

2013 RSNA (Filtered Schedule)

Saturday, November 30, 2013

12:00-02:00 PM • [SPPH01](#) • Room: E351 • AAPM/RSNA Physics Tutorial for Residents: Control of Dose in Computed Tomography
01:00-05:00 PM • [SPGW01](#) • Room: E253AB • NIH Grantsmanship Workshop
01:00-05:00 PM • [SPRW01](#) • Room: E253CD • RSNA/ARR Study Section Reviewers Workshop What It Takes to Be an Expert Reviewer for the NIH: The Peer Review ...
01:00-05:00 PM • [SPSP01](#) • Room: E451A • Radiologia de la Infeccion e Inflamacion: Sesión del Colegio Interamericano de Radiologia (CIR) en Espa...
02:15-04:15 PM • [SPPH02](#) • Room: E351 • AAPM/RSNA Tutorial on Equipment Selection: Imaging Systems Designed to Reduce CT Dose and Maintain Image Quali...

AAPM/RSNA Physics Tutorial for Residents: Control of Dose in Computed Tomography

Saturday, 12:00 PM - 02:00 PM • E351

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SPPH01 • AMA PRA Category 1 Credit™:2 • ARRT Category A+ Credit:2

Moderator

Richard J Massoth, PhD

LEARNING OBJECTIVES

1) To describe the underlying physics of CT Dose and the technical factors which affect patient dose. 2) To understand different approaches to image reconstruction and their contribution to patient dose reduction. 3) How to develop and review low dose protocols for CT.

SPPH01A • Factors that Affect CT Dose and Dosimetry Methods

Jerry A Thomas MS (Presenter) *

SPPH01B • Image Reconstruction Techniques which Contribute to Patient Dose Reduction

Richard J Massoth PhD (Presenter)

SPPH01C • Low Dose Protocols - Source and Review Methodology

Jerry A Thomas MS (Presenter) *

NIH Grantsmanship Workshop

Saturday, 01:00 PM - 05:00 PM • E253AB

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SPGW01 • AMA PRA Category 1 Credit™:3.75 • ARRT Category A+ Credit:4

Moderator

Gayle E Woloschak, PhD

LEARNING OBJECTIVES

1) Gain greater understanding of the NIH grants process: a. understand the process for preparing a research or training grant application. b. learn the elements of a competitive grant application. 2) Gain insight into the new features of the NIH review process. 3) View the review process in action through a mock study section.

SPGW01A • Welcome and Introductory Remarks

Gayle E Woloschak PhD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01B • Preparing an R01 Research Application

Pratik Mukherjee MD, PhD (Presenter) *

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01C • Preparing K Awards

Ruth C Carlos MD, MS (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01D • Clinical Trials in Applications

Michael W Vannier MD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01E • Program Perspectives

Belinda Seto PhD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01F • The Process of Review

Gayle E Woloschak PhD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01G • Mock Study Section

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01H • Questions to the Faculty

Gayle E Woloschak PhD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPGW01I • Summary and Evaluation Form

Gayle E Woloschak PhD (Presenter)

LEARNING OBJECTIVES

View learning objectives under main course title.

RSNA/ARR Study Section Reviewers Workshop What It Takes to Be an Expert Reviewer for the NIH: The Peer Review Process Demystified

Saturday, 01:00 PM - 05:00 PM • E253CD

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RS

SPRW01 • AMA PRA Category 1 Credit™:3.75 • ARRT Category A+ Credit:4

Moderator/Presenter

Elizabeth A Krupinski, PhD

Moderator/Presenter

Carolyn C Meltzer, MD *

Presenter

Kathryn A Morton, MD

LEARNING OBJECTIVES

1) Identify the different grant mechanisms available within the NIH and the requirements for submitting to a particular mechanism. 2) List the criteria used in the evaluation of NIH grants and what happens prior to and during a study section review meeting. 3) Articulate the benefits of being a reviewer for the NIH and the different ways that one can be a reviewer.

4) Observe a mock study section presented by the NIH with experienced reviewers evaluating at least two grant mechanisms.

