ct pelvic muscle anatomy

CT Pelvic Muscle Anatomy: A Detailed Exploration

ct pelvic muscle anatomy offers an intriguing insight into the complex structure and function of the muscles within the pelvic region as visualized through computed tomography (CT) imaging. Understanding this anatomy is essential for radiologists, clinicians, and medical students alike, as it aids in diagnosing various conditions, planning surgeries, and appreciating the intricate relationships between muscles, bones, and surrounding organs. This article delves deep into the CT pelvic muscle anatomy, highlighting key muscles, their appearances on CT scans, and clinical relevance.

Understanding CT Imaging and Pelvic Muscle Anatomy

CT scans provide cross-sectional images of the body using X-rays, allowing for detailed visualization of bones, muscles, blood vessels, and soft tissues. When examining the pelvic region, CT imaging reveals the complex layering and arrangement of pelvic muscles, which are crucial for supporting pelvic organs, facilitating movement, and maintaining continence.

Unlike MRI, which is often preferred for soft tissue contrast, CT imaging stands out for its speed, availability, and excellent depiction of bony landmarks. This is particularly useful when evaluating traumatic injuries or malignancies involving pelvic muscles.

Why Is CT Pelvic Muscle Anatomy Important?

Recognizing the normal anatomy of pelvic muscles on CT scans helps differentiate between healthy tissue and pathological findings such as tumors, inflammation, or atrophy. It also assists in identifying muscle tears, abscesses, and hematomas, which may be less apparent clinically.

Moreover, precise knowledge of pelvic muscle anatomy enhances surgical planning, especially in urology, gynecology, and colorectal surgery, by helping surgeons avoid vital structures and optimize patient outcomes.

Key Pelvic Muscles Visible on CT Scans

The pelvic musculature can be broadly categorized into groups based on their location and function. On CT images, muscle tissue appears as intermediate-density structures, typically darker than bone but lighter than fat.

1. Levator Ani Muscle Group

The levator ani muscle complex forms the major component of the pelvic floor. It supports pelvic organs and maintains continence. This group includes:

- **Pubococcygeus:** Extends from the pubic bone to the coccyx, encircling the urethra, vagina (in females), and rectum.
- **Iliococcygeus:** Originates from the ischial spine and inserts onto the coccyx and anococcygeal ligament.
- **Puborectalis:** Creates a sling around the rectum, playing a pivotal role in fecal continence.

On CT scans, the levator ani muscles appear as a horseshoe-shaped band surrounding the pelvic outlet, often seen symmetrically on axial slices.

2. Coccygeus (Ischiococcygeus) Muscle

Located posteriorly to the levator ani, the coccygeus muscle extends from the ischial spine to the coccyx and sacrum. Although smaller, it plays a supportive role in the pelvic floor. On CT images, it appears as a thin muscle sheet posterior to the levator ani.

3. Obturator Internus Muscle

The obturator internus is a key pelvic sidewall muscle. It originates from the inner surface of the obturator foramen and inserts on the greater trochanter of the femur. Its primary function is lateral rotation of the thigh.

On CT, the obturator internus muscle forms a conspicuous structure along the lateral pelvic walls, often identifiable by its distinct oval shape on axial images.

4. Piriformis Muscle

The piriformis muscle lies deep within the pelvis, running from the anterior surface of the sacrum to the greater trochanter. This muscle is a lateral rotator and abductor of the hip.

CT imaging reveals the piriformis as a thick muscle located posteriorly, near the sacroiliac joints. It is an important landmark as it relates closely to the sciatic nerve, which can be compressed in piriformis syndrome.

5. Pelvic Diaphragm

Together, the levator ani and coccygeus muscles compose the pelvic diaphragm, a muscular sheet that forms the floor of the pelvic cavity. This diaphragm supports pelvic viscera and withstands increases in intra-abdominal pressure.

Identifying Pelvic Muscles on Different CT Planes

CT images can be viewed in axial, coronal, and sagittal planes, each offering unique perspectives on pelvic muscle anatomy.

Axial Plane

The axial view is frequently used to evaluate pelvic muscles. Here, muscles such as the levator ani, obturator internus, and piriformis are seen in cross-section, enabling assessment of size, symmetry, and density.

