The Tracheotomized Patient: Care
 - 13.10.3 Other Less Frequent Pathologies: Clefting, Granuloma

Module 14. Thoracoscopy. Cervicoscopy

- 14.1. Anesthesia for Pediatric Thoracoscopy
- 14.2. Equipment, Material and Bases of Thoracoscopy
- 14.3. Chest I
 - 14.3.1 Pectus Excavatum Nuss Bar Placement
- 14.4. Chest II
 - 14.4.1 Pneumothorax
 - 14.4.2 Debridement and Placement of Endothoracic Drainage Empyema
- 14.5. Chest III
 - 14.5.1 Lobectomy in Children Pulmonary Airway Malformation (CPAM)
 - 14.5.2 Pulmonary Sequestration Congenital Lobar Hyperinsufflation
- 14.6. Chest IV
 - 14.6.1 Mediastinal Tumors
 - 14.6.2 Esophageal Duplications Bronchogenic Cysts
- 14.7. Chest V
 - 14.7.1 Pulmonary Biopsy
 - 14.7.2 Metastases Removal
- 14.8. Chest VI
 - 14.8.1 Patent Ductus Arteriosus / Vascular Rings
 - 14.8.2 Aortopexy Tracheomalacia
- 14.9. Chest VII
 - 14.9.1 Palmar Hyperhidrosis
 - 14.9.2 Treatment Thoracoscopic of Chylothorax
- 14.10. Cervicoscopy
 - 14.10.1 Minimally Invasive Thyroid, Parathyroid and Thymus Surgery

Module 15. Laparoscopy General and Digestive(I)

- 15.1. Anesthesia for Abdominal Laparoscopic Surgery
- 15.2. Materials and General Aspects of Laparoscopy
- 15.3. Gastrointestinal Tract I
 - 15.3.1 Esophageal Achalasia
 - 15.3.2 Gastroesophageal Reflux. Fundoplication
- 15.4. Gastrointestinal Tract II
 - 15.4.1 Laparoscopic Gastrectomy
 - 15.4.2 Pyloromyotomy
- 15.5. Gastrointestinal Tract III
 - 15.5.1 Bowel Intussusception
 - 15.5.2 Treatment of Intestinal Obstruction
- 15.6. Gastrointestinal Tract IV
 - 15.6.1 Meckel's Diverticulum
 - 15.6.2 Intestinal Duplications
- 15.7. Gastrointestinal Tract V
 - 15.7.1 Acute Appendicitis
- 15.8. Gastrointestinal Tract VI
 - 15.8.1 Laparoscopy in Inflammatory Bowel Disease
- 15.9. Gastrointestinal Tract VII
 - 15.9.1 Hirschsprung's Disease
 - 15.9.2 Anorectal Malformations
- 15.10. Gastrointestinal Tract VIII
 - 15.10.1 Laparoscopy for Stomas
 - 15.10.2 Rectopexy

Module 16. Laparoscopy Surgery General and Digestive (II)

- 16.1. Liver I. Biliary Tract
 - 16.1.1 Cholecystectomy.
- 16.2. Liver II Biliary Tract
 - 16.2.1 Biliary Tract Atresia Portoenterostomy of Kasai
 - 16.2.2 Choledochal Cyst
- 16.3. Liver III
 - 16.3.1 Hepatectomy
 - 16.3.2 Quistes hepáticos
- 16.4. Spleen/Pancreas
 - 16.4.1 Splenectomy Techniques
 - 16.4.2 Laparoscopic Approach to the Pancreas
- 16.5. Abdomen I
 - 16.5.1 Ventriculoperitoneal Shunts
 - 16.5.2 Catheters of Peritoneal Dialysis
- 16.6. Abdomen II
 - 16.6.1 Abdominal Trauma.
- 16.7. Abdomen III
 - 16.7.1 Chronic Abdominal Pain
- 16.8. Obesity Surgery
 - 16.8.1 Laparoscopic Techniques for Obesity
- 16.9. Diaphragm
 - 16.9.1 Morgagni's Hernia
 - 16.6.2 Diaphragmatic Relaxation
- 16.10. Abdominal Wall
 - 16.10.1 Inguinal Hernia. Laparoscopic Inguinal Herniorrhaphy

