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October
State of the Art

Müllerian Duct Anomalies: Imaging and Clinical Issues[1]

While estimates of the frequency of müllerian duct anomalies vary widely owing to different patient populations, nonstandardized classification systems, and differences in diagnostic data acquisition, these anomalies are clinically important, particularly in women who present with infertility. An understanding of the differences between these uterovaginal anomalies, as outlined in the most widely accepted classification system —that published by the American Fertility Society (AFS) in 1988— is imperative given the respective clinical manifestations, different treatment regimens, and prognosis for fetal salvage. Although the AFS classification system serves as a framework for description of anomalies, communication among physicians, and comparison of therapeutic modalities, there often is confusion about appropriate reporting of certain anomalies, particularly those with features of more than one class. Many of the anomalies are initially diagnosed at hysterosalpingography and ultrasonography; however, further imaging is often required for definitive diagnosis and elaboration of secondary findings. At this time, magnetic resonance imaging is the study of choice because of its high accuracy and detailed elaboration of uterovaginal anatomy. Laparoscopy and hysteroscopy are reserved for women in whom interventional therapy is likely to be undertaken.

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November
Special Review

Cancer Risks among Radiologists and Radiologic Technologists: Review of Epidemiologic Studies[1]

Radiologists and radiologic technologists were among the earliest occupational

groups exposed to ionizing radiation and represent a large segment of the working population exposed to radiation from human-made sources. The authors reviewed epidemiologic data on cancer risks from eight cohorts of over 270 000 radiologists and technologists in various countries. The most consistent finding was increased mortality due to leukemia among early workers employed before 1950, when radiation exposures were high. This, to-

gether with an increasing risk of leukemia with increasing duration of work in the early years, provided evidence of an excess risk of leukemia associated with occupational radiation exposure in that period. While findings on several types of solid cancers were less consistent, several studies provided evidence of a radiation effect for breast cancer and skin cancer. To date, there is no clear evidence of an increased cancer risk in medical radiation workers exposed to current levels of radiation doses. However, given a relatively short period of time for which the most recent workers have been followed up and in view of the increasing uses of radiation in modern medical practices, it is important to continue to monitor the health status of medical radiation workers.

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December Review

Techniques and Applications of Automatic Tube Current Modulation for CT[1]

Introduction of slip-ring technology with subsequent development of single– and multi–detector row helical computed tomographic (CT) scanners have expanded the applications of CT, leading to a substantial increase in the number of CT examinations being performed. Owing to concerns about the resultant increase in associated radiation dose, many technical innovations have been introduced. One such innovation is automatic tube current modulation. The purpose of automatic tube current modulation is to maintain constant image quality regardless of patient attenuation characteristics, thus allowing radiation dose to patients to be reduced. This review discusses the principles, clinical use, and limitations of different automatic tube current modulation techniques.

(*De RadioGraphics y el Instituto de Patología de las Fuerzas Armadas).

*Resúmenes enviados y publicados con autorización de la RSNA.

RadioGraphics

From the Archives of the AFIP

Pilocytic Astrocytoma: Radiologic-Pathologic Correlation[1]

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Pilocytic astrocytoma is the most common pediatric central nervous system glial neoplasm and the most common pediatric cerebellar tumor. This tumor has a noteworthy benign biologic behavior that translates into an extremely high survival rate—94% at 10 years—that is by far the best of any glial tumor. Most patients present in the first 2 decades, and clinical symptoms and signs are usually of several months duration and directly related to the specific location of the tumor. The cerebellum, optic nerve and chiasm, and hypothalamic region are the most common locations, but the tumor can also be found in the cerebral hemisphere, ventricles, and spinal cord. Surgical resection is the treatment of choice for all tumors, except for those involving the optic pathway and hypothalamic region, which may be treated with radiation therapy and chemotherapy. Cross-sectional imaging often demonstrates a classic appearance: a cystic mass with an enhancing mural nodule. Less common appearances are quite nonspecific. Surrounding vasogenic edema is rarely present, and this feature provides a valuable clue to the correct diagnosis. Accurate interpretation of imaging studies plays an essential role in directing treatment of these tumors, particularly when they arise in the optic pathway of patients with neurofibromatosis type 1. Disseminated disease and recurrence are extremely rare.

http://radiographics.rsnajnls.org/cgi/content/full/24/6/1693

Radiographics November/December 2004

(*De RadioGraphics y el Instituto de Patología de las Fuerzas Armadas).

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RadioGraphics

From the Archives of the AFIP

Benign Musculoskeletal Lipomatous Lesions[1]

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Benign lipomatous lesions involving soft tissue are common musculoskeletal masses that are classified into nine distinct diagnoses: lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma or lipoblastomatosis, angiolipoma, myolipoma of soft tissue, chondroid lipoma, spindle cell lipoma and pleomorphic lipoma, and hibernoma. Soft-tissue lipoma accounts for almost 50% of all soft-tissue tumors. Radiologic evaluation is diagnostic in up to 71% of cases. These lesions are identical to subcutaneous fat on computed tomographic (CT) and magnetic resonance (MR) images and may contain thin septa. Lipomatosis represents a diffuse overgrowth of mature fat affecting either subcutaneous tissue, muscle or nerve, and imaging is needed to evaluate lesion extent. Lipoblastoma is a tumor of immature fat occurring in young children, and imaging features may reveal a mixture of fat and nonadipose tissue. Angiolipoma, myolipoma, and chondroid lipoma are rare lipomatous lesions that are infrequently imaged. Spindle cell and pleomorphic lipoma appear as a subcutaneous lipomatous mass in the posterior neck or shoulder, with frequent nonadipose components. Hibernoma appears as a lipomatous mass with serpentine vascular elements. Benign lipomatous lesions affecting bone, joint, or tendon sheath include intraosseous lipoma, parosteal lipoma, liposclerosing myxofibrous tumor, discrete lipoma of joint or tendon sheath, and lipoma arborescens. Intraosseous and parosteal lipoma have a pathognomonic CT or MR appearance, with fat in the marrow space or on the bone surface, respectively. Liposclerosing myxofibrous tumor is a rare intermixed histologic lesion commonly located in the medullary canal of the intertrochanteric femur. Benign lipomatous lesions may occur focally in a joint or tendon sheath or with diffuse villonodular proliferation in the synovium (lipoma arborescens) and are diagnosed based on location and identification of fat. Understanding the spectrum of appearances of the various benign musculoskeletal lipomatous lesions improves radiologic assessment and is vital for optimal patient management.

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Radiographics September/October 2004