ABSTRACT

This workshop designed to provide information to radiologists and imaging scientists interested in serving as expert peer reviewers on NIH and other grant study sections. Although a significant amount of information is available on how the review process works, many investigators (new and experienced) have questions that are best answered in person by those who have first-hand experience. Attendees will be provided with a clearer understanding of the review process, enabling them to be better prepared to serve as reviewers on NIH Study Sections or other grant-review panels.

SPRW01A • Welcome and Introductory Remarks

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01B • The New Peer Review Process: Changes, Challenges, and Opportunities

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01C • Review Criteria: Varying Emphasis by Grant Mechanism

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01D • Getting on a Study Section: How, Why, and Which One?

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01E • Panel Discussion/QandA

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01F • Reviewing for Other Organizations

SPRW01G • Mock Study Section (Joint Session with NIH Grantsmanship Workshop Faculty)

LEARNING OBJECTIVES

View learning objectives under main course title.

SPRW01H • Closing Comments

Radiología de la Infección e Inflamación: Sesión del Colegio Interamericano de Radiología (CIR) en Español/Imaging of Infection and Inflammation: Session of the Interamerican College of Radiology (CIR) in Spanish

Saturday, 01:00 PM - 05:00 PM • E451A

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SPSP01 • AMA PRA Category 1 Credit™:3.75 • ARRT Category A+ Credit:4

Chairman
Gloria Soto Giordani, MD
Moderator
Pablo R Ros, MD, PhD *
Moderator
Miguel E Stoopan, MD *

LEARNING OBJECTIVES

1) Revisar los principales hallazgos radiológicos de los procesos infecciosos e inflamatorios por órganos y sistemas. 2) Entender el papel de las diferentes modalidades de imagen en infección e inflamación. 3) Entender la utilización adecuada del diagnóstico por imágenes en procesos infecciosos e inflamatorios. 1) Review the main infectious and inflammatory conditions in multiple organ systems. 2) Review key imaging findings in the main infectious and inflammatory processes. 3) Understand the role of different imaging modalities in infection and inflammation. 4) Understand the appropriate utilization of imaging in infection and inflammation.

ABSTRACT
URL

SPSP01A • Introducción/Opening Remarks

Gloria Soto Giordani MD (Presenter)

SPSP01B • Primera Parte: Radiología de la Infección e Inflamación/Part I: Imaging of Infection and Inflammation

Pablo R Ros MD, PhD (Presenter) *

LEARNING OBJECTIVES

View learning objectives under the main title.

SPSP01C • Sistema Nervioso Central: Claves en el Diagnóstico por la Imagen de la Tuberculosis Cerebral/Central Nervous System: Imaging Clues in Cerebral Tuberculosis

Salvador Pedraza MD, PhD (Presenter) *

LEARNING OBJECTIVES

1) Discutir las técnicas radiológicas y el algoritmo diagnóstico en la Tuberculosis cerebral. 2) Comentar los patrones típicos de presentación de la Tuberculosis cerebral. 3) Comentar las características atípicas que puede presentar la tuberculosis cerebral. 4) Importancia del Diagnóstico por la Imagen en el Tratamiento y Pronóstico del paciente con Tuberculosis cerebral. 1) Diagnostic algorithm of Cerebral Tuberculosis. 2) Typical imaging pattern of Cerebral Tuberculosis. 3) Atypical imaging signs of Cerebral Tuberculosis. 4) Utility of Imaging to guide the treatment and to predict clinical outcome of patients with Cerebral Tuberculosis.

ABSTRACT

URL

SPSP01D • Huesos y Articulaciones: Artritis Séptica y Osteomielitis/Bones and Joints: Septic Arthritis and Osteomyelitis

Sergio Fernandez-Tapia MD (Presenter)

LEARNING OBJECTIVES

View learning objectives under the main title.

ABSTRACT

Septic arthritis occurs by hematogenous route, by contiguity or by direct inoculation and may be pyogenic or non-pyogenic, more common in the appendicular skeleton in children and in the axial skeleton in adult. The most common causative agents are Staphylococcus aureus in the pyogenic and Mycobacterium tuberculosis in the non-pyogenic.