Module 17. Oncologic Laparoscopy: Gonadal Laparoscopy

- 17.1. Laparoscopy in Pediatric Tumors (I)
 - 17.1.1 Laparoscopy for Intra-abdominal Tumor Lesions
- 17.2. Laparoscopy in Pediatric Tumors (II)
 - 17.2.1 Adrenalectomy. Neuroblastoma.
- 17.3. Laparoscopy in Pediatric Tumors (III)
 - 17.3.1 Sacrococcygeal Teratomas
- 17.4. Laparoscopy in Pediatric Tumors (IV)
 - 17.4.1 Ovarian Tumors.
- 17.5. Laparoscopy Testicular(I)
 - 17.5.1 Non-Palpable Testicle Diagnosis and Treatment
- 17.6. Urachal Abnormalities
- 17.7. Laparoscopy Gynaecology(I)
 - 17.7.1 Peripubertal Ovarian Cysts
- 17.8. Laparoscopy Gynecology (II)
 - 17.8.1 Ovarian Torsion
 - 17.8.2 Tubal Pathology
- 17.9. Laparoscopy Gynecology (III)
 - 17.9.1 Uterovaginal Malformations
- 17.10. Laparoscopy Gynecology (IV)
 - 17.10.1 Laparoscopy in Sexual Differentiation Disorders

Module 18. Urological Laparoscopy

- 18.1. Upper Urinary Tract I
 - 18.1.1 Renal Annulment Transperitoneal Nephrectomy
 - 18.1.2 Renoureteral Duplication Transperitoneal Heminephrectomy
- 18.2. Upper Urinary Tract II
 - 18.2.1 Retroperitoneal Nephrectomy
 - 18.2.2 Retroperitoneal Heminephrectomy
- 18.3. Upper Urinary Tract III
 - 18.3.1 Pyeloureteral Stenosis (Transperitoneal and Retroperitoneal)
- 18.4. Upper Urinary Tract IV
 - 18.4.1 Retrocaval Ureter

- 18.5. Upper Urinary Tract V. Renal Tumor Surgery
 - 18.5.1 Wilms Tumor
 - 18.5.2 Partial Oncologic Nephrectomy
- 18.6. Lower Urinary Tract I
 - 18.6.1 Extravesical Ureteral Reimplantation
 - 18.6.2 Bladder Diverticulum
- 18.7. Lower Urinary Tract II
 - 18.7.1 Enterocystoplasty
 - 18.7.2 Bladder Neck Reconstruction
- 18.8. Lower Urinary Tract III
 - 18.8.1 Appendicovesicostomy
- 18.9. Lower Urinary Tract IV
 - 18.9.1 Prostatic and Seminal Pathology
- 18.10. Pneumovesicoscopy
 - 18.10.1 Ureteral Reimplantation.
 - 18.10.2 Bladder Diverticulum
 - 18.10.3 Bladder Neck Surgery

Module 19. Neonatal and Fetal Surgery

- 19.1. Fetal Endoscopy
 - 19.1.1 General and Technical
- 19.2. Successful Techniques
- 19.3. Fetal Posterior Urethral Valve Surgery
- 19.4. Fetal Treatment for Congenital Diaphragmatic Hernia
- 19.5. Neonatal Congenital Diaphragmatic Hernia
- 19.6. Esophageal Atresia/Long-Gap Esophageal Atresia
- 19.7. Duodenal Atresia
- 19.8. Intestinal Atresia
- 19.9. Intestinal Malrotation
- 19.10. Neonatal Ovarian Cysts

Module 20. Abdominal Surgery Through Single Port and Robotic Surgery

- 20.1. Materials and Generalities of Laparoscopic Single Port Surgery
- 20.2. Single-Port Appendectomy
- 20.3. Single-Port Nephrectomy and Heminephrectomy
- 20.4. Single Port Cholecystectomy
- 20.5. Varicocele
- 20.6. Inguinal Herniorrhaphy
- 20.7. Materials and General Aspects of Robotic Surgery
- 20.8. Thoracic Robotic Surgery
- 20.9. Abdominal Robotic Surgery
- 20.10. Urological Robotic Surgery