Coronal Plane

The coronal plane provides a frontal view, helpful for assessing the vertical extent of muscles like the levator ani and the alignment of the pelvic diaphragm.

Sagittal Plane

This side view is useful to visualize the relationship between the pelvic muscles and adjacent organs, such as the bladder, uterus, prostate, and rectum.

Common Clinical Correlations Involving Pelvic Muscles on CT

Understanding CT pelvic muscle anatomy is vital when interpreting pathological conditions affecting this region.

Pelvic Trauma

In cases of pelvic fractures or blunt trauma, pelvic muscles may show hematomas, edema, or tears. CT helps localize these injuries, guiding management.

Pelvic Floor Dysfunction

Muscle atrophy or defects in the levator ani group can lead to pelvic organ prolapse or incontinence. CT imaging can reveal structural abnormalities, although MRI remains superior for soft tissue resolution.

Neoplastic Involvement

Tumors arising from or invading pelvic muscles can be detected on CT scans. Recognizing the normal muscle anatomy aids in delineating tumor margins and planning biopsies or surgeries.

Infections and Abscesses

Pelvic muscle abscesses, often secondary to infections like diverticulitis or gynecological infections, appear as fluid collections with surrounding muscle inflammation on CT.

Tips for Interpreting CT Pelvic Muscle Anatomy

- **Correlate with Clinical History:** Symptoms such as pelvic pain, incontinence, or trauma should guide focused evaluation of pelvic muscles.
- **Use Contrast When Appropriate:** Contrast-enhanced CT can better differentiate muscles from surrounding structures and highlight inflammation or tumors.
- **Compare Bilaterally:** Symmetry is key; unilateral muscle enlargement or atrophy may indicate pathology.
- **Note Muscle Density:** Muscle should appear homogeneous; areas of hypoattenuation may suggest edema or fatty infiltration.
- **Observe Relationships:** Understanding how muscles relate to pelvic bones and organs helps in comprehensive assessment.

Exploring CT pelvic muscle anatomy reveals a fascinating and intricate network of muscles essential for numerous vital functions. Mastery of this anatomy through CT imaging empowers healthcare professionals to diagnose accurately and treat pelvic conditions effectively. Whether evaluating trauma, tumors, or functional disorders, a thorough grasp of pelvic muscle anatomy on CT is indispensable.

Frequently Asked Questions

What are the primary pelvic muscles visible in a CT scan?

The primary pelvic muscles visible in a CT scan include the levator ani group (pubococcygeus, puborectalis, iliococcygeus), coccygeus muscle, obturator internus, piriformis, and the muscles of the abdominal wall such as the rectus abdominis and the iliopsoas.

How does CT imaging help in evaluating pelvic muscle anatomy?

CT imaging provides detailed cross-sectional views of the pelvic muscles, allowing for assessment of muscle size, symmetry, density, and any pathological changes such as atrophy, inflammation, or tumors.

What is the significance of the levator ani muscle group in pelvic anatomy on CT scans?

The levator ani muscle group forms the pelvic floor, supporting pelvic organs and maintaining continence. On CT scans, its integrity and thickness can be evaluated to diagnose pelvic floor disorders.

Can CT scans differentiate between different pelvic muscles?

Yes, CT scans can differentiate pelvic muscles based on their anatomical location, shape, and density, allowing radiologists to identify individual muscles such as the obturator internus, piriformis, and levator ani muscles.

What abnormalities in pelvic muscles can be detected using CT imaging?

CT imaging can detect abnormalities such as muscle atrophy, hypertrophy, tears, hematomas, abscesses, tumors, and inflammation within the pelvic muscles.

How does CT compare to MRI for imaging pelvic muscle anatomy?

While CT provides excellent bone and muscle detail quickly and is widely available, MRI offers superior soft tissue contrast and is more sensitive in evaluating muscle edema, fibrosis, and subtle soft tissue abnormalities.

What role do the obturator internus muscles play in pelvic anatomy as seen on CT?

The obturator internus muscles form part of the lateral pelvic wall and are important for hip rotation. On CT, they appear as paired muscles lateral to the pelvic organs and can be assessed for size and pathology.

How can CT pelvic muscle anatomy assist in surgical planning?

Detailed CT images of pelvic muscle anatomy help surgeons understand the spatial relationships and condition of muscles, aiding in planning surgeries such as pelvic tumor resections, reconstructive procedures, or pelvic floor repairs.