Diagnostic imaging of septic arthritis has little specific signs. In plain x-ray is seen increasing volume and density of soft tissues, with partial or total loss of the peri-articular fat lines, without bone alterations in the early stages mainly in children. In order to avoid irreversible damage of articular cartilage and joint is mandatory to perform a joint puncture to prepare smear and culture and therefore establish the diagnosis and early treatment. In the later stages as the plain x-ray imaging methods, US, CT, MRI, PET-CT and SPECT are of great value, alone or all together can establish the diagnosis.

Magnetic resonance imaging MRI is very sensitive but little specific.

In the appendicular skeleton more frequently in shoulder, knee or hip can increase joint fluid and synovitis or its complications such as osteomyelitis or abscesses, while in the axial skeleton infection manifests as spondylodiscitis, usually affecting only one intervertebral space and which can be extend to soft tissues or the spinal canal that becomes more evident with the application of gadolinium. These data establish diagnosis but the definitive settles with the smear, culture or biopsy.

In all cases should be establish the differential between pyogenic and TB diagnosis.

Osteomyelitis has three types of acute, subacute and chronic presentation. The infection reaches bone by hematogenous route, by contiguity or by direct inoculation. The most common causative agent both in children and in adults is Staphylococcus aureus followed from a huge list of pathogens including Mycobacterium tuberculosis, anaerobes, fungi, etc. It occurs at any age and risk factors are wounds in skin, exposed fractures, surgery, prosthesis, diabetes, immuno suppressed and others. Acute osteomyelitis has no manifestation on plain x-ray or in single CT bone scan and MRI can show it with high sensitivity but low specificity. The MRI shows edema in bone and soft tissue with greater intensity after the application of gadolinium-based contrast material, but only biopsy and culture give the definitive diagnosis. Subacute osteomyelitis is represented by the Brodie's abscess which is located in the epiphysis or the metaphysis owing to vascular pattern in children in those places, while in adults the location is metadiaphysaria, its etiology is usually pyogenic but it could also be tuberculous. As seen in the plain x-ray as geographical with sclerosus edge, thickness and radiopaque, with similar image in the TAC, but MRI is more sensitive and with the application of gadolinium-based contrast material sensitivity and specificity increase giving reliability to the diagnosis.

Chronic osteomyelitis is composed of the involucrum, sequestra and fistulous tract, demonstrated altogether by plain x-ray, CT and MRI that together with the application of gadolinium-based contrast material can demonstrate the features of each of them as well as its complications like an abscesses, which can be supported with methods such as SPECT or PET-CT in cases of doubt. If the diagnosis and treatment of osteomyelitis is set properly, the result can be the cure.

Diabetic foot deserves a special mention in the chapter of infection since we need to know it deeply to help establish the presence of infectious process in the best way. Because the neuroarthropathy, peripheral arterial disease and the increased sensitivity to infection,

diabetic patients exposed to skin lesions in the sole of the foot, support sites such as the head of the first and fifth metatarsal and heel, with high risk of developing ulcers, which are ports of entry of the different microorganisms that can develop cellulitis, septic arthritis and osteomyelitis. Plain x-ray, CT, MRI, PET-CT and SPECT alone, combined or all together provide valuable data to establish the diagnosis although as in all infectious processes, smear, culture or biopsy establish the final diagnosis. La artritis séptica se produce por vía hematogena, por contigüidad o por inoculación directa y puede ser piógena o no piógena, más común en el esqueleto apendicular en niños y en el esqueleto axial en los adultos. Los agentes causales más comunes son el estafilococo dorado en las piógenas y el mycobacterium tuberculosis en las no piógenas. El diagnóstico por imagen de la artritis séptica tiene signos poco específicos. En la radiografía simple se ve aumento de volumen y densidad de los tejidos blandos, con pérdida parcial o total de las líneas grasas peri-articulares, sin alteraciones óseas en las etapas tempranas principalmente en niños. Si estos datos se suman a la realización de una punción para frotis y cultivo, se establece el diagnóstico definitivo y por tanto el tratamiento oportuno. En las etapas más tardías los métodos de imagen como la radiografía simple, el US, la TAC, la IRM, el PET-CT y el ESPECT son de gran valor ya que solos o en conjunto pueden orientar el diagnóstico.