Module 21. Child Orthopedics

- 21.1. Clinical History of Children and their Examination
 - 21.1.1 The Examination of Infants
 - 21.1.2 The Examination of Teenagers
- 21.2. Radiodiagnostics
- 21.3. Characteristics of Children's Bones and Bone Growth
- 21.4. Angular Deformities
 - 21.4.1 Genu Varum
 - 21.4.2 Genu Valgum
 - 21.4.3 Recurvatum
 - 21.4.4 Antecurvatum
- 21.5. Torsional Deformities
 - 21.5.1 Femoral Anteversion
 - 21.5.2 Tibial Torsion
- 21.6. Length Discrepancy
- 21.7. Pediatric Lamenes
- 21.8. Apophysitis and Enthesitis
- 21.9. Pediatric Fractures
- 21.10. Pediatric Immobilizations and Orthoses
 - 21.10.1 Types of Immobilizations
 - 21.10.2 Duration of the Immobilizations

Module 22. Upper Limb

- 22.1. Agenesis and Transverse Defects
- 22.2. Radial longitudinal deficiency. Hypoplasias and Agenesis of the Thumb
- 22.3. Ulnar Longitudinal Deficiency. Proximal Radioulnar Synostosis
- 22.4. Preaxial and Postaxial Polydactyly
- 22.5. Syndactyly. Macroductyly Clinodactyly. Camptodactyly. Kirner's Deformity
- 22.6. Amniotic Band Syndrome
- 22.7. Madelung's Deformity
- 22.8. Arthrogryposis
- 22.9. Obstetric Brachial Palsy
- 22.10. Tumors Affecting the Pediatric Hand: Osteochondromatosis, Enchondromatosis and Soft Tissue Tumors

Module 23. Hip

- 23.1. Embryology, Anatomy and Biomechanics of the Hip
- 23.2. Transient Synovitis of the Hip
 - 23.2.1 Etiopathogenesis.
 - 23.2.2 Differential Diagnosis
 - 23.2.3 Orthopedic Management
- 23.3. Developmental Dysplasia of the Hip in Children under 18 Months of Age
 - 23.3.1 Concept. Historical Recollection
 - 23.3.2 Dysplasia in Children Under 6 Months of Age
 - 23.3.2.1. Diagnostic Examination
 - 23.3.2.2. Hip Ultrasound. Methods and Interpretation
 - 23.3.2.3. Therapeutic Orientation
 - 23.3.3 Dysplasia in Children aged 6-12 Months
 - 23.3.3.1 Clinical and Radiological Diagnosis
 - 23.3.3.2. Treatment
 - 23.3.4 Dysplasia in Walking Children (>12 Months)
 - 23.3.4.1. Late Diagnosis Errors
 - 23.3.4.2. Treatment Management

- 23.4. Developmental Dysplasia of the Hip in Children over 18 Months Old
 - 23.4.1 Definition and Natural History
 - 23.4.2 Etiology and Clinical Manifestations
 - 23.4.3 Clinical and Radiological Classification. Hip Risk Factors
 - 23.4.4 Differential Diagnosis
 - 23.4.5 Treatment
- 23.5. Hip Dysplasia in Older Children and Teenagers
 - 23.5.1 Causes and Types
 - 23.5.2 Diagnostic Guidance
 - 23.5.2.1. Teenage Hip Dysplasia Radiology
 - 23.5.2.2. Complementary Studies of Dysplasia: MRI, Arthrogram, CT, etc.
 - 23.5.3 Treatment
 - 23.5.3.1 Arthroscopic Treatment
 - 23.5.3.2. Open Surgery
 - 23.5.3.2.1. Pelvic Osteotomies. Techniques and Guidelines
 - 23.5.3.2.2. Femoral Osteotomies. Techniques and Guidelines
- 23.6. Legg-Calvé-Perthes Disease
 - 23.6.1 Perthes After-Effects
 - 23.6.2 Syndromic Hip
 - 23.6.3 Chondrolysis
 - 23.6.4 Sequelae of Arthritis (Septic, Rheumatic Diseases, etc.)
- 23.7. Epiphysiolysis of the Femoral Head
 - 23.7.1 Diagnosis. The way they are formed
 - 23.7.2 Etiopathogenesis.
 - 23.7.3 Types of Epiphysiolysis. Pathophysiological Mechanism
 - 23.7.4 Surgical Management
 - 23.7.4.1. In Situ Reduction
 - 23.7.4.2. Modified Dunn Procedure
 - 23.7.4.3. Late Treatment
- 23.8. Coxa vara
 - 23.8.1 Etiopathogenesis.
 - 23.8.2 Differential Diagnosis
 - 23.8.3 Treatment