Additional Resources

CT Pelvic Muscle Anatomy: A Detailed Professional Review

ct pelvic muscle anatomy represents a critical area of study within medical imaging and anatomical research, particularly for clinicians and radiologists aiming to understand the complex

musculature of the pelvic region. The use of computed tomography (CT) in visualizing pelvic muscle anatomy has significantly advanced the diagnostic capabilities in both trauma assessment and disease evaluation, offering a detailed cross-sectional view of muscle structures that are otherwise challenging to discern.

This article delves into the intricacies of CT pelvic muscle anatomy, exploring the key muscle groups identifiable via CT imaging, their anatomical relationships, and the clinical relevance of these insights. By integrating contemporary imaging techniques with foundational anatomical knowledge, healthcare professionals can optimize their diagnostic and therapeutic approaches to pelvic pathologies.

Understanding CT Pelvic Muscle Anatomy

CT imaging provides an unparalleled window into the internal architecture of the pelvic region. Unlike MRI, which excels in soft tissue contrast, CT offers rapid acquisition and excellent spatial resolution, making it invaluable in emergency settings. The evaluation of pelvic muscles through CT necessitates a comprehensive understanding of the regional anatomy, as the musculature is intertwined with vital neurovascular bundles and bony landmarks.

The pelvic muscles can be broadly categorized into three layers: superficial, intermediate, and deep. Each layer contributes to pelvic stability, movement, and support of pelvic organs. CT scans capture these muscles in axial, coronal, and sagittal planes, enabling a three-dimensional assessment critical for identifying abnormalities such as muscle tears, atrophy, or pathological masses.

Major Muscle Groups Visualized in CT Pelvic Anatomy

Several muscles constitute the pelvic wall and floor, each with distinct functions and radiological appearances on CT:

- **Iliopsoas Muscle:** Comprising the psoas major and iliacus muscles, the iliopsoas is a key flexor of the hip. On CT, it appears as a bulky, well-defined muscle running anterior to the pelvis, adjacent to the lumbar vertebrae and iliac fossa.
- **Obturator Internus:** Located laterally, this muscle contributes to lateral rotation of the thigh. CT imaging reveals its curved shape lining the inner surface of the obturator foramen.
- **Gluteal Muscles:** Including the gluteus maximus, medius, and minimus, these muscles form the posterior pelvic wall and are critical for hip movement. Their size and density variations are clearly discernible on CT slices.
- **Levator Ani Complex:** Comprising the pubococcygeus, puborectalis, and iliococcygeus muscles, this group forms the pelvic floor. CT visualization is challenging due to their thinness, but with optimal windowing, their contours can be assessed.
- **Coccygeus Muscle:** Positioned posteriorly in the pelvic floor, this muscle supports the pelvic viscera and is identifiable on high-resolution CT scans.

CT Imaging Characteristics of Pelvic Muscles

On CT scans, pelvic muscles typically display a uniform soft-tissue attenuation, slightly higher than fat but lower than bone. The presence of surrounding fat planes aids in defining muscle borders. Contrast-enhanced CT can further delineate muscle tissue by highlighting vascular supply and inflammatory changes.

Pathological alterations often manifest as changes in muscle size, density, or contour. For instance, muscle atrophy appears as decreased bulk with increased fatty infiltration, while edema or inflammation can produce areas of low attenuation or enhancement post-contrast administration. These subtle changes underscore the importance of detailed knowledge of normal CT pelvic muscle anatomy for accurate interpretation.

Clinical Applications and Implications

Trauma and Muscle Injury Assessment

Pelvic fractures and blunt trauma frequently involve associated muscle injuries. CT imaging is often the first-line modality to evaluate these cases due to its speed and availability. Recognizing normal muscle anatomy and variants allows radiologists to identify muscle hematomas, lacerations, or herniations that may complicate pelvic injuries.

Pelvic Floor Dysfunction and Surgical Planning

Pelvic floor muscles play a pivotal role in continence and support of pelvic organs. CT pelvic muscle anatomy aids in preoperative planning for pelvic reconstructive surgeries, especially when MRI is contraindicated or unavailable. CT can assess the integrity and symmetry of the levator ani muscles, contributing to decisions regarding surgical interventions for prolapse or incontinence.