La imagen por resonancia magnética IRM es muy sensible pero poco específica.

En el esqueleto apendicular con más frecuencia en hombro, rodilla o cadera puede demostrar derrame articular y datos de sinovitis o sus complicaciones como osteomielitis o abscesos, mientras que en el esqueleto axial la infección articular se manifiesta como espondilodiscitis, generalmente afectando sólo un espacio intervertebral y que se pueden extender a los tejidos blandos o al canal raquídeo que se hacen más evidentes con la aplicación de gadolinio. Estos datos orientan al diagnóstico pero el definitivo se establece con el cultivo, el frotis o la biopsia.

En todos los casos hay que establecer el diagnóstico diferencial entre piógena y tuberculosa. La osteomielitis tiene tres tipos de presentación, aguda, subaguda y crónica. La infección llega al hueso por vía hematogena, por contigüidad o por inoculación directa. El agente causal más común tanto en niños como en adultos es el estafilococo dorado seguido de una gran lista de agentes patógenos incluidos el mycobacterium tuberculosis, anaerobios, hongos etc. Se presenta a cualquier edad y son factores de riesgo heridas en piel, fracturas expuestas, cirugía, prótesis, diabéticos, inmuno suprimidos y otros.

La osteomielitis aguda no tiene manifestación ni en radiografía simple ni en TAC sólo la gammagrafía ósea y la IRM pueden demostrarla con alta sensibilidad pero poca especificidad. La IRM muestra edema óseo y de tejidos blandos con mayor intensidad después de la aplicación de gadolinio, pero sólo la biopsia y el cultivo dan el diagnóstico definitivo.

La osteomielitis subaguda esta representada por el absceso de Brodie que en los niños se localiza en la epífisis o en la metáfisis por el patrón vascular en esos sitios, mientras que en los adultos la localización es metadiáfisiaria, su etiología generalmente es piógena pero también puede ser tuberculosa. Se puede observar en la radiografía simple como imagen geográfica de borde escleroso grueso y radioopaco al igual que en la TAC, pero la IRM es más sensible y con la aplicación de gadolinio la sensibilidad y especificidad aumentan dando mayor confiabilidad al diagnóstico.

La osteomielitis crónica esta integrada por el involucro, el secuestro y la cloaca, demostrados en conjunto por la radiografía simple, la TAC y la IRM que junto con la aplicación del medio de contraste gadolinio permiten demostrar las características de cada uno de ellos así como sus complicaciones como los tractos fistulosos y los abscesos, que en casos de duda se pueden apoyar con métodos tales como el SPECT o el PET-CT.

Si el diagnóstico y tratamiento de la osteomielitis se establece oportunamente, el resultado puede ser la curación. El pie diabético merece una mención especial en el capítulo de infección ya que debemos conocerlo profundamente para ayudar a establecer de la mejor manera la presencia de proceso infeccioso. Debido a la neuroartropatía, a la enfermedad arterial periférica y a la mayor sensibilidad a la infección, el paciente diabético esta expuesto a lesiones de piel en la región plantar en los sitios de apoyo como son la cabeza del primer y quinto metatarsianos y el calcáneo, con alto riesgo de desarrollar úlceras, que son los puertos de entrada de los diferentes microorganismos que pueden desarrollar celulitis, artritis séptica y osteomielitis. La radiografía simple, la TAC, la IRM, el PET-CT y el SPECT solos, combinados o todos en conjunto aportan datos valiosos para establecer el diagnóstico aunque como en todos los procesos infecciosos, el frotis el cultivo y/o la biopsia son los que establecen el diagnóstico final.