- 23.9. Musculoskeletal Pain Around the Hips in Children
 - 23.9.1 Snapping Hip Syndrome
 - 23.9.1.1. Types of Snapping (Internal, External)
 - 23.9.1.2. Treatment
 - 23.9.2 Enthesitis Around the Hips in Children
 - 23.9.2.1. Enthesitis of the Spines (EIAS): Differential Diagnosis and Treatment
 - 23.9.2.2. Ischial and Iliac Crest Enthesitis. Diagnosis and Treatment
- 23.10. Hip Fractures in Children
 - 23.10.1 Biomechanical Implications of the Hip Fractures in Children
 - 23.10.2 Types of Fractures. Classification
 - 23.10.3 Diagnosis and Treatment. Treatment Management
 - 23.10.3.1. Children With Open Physes
 - 23.10.3.2. Children With Skeletal Maturity

Module 24. knee

- 24.1. Congenital Dislocation of the Knee
 - 24.1.1 Diagnosis and Classification
 - 24.1.2 Etiology
 - 24.1.3 Clinical - Radiological Findings
 - 24.1.4 Differential Diagnosis
 - 24.1.5 Clinical Findings and Associated Lesions
 - 24.1.6 Treatment
- 24.2. Patellofemoral Instability
 - 24.2.1 Prevalence and Etiology
 - 24.2.2 Types: Recurrent Dislocation, Recurrent Subluxation, Habitual Dislocation and Chronic Dislocation
 - 24.2.3 Associated Conditions
 - 24.2.4 Clinical Findings
 - 24.2.5 Radiological Findings
 - 24.2.6 Treatment
- 24.3. Osteochondritis Dissecans
 - 24.3.1 Definition and Aetiology
 - 24.3.2 Pathology
 - 24.3.3 Clinical Radiological Findings
 - 24.3.4 Treatment

- 24.4. Discoid Meniscus
 - 24.4.1 Pathogenesis.
 - 24.4.2 Clinical - Radiological Findings
 - 24.4.3 Treatment
- 24.5. Popliteal Cyst
 - 24.5.1 Definition and Clinical Findings
 - 24.5.2 Differential Diagnosis
 - 24.5.3 Pathology
 - 24.5.4 Diagnostic Tests
 - 24.5.5 Treatment
- 24.6. Apophysitis: Osgood-Schlatter's Disease, Sinding-Larsen-Johansson's Disease
 - 24.6.1 Definition and Epidemiology
 - 24.6.2 Clinical and Radiological Findings
 - 24.6.3 Treatment
 - 24.6.4 Complications
- 24.7. Ligament Lesions of the Knee: Anterior Cruciate Ligament
 - 24.7.1 Prevalence and Etiology
 - 24.7.2 Diagnosis
 - 24.7.3 Treatment in Patients with Growth Cartilage
- 24.8. Epiphysiolysis of the Distal Femur and Fractures of the Proximal Tibia
 - 24.8.1 Anatomic Considerations. Pathophysiology
 - 24.8.2 Diagnosis
 - 24.8.3 Treatment
- 24.9. Fractures of the Tibial Spines
 - 24.9.1 Pathophysiology
 - 24.9.2 Anatomic Considerations
 - 24.9.3 Diagnosis
 - 24.9.4 Treatment
- 24.10. Anterior Avulsion Fracture
 - 24.10.1 Pathophysiology
 - 24.10.2 Anatomic Considerations
 - 24.10.3 Diagnosis
 - 24.10.4 Treatment

- 24.11. Periosteal Tear of the Patella
 - 24.11.1 Pathophysiology
 - 24.11.2 Anatomic Considerations
 - 24.11.3 Diagnosis
 - 24.11.4 Treatment