Oncological Imaging

Certain pelvic malignancies, such as sarcomas or metastatic disease, can originate from or invade pelvic muscles. CT scans provide critical information about tumor size, extent, and involvement of adjacent muscular structures. Differentiating between tumor infiltration and muscle displacement is imperative for staging and treatment planning.

Comparative Imaging: CT vs MRI for Pelvic Muscles

While MRI is often considered the gold standard for soft tissue evaluation due to superior contrast resolution, CT remains indispensable in specific contexts. Its advantages include:

- Faster imaging times suitable for unstable patients
- Better visualization of calcifications and bone involvement
- Widespread availability and lower cost

However, CT’s limitations include lower soft tissue contrast and exposure to ionizing radiation. The choice between CT and MRI should be guided by clinical indications, patient factors, and diagnostic requirements.

Advances in CT Pelvic Muscle Anatomy Visualization

Recent technological improvements in CT imaging, such as multi-detector CT (MDCT) and advanced reconstruction algorithms, have enhanced the visualization of small pelvic muscles and subtle anatomical details. Three-dimensional reconstructions and volume rendering techniques enable surgeons and radiologists to appreciate complex spatial relationships, improving diagnostic accuracy and surgical outcomes.

Artificial intelligence (AI) and machine learning are emerging fields with potential applications in automated muscle segmentation and pathology detection on CT images. Such advancements promise to reduce interpretation times and standardize assessments of pelvic musculature.

Challenges in Interpreting Pelvic Muscle Anatomy on CT

Despite technological progress, several challenges persist:

- **Muscle Overlap and Similar Densities:** Adjacent muscles often share similar attenuation values, complicating differentiation on axial images.
- **Patient Variability:** Age-related atrophy, obesity, and prior surgeries can alter muscle appearance, requiring careful contextual analysis.
- **Artifact Interference:** Metal implants or motion artifacts may obscure muscle details.

Addressing these challenges requires a combination of technical expertise, anatomical knowledge, and, when necessary, correlation with other imaging modalities.

Understanding the nuances of CT pelvic muscle anatomy remains a cornerstone for accurate imaging interpretation and clinical decision-making. As imaging technology continues to evolve, so too will the capacity to visualize and analyze the complex musculature of the pelvis, ultimately enhancing patient care across multiple medical disciplines.

Ct Pelvic Muscle Anatomy

ct pelvic muscle anatomy: Applied Radiological Anatomy Paul Butler, 1999-10-14 This thoroughly illustrated text will provide radiologists with a unique overview of normal anatomy as illustrated by the full range of modern radiological procedures. The theme throughout is not only to illustrate the appearance of normal anatomical features as visualized by radiology, but also to provide a comprehensive text that describes, explains, and evaluates the most current imaging practice for all the body systems and organs. Where necessary, line drawings supplement the images, illustrating essential anatomical features. The wealth of high-quality images fully supported by an authoritative text will give all radiologists an insight into normal anatomy--a vital prerequisite for interpreting abnormal radiological images. The volume is designed to be accessible to medical students, but will also prove to be a valuable resource for radiologists.

ct pelvic muscle anatomy: Netter's Concise Radiologic Anatomy Updated Edition E-Book Edward C. Weber, Joel A. Vilensky, Stephen W. Carmichael, 2018-02-22 Designed to make learning more interesting and clinically meaningful, Netter's Concise Radiologic Anatomy matches radiologic images—from MR and ultrasound to CT and advanced imaging reconstructions—to the exquisite artwork of master medical illustrator Frank H. Netter, MD. As a companion to the bestselling Netter's Atlas of Human Anatomy, this updated medical textbook begins with the anatomy and matches radiologic images to the anatomic images; the result is a concise, visual guide that shows how advanced diagnostic imaging is an amazing dissection tool for viewing human anatomy in the living patient! - View direct, at-a-glance comparisons between idealized anatomic illustrations and real-life medicine with side-by-side radiology examples of normal anatomy and common variants with corresponding anatomy illustrations. - Improve upon your knowledge with a brief background in basic radiology, including reconstructions and a list of common abbreviations for the images presented. - Broaden your visual comprehension with the help of 30 brand-new ultrasound images. - NEW to this UPDATED EDITION: Cross-referenced to the 7th Edition Netter/Atlas of Human Anatomy