URL

SPSP01E • Inflamación/Fibrosis Bronquiolar: Rol del Diagnostico por Imagen/Inflammation/Bronchial Fibrosis: The Role of Diagnostic Imaging

Santiago E Rossi MD (Presenter) *

LEARNING OBJECTIVES

1) Define terminology and classification of small airways disease / bronchiolitis. 2) Review common disease entities manifesting as bronchiolar disease. 3) Describe clinical and imaging clues helpful in narrowing the differential diagnosis.

SPSP01F • Radiología Pediátrica: Neumonías en Niños: Cuando la Radiografía de Tórax no es Suficiente/Pediatric Radiology: Pneumonia in Children: When Chest Radiography Isn't Enough

Pedro Daltro MD (Presenter)

LEARNING OBJECTIVES

1) Establecer cuando la radiografía de tórax es suficiente para el diagnóstico de la neumonía en niños. 2) Identificar los hallazgos radiológicos más frecuentes en las neumonías virales y bacterianas. 3) Cuando y cómo utilizar la ecografía como complemento de la neumonía en niños. 4) Cuando la TC de tórax es necesaria como complemento de la neumonía en los niños, haciendo hincapié en la necesidad de establecer criterios específicos para su indicación y el requisito de utilizar las técnicas con baja dosis de radiación. 1) To define when the chest radiograph is sufficient for diagnostic imaging of pneumonia in children. 2) To identify the most common radiological findings in viral and bacterial pneumonias. 3) When and how to use ultrasound as a complement to pneumonia in children. 4) When chest CT is needed as a complement to pneumonia in children, emphasizing the need to establish specific criteria for its nomination and the requirement to use techniques with low-dose radiation.

SPSP01G • Preguntas/Questions and Answers

SPSP01H • Segunda Parte: Radiología de la Infección e Inflamación/Part II: Imaging of Infection and Inflammation

Miguel E Stoopan MD (Presenter) *

LEARNING OBJECTIVES

View learning objectives under the main title.

SPSP01I • Visceras Huecas Abdominales: Enfermedad Inflamatoria Intestinal/Hollow Abdominal Viscera: Inflammatory Bowel Disease

Diego A Aguirre MD (Presenter)

LEARNING OBJECTIVES

View learning objectives under the main title.

SPSP01J • Visceras Sólidas Abdominales: Pancreatitis/Solid Abdominal Viscera: Pancreatitis

Douglas J Racy MD (Presenter)

LEARNING OBJECTIVES

1) Elucidate acute pancreatitis in its early phase and later phase, and the persistent organ failure that can accompany its occurrence. 2) Enumerate the various fluid collections encountered in acute pancreatitis as defined by the revised Atlanta classification. 3) Identify the two phases of acute pancreatitis, the parameters that determine care, and the treatment for an infected walled-off necrosis.

ABSTRACT

Imaging of acute pancreatitis requires not only an understanding of the disease subtypes and associated complications but also familiarity with the appropriate radiologic nomenclature as defined by the Atlanta symposium in 1992 and, more recently, by the Acute Pancreatitis Classification Working Group in 2008. The accurate description of the radiological findings plays a critical role in the evaluation and management of patients with acute pancreatitis, particularly those with severe disease. There have been increasing efforts to develop uniformity in the use of terminology used to define the radiologic findings in acute pancreatitis. Terms such as acute peripancreatic fluid collections, acute post-necrotic fluid collections, pseudocyst, and walled-off pancreatic necrosis are now recommended as they describe the evolution of fluid collections in patients with both interstitial and necrotizing pancreatitis and nonspecific terms such as pancreatic abscess and phlegmon are being abandoned. In this review we illustrate, with case examples, the standardized terminology used in the radiological and clinical description of acute pancreatitis, its severity, and complications with an emphasis on the role of computed tomography and magnetic resonance imaging. Different management options of the associated complications are also discussed. The use of standardized terminology will hopefully improve the communication between radiologists, gastroenterologists, and surgeons to facilitate treatment planning and will lead to enhanced outcomes for patients with acute pancreatitis as well as create uniformity for enrollment into research studies.