Module 25. Pathology of the Foot

- 25.1. Embryology, Malformations and Deformities of the Foot in Newborns
 - 25.1.1 Polydactyly
 - 25.1.2 Syndactyly
 - 25.1.3 Ectrodactyly
 - 25.1.4 Macrodactyly
 - 25.1.5 Calcaneal Valgus or Talus Foot
- 25.2. Congenital Vertical Astragalus
- 25.3. Flexible Valgus Flatfoot
- 25.4. Serpentine Foot
- 25.5. Tarsal Coalition
- 25.6. Metatarsus Adductus and Metatarsus Varus
- 25.7. Congenital Clubfoot
- 25.8. Pes Cavus
- 25.9. Hallux valgus
- 25.10. Toe Pathology
 - 25.10.1 Hallux Varus
 - 25.10.2 Quintus Varus
 - 25.10.3 Quintus Supraductus
 - 25.10.4 Deformities of Small Toes: Mallet Toe, Hammer Toe, Claw Toe, Clinodactyly
 - 25.10.5 Brachymetatarsia
 - 25.10.6 Constriction Band Syndrome
 - 25.10.7 Agenesis and Hypoplasia of the Toes
- 25.11. Miscellaneous
 - 25.11.1 Osteochondrosis: Köning's Disease, Freiberg's Disease
 - 25.11.2 Apophysitis: Sever's Disease, Iselin's Disease
 - 25.11.3 Os Trigonum Syndrome
 - 25.11.4 Accessory Scaphoid
 - 25.11.5 Osteochondritis Dissecans of the Talus

Module 26. Spine

- 26.1. Surgical Anatomy and Approaches to the Spine
- 26.2. Cervical Spine Pathology
 - 26.2.1. Congenital Torticollis
 - 26.2.1.1. Muscular Congenital Torticollis
 - 26.2.1.2. Klippel-Feil Syndrome
 - 26.2.2. Acquired Torticollis
 - 26.2.2.1. Atlantoaxial Dislocation
 - 26.2.2.2. Other Causes: Inflammatory, Infectious, Sandifer's Syndrome
 - 26.2.3. Cervical Instability: Os Odontoideum
- 26.3. Spine Pathology
 - 26.3.1. Spondylolisthesis
 - 26.3.2. Juvenile Disc Herniation
 - 26.3.3. Scoliosis
 - 26.3.4. Early Onset
 - 26.3.5. Teenage Idiopathic Scoliosis
 - 26.3.6. Congenital Scoliosis
 - 26.3.7. Neuromuscular Scoliosis
 - 26.3.8. Early Onset Scoliosis
 - 26.3.9. Congenital Scoliosis
 - 26.3.10. Neuromuscular Scoliosis
 - 26.3.11. Spine Deformity in Other Syndromes
- 26.4. Spondylolisthesis
- 26.5. Alterations in the Sagittal Plane: Hyperkyphosis, Hyperlordosis
- 26.6. Back Pain in the Pediatric Age
- 26.7. Spinal Tumors
- 26.8. The Main Spine Fractures in Children

Module 27. Orthopedic Alterations Linked to Neuromuscular Diseases

- 27.1. Pediatric Cerebral Palsy
- 27.2. Normal and Pathological Gait. Usefulness of the Ian In Gait Disturbances.
- 27.3. Orthopedic Management of PCI: Botulinum Toxin, Casts, Orthoses
- 27.4. Hip Pathology in PCI
- 27.5. Crouch Gait in PCI
- 27.6. Myelomeningocele
- 27.7. Spinal Muscular Atrophy
- 27.8. Muscular Dystrophies: Duchenne's Disease, Other Myopathies
- 27.9. Neurological Upper Limb: Spasticity
- 27.10. Foot Associated With Neurological Pathologies (Clubfoot...)