ct pelvic muscle anatomy: Computed Tomography & Magnetic Resonance Imaging Of The Whole Body E-Book John R. Haaga, Daniel Boll, 2016-06-06 Now more streamlined and focused than ever before, the 6th edition of CT and MRI of the Whole Body is a definitive reference that provides you with an enhanced understanding of advances in CT and MR imaging, delivered by a new team of international associate editors. Perfect for radiologists who need a comprehensive reference while working on difficult cases, it presents a complete yet concise overview of imaging applications, findings, and interpretation in every anatomic area. The new edition of this classic reference — released in its 40th year in print — is a must-have resource, now brought fully up to date for today's radiology practice. - Includes both MR and CT imaging applications, allowing you to view correlated images for all areas of the body. - Coverage of interventional procedures helps you apply

image-guided techniques. - Includes clinical manifestations of each disease with cancer staging integrated throughout. - Expert Consult eBook version included with purchase. This enhanced eBook experience allows you to search all of the text, figures, images, and references from the book on a variety of devices. - Over 5,200 high quality CT, MR, and hybrid technology images in one definitive reference. - For the radiologist who needs information on the latest cutting-edge techniques in rapidly changing imaging technologies, such as CT, MRI, and PET/CT, and for the resident who needs a comprehensive resource that gives a broad overview of CT and MRI capabilities. - Brand-new team of new international associate editors provides a unique global perspective on the use of CT and MRI across the world. - Completely revised in a new, more succinct presentation without redundancies for faster access to critical content. - Vastly expanded section on new MRI and CT technology keeps you current with continuously evolving innovations.

ct pelvic muscle anatomy: *Atlas of Imaging Anatomy* Lucio Olivetti, 2014-12-19 This book is designed to meet the needs of radiologists and radiographers by clearly depicting the anatomy that is generally visible on imaging studies. It presents the normal appearances on the most frequently used imaging techniques, including conventional radiology, ultrasound, computed tomography, and magnetic resonance imaging. Similarly, all relevant body regions are covered: brain, spine, head and neck, chest, mediastinum and heart, abdomen, gastrointestinal tract, liver, biliary tract, pancreas, urinary tract, and musculoskeletal system. The text accompanying the images describes the normal anatomy in a straightforward way and provides the medical information required in order to understand why we see what we see on diagnostic images. Helpful correlative anatomic illustrations in color have been created by a team of medical illustrators to further facilitate understanding.

ct pelvic muscle anatomy: Anatomy for Diagnostic Imaging E-Book Stephanie Ryan, Michelle McNicholas, Stephen J. Eustace, 2011-12-02 This book covers the normal anatomy of the human body as seen in the entire gamut of medical imaging. It does so by an initial traditional anatomical description of each organ or system followed by the radiological anatomy of that part of the body using all the relevant imaging modalities. The third edition addresses the anatomy of new imaging techniques including three-dimensional CT, cardiac CT, and CT and MR angiography as well as the anatomy of therapeutic interventional radiological techniques guided by fluoroscopy, ultrasound, CT and MR. The text has been completely revised and over 140 new images, including some in colour, have been added. A series of 'imaging pearls' have been included with most sections to emphasise clinically and radiologically important points. The book is primarily aimed at those training in radiology and preparing for the FRCR examinations, but will be of use to all radiologists and radiographers both in training and in practice, and to medical students, physicians and surgeons and all who use imaging as a vital part of patient care. The third edition brings the basics of radiological anatomy to a new generation of radiologists in an ever-changing world of imaging. This book covers the normal anatomy of the human body as seen in the entire gamut of medical imaging. It does so by an initial traditional anatomical description of each organ or system followed by the radiological anatomy of that part of the body using all the relevant imaging modalities. The third edition addresses the anatomy of new imaging techniques including three-dimensional CT, cardiac CT, and CT and MR angiography as well as the anatomy of therapeutic interventional radiological techniques guided by fluoroscopy, ultrasound, CT and MR. The text has been completely revised and over 140 new images, including some in colour, have been added. A series of 'imaging pearls' have been included with most sections to emphasise clinically and radiologically important points. The book is primarily aimed at those training in radiology, but will be of use to all radiologists and radiographers both in training and in practice, and to medical students, physicians and surgeons and all who use imaging as a vital part of patient care. The third edition brings the basics of radiological anatomy to a new generation of radiologists in an ever-changing world of imaging. - Anatomy of new radiological techniques and anatomy relevant to new staging or treatment regimens is emphasised. - 'Imaging Pearls' that emphasise clinically and radiologically important points have been added throughout. - The text has been revised to reflect advances in imaging since previous edition. - Over 100 additional images have been added.