SPSP01K • Vias Urinarias: Pielonefritis y Absceso Renal/Urinary Tract: Pyelonephritis and Renal Abscess

Victor J Casillas MD (Presenter)

LEARNING OBJECTIVES

1) To describe the clinical presentation, etiology and radiographic imaging modalities to evaluate acute pyelonephritis and renal abscess. 2) To illustrate the imaging findings of these conditions. 3) To discuss the differential diagnosis and management. 1) Describir la presentacion clinica, la etiologia y las modalidades por imagenologia para la evaluacion de la pielonefritis aguda y absceso renal. 2) Presentar los hallazgos por imagenologia de estas condiciones. 3) Discutir el diagnostico diferencial y el manejo.

ABSTRACT

URL

SPSP01L • Pelvis Femenina y Masculina: Enfermedad Inflamatoria Pélvica/Female and Male Pelvis: Pelvic Inflammatory Disease

Pablo Soffia MD (Presenter)

LEARNING OBJECTIVES

1) Discuss the optimal CT techniques for evaluating patients with suspected PID. 2) Recognize the CT findings commonly seen in early and advanced PID. 3) Discuss common and uncommon causes of PID

ABSTRACT

Pelvic inflammatory disease (PID) represents inflammation of the upper genitalia and the adjacent pelvic region. The etiology is an infectious agent, but it is often never identified. Risk factors include young age, high frequency of partner change, lack of barrier contraception low socioeconomic group. The clinical presentation is pelvic pain, fever and leucocytosis. US is considered the initial imaging test of choice but CT is more accurate. The main findings in CT are: Small amount of fluid in the pelvis, fat stranding or increased attenuation of pelvic fat and pyosalpinx. Tuboovarian abscess appears as a complex fluid collection with thick enhancing walls, commonly bilateral. CT can be used as guidance for percutaneous drainage,.

SPSP01M • Preguntas/Questions and Answers

SPSP01N • Clausura/Closing Remarks

AAPM/RSNA Tutorial on Equipment Selection: Imaging Systems Designed to Reduce CT Dose and Maintain Image Quality

Saturday, 02:15 PM - 04:15 PM • E351



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SPPH02 • AMA PRA Category 1 Credit™:2 • ARRT Category A+ Credit:2

Moderator

Jerry A Thomas, MS *

LEARNING OBJECTIVES

1) To understand the differences in design and imaging reconstruction in commercial systems designed for CT imaging and aftermarket image post processing systems. 2) To appreciate the impact dose reduction techniques have on image quality and the clinical management of disease. 3) To develop a business model for incorporating dose reduction into CT imaging.

SPPH02A • Image Equipment Overview - CT Dose Reduction Techniques

Jerry A Thomas MS (Presenter) *

SPPH02B • Impact of Dose Reduction on Image Quality and Medical Diagnosis

Richard J Massoth PhD (Presenter)

SPPH02C • Building a Business Case for Dose Reduction Technologies in CT

Jerry A Thomas MS (Presenter) *

H

Heetderks, W. - Stockholder, General Electric Company Stockholder, Zimmer Holdings, Inc Stockholder, IBM Corporation Stockholder, The Procter & Gamble Company Stockholder, Bristol Myer-Squib

M

Meltzer, C. C. - Board of Directors, ACR Image Metrix
Mukherjee, P. - Research Grant, General Electric Company

P

Pedraza, S. - Research Consultant, H. Lundbeck A/S

R

Ros, P. R. - Radiology Advisory Committee, Koninklijke Philips Electronics NV Institutional research collaboration, Siemens AG Institutional research collaboration, Koninklijke Philips Electronics NV Institutional research collaboration, Toshiba Corporation Institutional research collaboration, Sectra AB
Rossi, S. E. - Advisory Board, Koninklijke Philips Electronics NV

S

Stoopen, M. E. - Equipment support, General Electric Company

T

Thomas, J. A. - Stockholder, General Electric Company Stockholder, Hologic, Inc Stockholder, Stryker Corporation Speaker, Medical Technology Management Institute Speaker, Cassling Speaker, Landauer Medical Physics