Module 28. Skeletal Dysplasias and Syndromic Diseases

- 28.1. Achondroplasia. Hypoachondroplasia and Pseudoachondroplasia
- 28.2. Congenital Malformations of the Lower Limb
- 28.3. Other Dysplasias: Spondyloepiphyseal Dysplasia, Multiple Epiphyseal Dysplasia, Diastrophic Dysplasia, Kniest Dysplasia, Osteopetrosis, Infantile Cortical Hyperostosis, Cleidocranial Dysostosis
- 28.4. Mucopolysaccharidosis
- 28.5. Osteogenesis Imperfecta
- 28.6. Hyperlaxity Syndromes
 - 28.6.1. General Hyperlaxity Syndrome
 - 28.6.2. Marfan and Ehlers Danlos Syndromes
- 28.7. Neurofibromatosis. Congenital Pseudoarthrosis of the Tibia
- 28.8. Arthrogyposis
- 28.9. Down Syndrome
- 28.10. Children's Bone Alterations
 - 28.10.1. Rickets
 - 28.10.2. Transient Osteoporosis

Module 29. Osteoarticular Infections

- 29.1. Septic Arthritis
- 29.2. Osteomyelitis
- 29.3. Discitis and Vertebral Osteomyelitis
- 29.4. Orthopedic Pathology in Rheumatoid Arthritis
- 29.5. Other Arthropathies: Psoriatic Arthritis Reiter's Syndrome, Psoriatic Arthritis.
- 29.6. Chronic Recurrent Multifocal Osteomyelitis. CRMO

Module 30. Tumours

- 30.1. Overview and Staging of Musculoskeletal Tumors
 - 30.1.1 Epidemiology
 - 30.1.2 Clinical Presentation
 - 30.1.3 Imaging Tests
 - 30.1.4 Staging
 - 30.1.4.1. Benign Tumors
 - 30.1.4.2. Malignant tumours
- 30.2. Biopsy and Treatment Principles
 - 30.2.1 Types of Biopsy
 - 30.2.2 How to Perform a Musculoskeletal Biopsy?
 - 30.2.3 Types and Principles of Oncologic Resection
- 30.3. Cystic Lesions
 - 30.3.1 Simple Bone Cyst
 - 30.3.2 Aneurysmal Bone Cyst
- 30.4. Benign Tumors from Cartilage in Children
 - 30.4.1 Osteochondroma. Osteochondromatosis
 - 30.4.2 Enchondroma. Endochromatosis
 - 30.4.3 Chondroblastoma
 - 30.4.4 Chondromyxoid Fibroma





- 30.5. Benign Tumors from Bones in Children
 - 30.5.1 Osteoma Osteoid
 - 30.5.2 Osteoblastoma
- 30.6. Benign Tumors from Fibrous Tissue in Children
 - 30.6.1 Non-Ossifying Fibroma
 - 30.6.2 Fibrous Dysplasia
 - 30.6.3 Osteofibrous Dysplasia
 - 30.6.4 Langerhans cell histiocytosis
- 30.7. Other Tumours. Miscellaneous
 - 30.7.1 Langerhans Cell Histiocytosis. Eosinophilic Granuloma
 - 30.7.2 Giant Cell Tumor
- 30.8. Benign Tumors From Soft Tissue in Children
 - 30.8.1 Ganglion. Popliteal Cysts
 - 30.8.2 Giant cell tumour of the Tendon Sheath. Villonodular Synovitis
 - 30.8.3 Hemangioma
- 30.9. Malignant Bone Tumors of the Pediatric Skeleton
 - 30.9.1 Ewing Sarcoma
 - 30.9.2 Osteosarcomas
 - 30.9.3 Surgical Treatment Options for Unformed Skeletons
- 30.10. Malignant Tumors in Soft Tissue in Children
 - 30.10.1 Rhabdomyosarcoma
 - 30.10.2 Synovial Sarcoma
 - 30.10.3 Congenital Fibrosarcoma

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.