ct pelvic muscle anatomy: Sectional Anatomy for Imaging Professionals - E-Book Lorrie L. Kelley, Connie Petersen, 2018-01-18 - NEW! Updated content reflects the latest ARRT and ASRT curriculum guidelines. - NEW! Additional lymphatic system images give readers a better picture of this nuanced body system. - NEW! Additional pathology boxes help readers connect commonly encountered pathologies to related anatomy for greater diagnostic accuracy. - NEW! Updated line art familiarizes readers with the latest 3D and vascular imaging technology. - NEW! 2-color design makes difficult content easier to digest.

ct pelvic muscle anatomy: Gross Anatomy Kyung Won Chung, 2005 Now in its updated Fifth Edition, BRS Gross Anatomy is the first of the books in the Board Review Series to assume a primary role as a course review and textbook for medical students in first-year anatomy courses. Written in a concise, bulleted outline format, this well-illustrated text offers 500 USMLE-style review questions, answers, and explanations and features comprehensive content and upgraded USMLE Step 1 information.

ct pelvic muscle anatomy: Fundamentals of Diagnostic Radiology William E. Brant, Clyde A. Helms, 2007 This latest edition is a comprehensive review of radiology that can be used as a first reader by beginning residents, referred to during rotations, and used to study for the American Board of Radiology exams. It covers all ten subspecialties of radiology and includes more than 2,700 illustrations.

ct pelvic muscle anatomy: *The Sectional Anatomy Learning System - E-Book* Edith Applegate, 2009-02-25 Designed to provide a thorough understanding of sectional anatomy, this unique, two-volume set is a complete, easy-to-use learning package. Volume 1, “Concepts, presents detailed, readable descriptions of sectional anatomy of the entire body broken down into body systems. It focuses on how different structures within a system are related, so you can form a clear picture of how everything fits together. The text is highlighted with many new labeled diagnostic images, including radiographs, CT, MR, and sonograms. Volume 2, “Applications, is an interactive workbook with coloring, labeling, and other exercises designed to help you identify the structures most commonly encountered in various imaging techniques. Helpful features include: chapter outlines, chapter objectives, pathology boxes, summary tables of anatomical information, review questions, chapter quizzes, and a glossary. Interactive exercises include labeling, anatomical coloring, short answer questions, and “Chapter Recall tests. Many more labeled, high-quality images, including MRI, CT and sonography help you learn anatomy using real-life images you’ll see in clinics and in practice. Quick Check Questions test your understanding of the material as you progress through the chapters. Important Anatomical Relationships section describes relationships between anatomical structures and refers you to relevant images. Working with Images sections in each body system chapter provide additional discussion and diagnostic images, helping you learn to identify anatomical structures with a variety of imaging modalities. List of Key Terms at the beginning of each chapter alert you to the terms you need to watch for before you read. More exercises with diagnostic images in the Applications volume, giving additional opportunities to identify and label anatomic structures on actual images. Answers to all Quick Check questions are given in the back of the book, allowing for immediate feedback; answers to the other questions and exercises are available online on Evolve. Evolve Online Resources contains images of cadaver sections, allowing you to see anatomy related to the line drawings in the book.

ct pelvic muscle anatomy: Computational Modeling and Simulation of Quadrupedal Animal Movement Gina Bertocci, John R. Hutchinson, Denis J. Marcellin-Little, Marcus G. Pandy, 2022-08-17

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disorders often affect women's daily life activities, their sexual function, their ability to exercise, and their social and psychological life. Pelvic floor disorders are usually diagnosed clinically, but in complicated cases, pelvic imaging and electromyographic studies may be required. This book attempts to discuss the pathophysiology of pelvic floor disorders, its treatment by the use of a new synthetic material, and treatment for recurrent POP. Although there are many books available on this topic, it includes some of the original research work and surgical innovation. We would like to acknowledge all the authors for their hard work in completing this book.