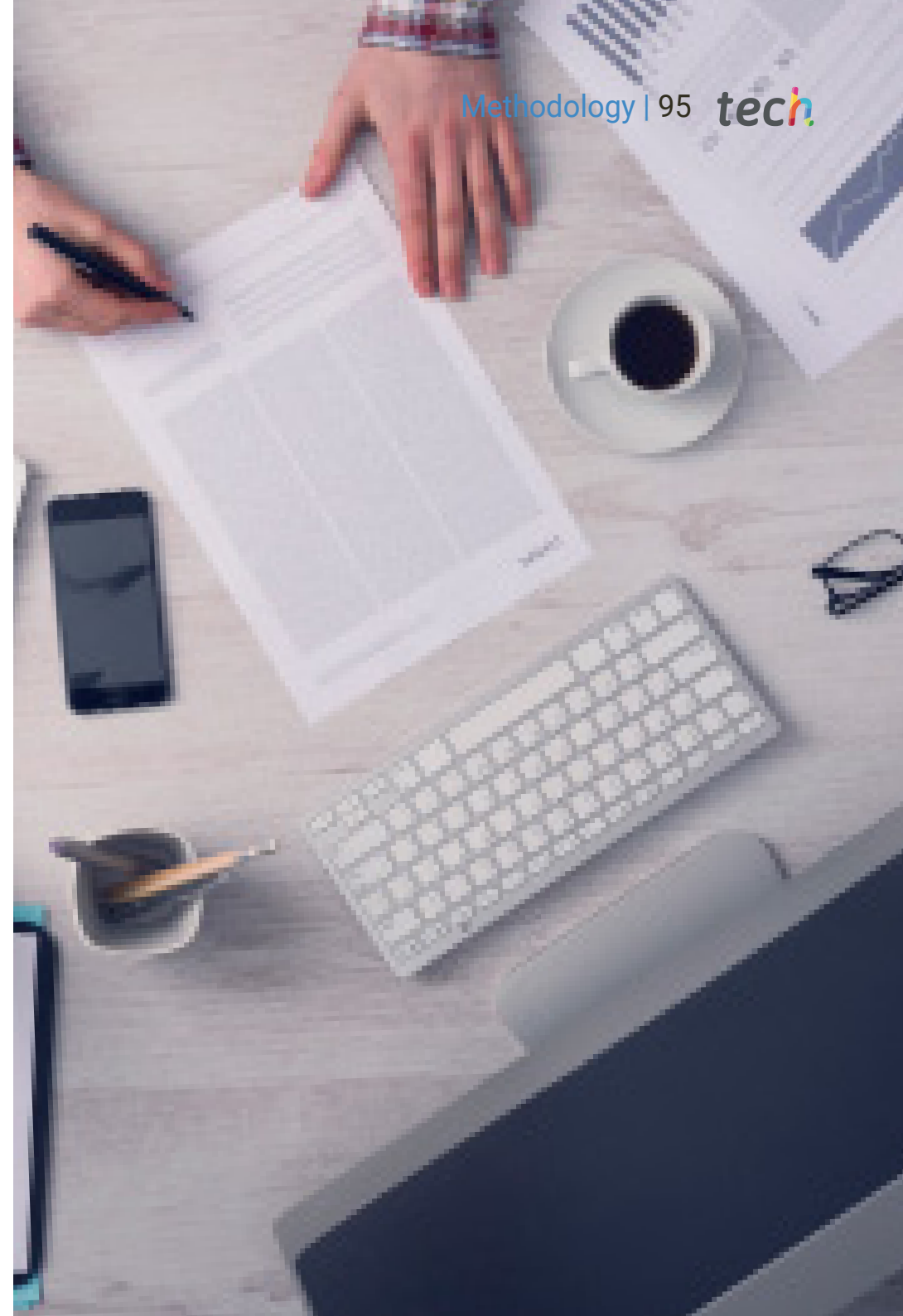
According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that 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.

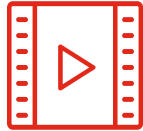
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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

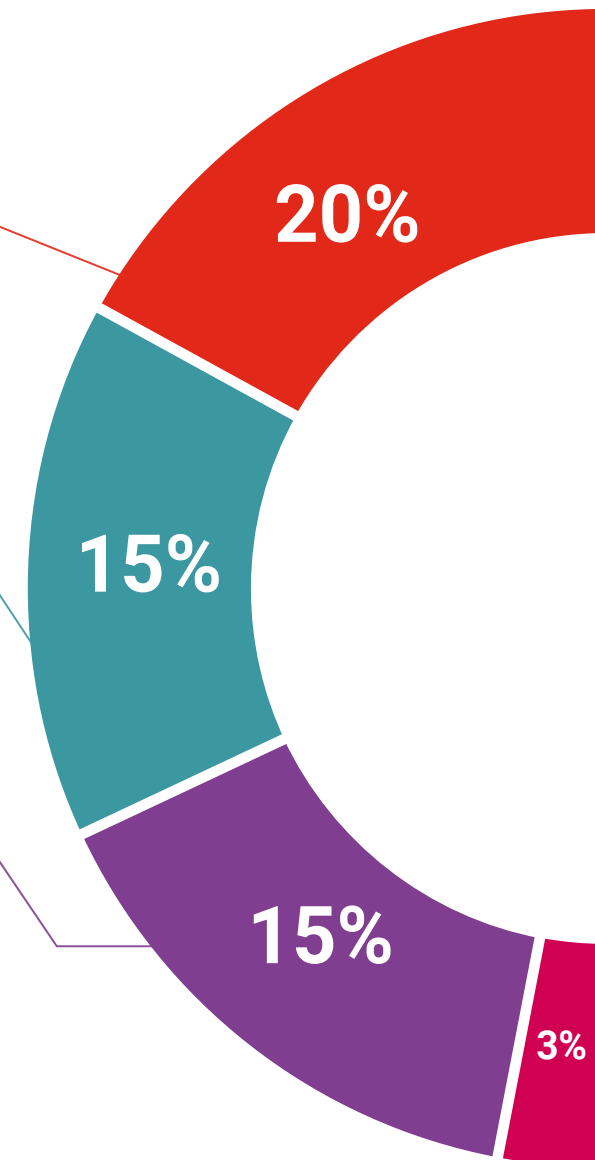
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

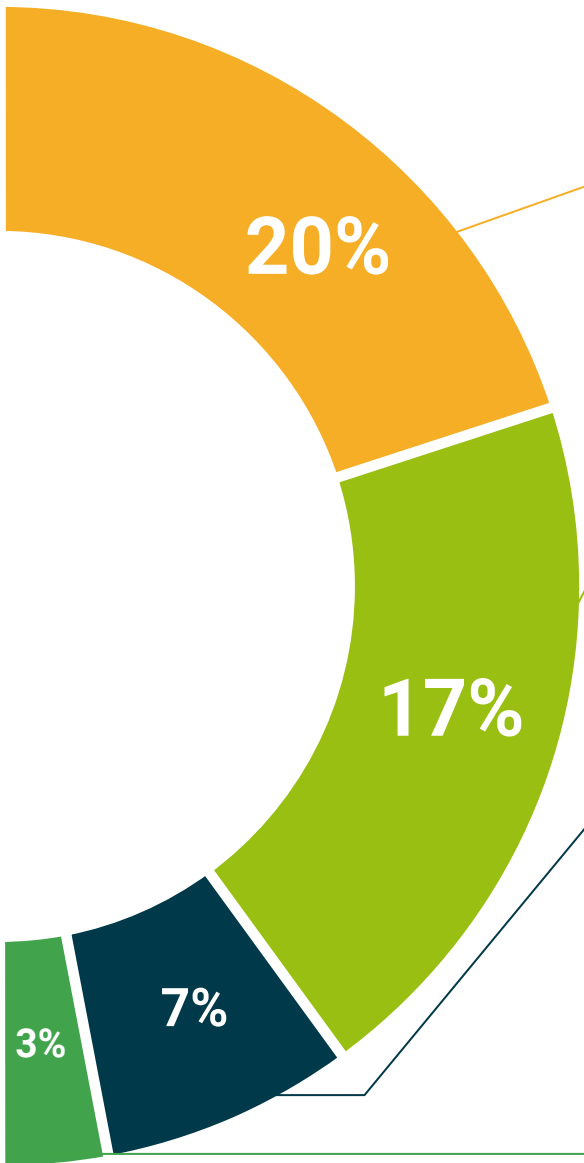
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 Advanced Master's Degree in Pediatric Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Advanced Master's Degree issued by TECH Global University.



“

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 **Advanced Master's Degree diploma in Pediatric Surgery** 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: **Advanced Master's Degree in Pediatric Surgery**

Modality: **online**

Duration: **2 years**

Accreditation: **120 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.



Advanced Master's
Degree
Pediatric Surgery

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Global University
- » Credits: 120 ECTS
- » Schedule: at your own pace
- » Exams: online

Advanced Master's Degree Pediatric Surgery