ct pelvic muscle anatomy: Diagnostic Imaging: Gynecology - E-Book Akram M. Shaaban, Douglas Rogers, 2021-11-14 Covering the entire spectrum of this fast-changing field, Diagnostic Imaging: Gynecology, third edition, is an invaluable resource for general radiologists, specialized radiologists, gynecologists, and trainees—anyone who requires an easily accessible, highly visual reference on today's gynecologic imaging. Drs. Akram Shaaban, Douglas Rogers, Jeffrey Olpin, and their team of highly regarded experts provide up-to-date information on recent advances in technology and the understanding of pathologic entities to help you make informed decisions at the point of care. The text is lavishly illustrated, delineated, and referenced, making it a useful learning tool as well as a handy reference for daily practice. - Serves as a one-stop resource for key concepts and information on gynecologic imaging, including a wealth of new material and content updates throughout - Features more than 2,500 illustrations that illustrate the correlation between ultrasound (including 3D), sonohysterography, hysterosalpingography, MR, PET/CT, and gross pathology images, plus an additional 1,000 digital images online - Features updates from cover to cover on uterine fibroids, endometriosis, and ovarian cysts/tumors; rare diagnoses; and a completely rewritten section on the pelvic floor - Reflects updates to new TNM and WHO classifications, Federation of Gynecology and Obstetrics (FIGO) staging, and American Joint Committee on Cancer (AJCC) TMM staging and prognostic groups - Begins each section with a review of normal anatomy and variants featuring extensive full-color illustrations - Uses bulleted, succinct text and highly templated chapters for quick comprehension of essential information at the point of care

ct pelvic muscle anatomy: *Imaging of Urogenital Diseases* Lucio Olivetti, Luigi Grazioli, 2010-08-16 Nowadays, there is tremendous interest in an integrated imaging approach to urogenital diseases. This interest is tightly linked to the recent technological advances in ultrasound, computed tomography, magnetic resonance imaging, and nuclear medicine. Significant improvements in image quality have brought numerous clinical and diagnostic benefits to every medical specialty. This book is organized in nine parts and twenty-seven chapters. The first six chapters review the normal macroscopic and radiological anatomy of the urogenital system. In subsequent chapters, urogenital malformations, lithiasis, as well as infectious and neoplastic disorders of the kidneys, bladder, urinary collecting system, and male and female genitalia are extensively discussed. The pathologic, clinical, and diagnostic (instrumental and not) features of each disease are described, with particular emphasis, in neoplastic pathologies, on primitive tumors and disease relapse. The statics and dynamics of the pelvic floor are addressed as well and there is a detailed presentation of state-of-the-art interventional radiology. The volume stands out in the panorama of the current medical literature by its rich iconography. Over 1000 anatomical illustrations and images, with detailed captions, provide ample evidence of how imaging can guide the therapeutic decision-making process. Imaging of Urogenital Diseases is an up-to-date text for radiologists, urologists, gynecologists, and oncologists, but it also certainly provides an invaluable tool for general practitioners. Its succinct, well-reasoned approach integrates old and new knowledge to obtain diagnostic algorithms. This information will direct the clinician to the imaging modality best-suited to yielding the correct diagnosis.

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ct pelvic muscle anatomy: *Merrill's Atlas of Radiographic Positioning and Procedures* Bruce W. Long, Jeannean Hall Rollins, Barbara J. Smith, 2015-02-25 More than 400 projections make it easier to learn anatomy, properly position the patient, set exposures, and take high-quality

radiographs! With Merrill's Atlas of Radiographic Positioning & Procedures, 13th Edition, you will develop the skills to produce clear radiographic images to help physicians make accurate diagnoses. It separates anatomy and positioning information by bone groups or organ systems - using full-color illustrations to show anatomical anatomy, and CT scans and MRI images to help you learn cross-section anatomy. Written by radiologic imaging experts Bruce Long, Jeannean Hall Rollins, and Barbara Smith, Merrill's Atlas is not just the gold standard in radiographic positioning references, and the most widely used, but also an excellent review in preparing for ARRT and certification exams! UNIQUE! Collimation sizes and other key information are provided for each relevant projection. Comprehensive, full-color coverage of anatomy and positioning makes Merrill's Atlas the most in-depth text and reference available for radiography students and practitioners. Coverage of common and unique positioning procedures includes special chapters on trauma, surgical radiography, geriatrics/pediatrics, and bone densitometry, to help prepare you for the full scope of situations you will encounter. Numerous CT and MRI images enhance your comprehension of cross-sectional anatomy and help you prepare for the Registry examination. Bulleted lists provide clear instructions on how to correctly position the patient and body part when performing procedures. Summary tables provide quick access to projection overviews, guides to anatomy, pathology tables for bone groups and body systems, and exposure technique charts. Frequently performed projections are identified with a special icon to help you focus on what you need to know as an entry-level radiographer. NEW! Coverage of the latest advances in digital imaging also includes more digital radiographs with greater contrast resolution of pertinent anatomy. NEW positioning photos show current digital imaging equipment and technology. UPDATED coverage addresses contrast arthrography procedures, trauma radiography practices, plus current patient preparation, contrast media used, and the influence of digital technologies. UPDATED Pediatric Imaging chapter addresses care for the patient with autism, strategies for visit preparation, appropriate communication, and environmental considerations. UPDATED Mammography chapter reflects the evolution to digital mammography, as well as innovations in breast biopsy procedures. UPDATED Geriatric Radiography chapter describes how to care for the patient with Alzheimer's Disease and other related conditions.

ct pelvic muscle anatomy: Principles and Practice of Gynecologic Oncology Richard Barakat, Andrew Berchuck, Maurie Markman, Marcus E. Randall, 2013-05-08 Today, multidisciplinary approaches to treatment are at the heart of cancer care. They offer improved clinical outcomes, new possibilities in patient quality of life, and enable the development of true innovation in individualized treatment. To accurately reflect this modern day approach to cancer care, the content of the 6th edition of Principles and Practice of Gynecologic Oncology was written entirely by surgeons, medical oncologists, radiation oncologists, and pathologists. New to the editorial team, Dr. Andrew Berchuck has made significant contributions to the understanding of the molecular pathogenesis of ovarian and endometrial cancer in the book’s content. Every chapter of this book has been either completely rewritten or extensively updated to ensure that everyone involved in treating women with gynecologic cancer will have the most comprehensive and up-to-date information on the subject.

ct pelvic muscle anatomy: Multidisciplinary Computational Anatomy Makoto Hashizume, 2021-11-30 This volume thoroughly describes the fundamentals of a new multidisciplinary field of study that aims to deepen our understanding of the human body by combining medical image processing, mathematical analysis, and artificial intelligence. Multidisciplinary Computational Anatomy (MCA) offers an advanced diagnosis and therapeutic navigation system to help detect or predict human health problems from the micro-level to macro-level using a four-dimensional, dynamic approach to human anatomy: space, time, function, and pathology. Applying this dynamic and “living” approach in the clinical setting will promote better planning for – and more accurate, effective, and safe implementation of – medical management. Multidisciplinary Computational Anatomy will appeal not only to clinicians but also to a wide readership in various scientific fields such as basic science, engineering, image processing, and biomedical engineering. All chapters were

written by respected specialists and feature abundant color illustrations. Moreover, the findings presented here share new insights into unresolved issues in the diagnosis and treatment of disease, and into the healthy human body.

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ct pelvic muscle anatomy: Topics in Colorectal Surgery Prof. P. Sivalingam, 2023-11-28 Colorectal Surgery has gained significant recognition in Western countries and is steadily advancing in India. The book Topics in Colorectal Surgery, published in 2010, marks a pioneering effort in India. Its second edition now boasts updates across all 38 topics and the addition of new chapters covering Diverticulosis, Appendix-related issues, Anal Intraepithelial Neoplasia, Anal lesions in HIV patients, Colonic ischemia, and Anal condylomata. Notably, it has incorporated discussions on Clostridium difficile colitis within the context of ulcerative colitis and has embraced the concept of Enhanced Recovery After Surgery (ERAS) in addressing carcinoma of the colon. Anticipating the growth of the field, the National Medical Council is on the verge of introducing a Mch or Fellowship program in colorectal surgery. As a result, this comprehensive book on various aspects of Colorectal Surgery is a valuable resource tailored to cater to the needs of postgraduates in Surgery, medical college educators, surgeons with an interest in colorectal surgery, and students preparing for the NEET examination.

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