

(31.6% exams ranking as BI-RADS II category and none as BI-RADS III category or higher). Findings revealed only by breast MRI were most commonly related to local fibrocystic changes or fibroadenomatoid mastopathy (FAM). A breast hamartoma (fibroadenolipoma) in one patient was also detected only by breast MRI. Breast MRI proved also useful in revealing implant ruptures in a higher number of patients compared to breast USG. Thus, extracapsular implant ruptures were revealed in 26.3% of patients by breast MRI versus only in 15.8% patients by breast USG. An intracapsular implant rupture in one patient could be also revealed only by breast MRI.

Conclusions. Breast MRI represents the modality of choice for evaluation of implant integrity and associated pathology in symptomatic patients. It can also provide additional information in patients with breast implants and persisting symptoms despite negative USG findings.

DIFFERENTIAL DIAGNOSTIC CRITERIA OF DIFFUSE PARENCHYMAL LUNG DISEASES BASED ON CASE STUDIES

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Introduction. Today diffuse parenchymal lung diseases refer to the list of some 200 entities which typically affect both lungs in an acute, subacute or chronic manner and overlap in their clinical, imaging, physiologic and pathologic manifestations. The most common causes of diffuse parenchymal lung diseases are occupational and environmental exposures, and other causes include granulomatous disorders, inhalational diseases, eosinophilic lung disease, various metabolic and miscellaneous disorders. Some of diffuse parenchymal lung diseases are of unknown etiology. The frequent asymptomatic early course of disease despite the presence of extensive parenchymal abnormalities on chest radiographs, or, on the contrary, the normal chest radiograph in 10% of affected patients; in other cases, the overlap of radiographic patterns require HRCT/CT analysis to narrow the list of differential diagnostic consideration and must be correlated with clinical and pathologic features to achieve a multidisciplinary assessment in evaluating the patients.

Aim. On the basis of the case studies to assess the X-ray film data and results of spiral computed tomography (SCT), to analyze them by comparing clinical and laboratory data and to form the differential diagnostic approach.

Materials and methods. Patient study: the clinical and imaging data of 56 patients at the age from 24 to 69 (39 men and 17 women) was analysed. All patients underwent chest radiograph without additional HRCT. In 46 cases HRCT was performed and in 14 patients the HRCT with contrast enhancement was performed. The imaging analysis included the following criteria:

1. The presence of diffuse parenchymal lung disease, anatomic distribution of imaging pattern and patterns' type.
2. Regional distribution of diffuse parenchymal lung disease.
3. The presence of fibrotic changes and destruction sites.
4. Dynamics of disseminated process in follow-up.

Results and discussions. In 30 cases the false diagnosis was established and non-effective therapy was conducted forcing to review differential diagnostic consideration. In three cases the non-specific treatment refuted the relapse of oncopathology. In 23 cases at the early diagnostic stage diagnosis was established immediately or over time based on histology.

The nodules localization, size, the dynamics of radiological patterns, the disease clinical manifestation, occupational history etc were assessed.

Acute hematogenous disseminated tuberculosis is characterized by randomly distributed uniform nodules bilaterally, symmetrically or diffuse combined with strongly pronounced clinical manifestation of inflammatory process.

Sarcoidosis is characterized by epithelioid granulomas which spread along the lymphatic routes in the early stages (along the bronchovascular bundles, in the interlobular septa and subpleural) and diffuse in the advanced stages; bilaterally, predominantly central, especially dorsal in upper lung regions.

The smooth, nodular or nodular reticular pattern of the interstitium is typical for carcinomatosis with central peribronchovascular, centrilobular, septal and/or subpleural localization and variable (monolateral, bilateral, patchy) distribution.

Langerhans' cell histiocytosis is characterized by high-density centrilobular nodules with well-defined margins and irregular borders; cavitation is common. The number of nodules may vary from very few to a multitude with bilateral and symmetrical upper and middle lung zones distribution.

Conclusion. The chest radiograph remains the first imaging study used in evaluating patients with diffuse parenchymal lung disease. The HRCT is recognised to be the additional imaging modality in differential diagnostic consideration. But despite the increased accuracy of HRCT and correlation of imaging findings with clinical data, the final verification of the process using lung biopsy shows the most accurate and effective manner of evaluating the patients.

MAYER-ROKITANSKY-KUSTER-HAUSER SYNDROME: ROLE OF PELVIC MRI FOR INITIAL DIAGNOSIS AND PREOPERATIVE EVALUATION

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Introduction. Mayer-Rokitansky-Kuster-Hauser syndrome (MRKHS) is a disorder that occurs in females and is characterized by absent or rudimentary uterus and the upper part of the vagina. Affected women usually do not have menstrual periods due to the absent uterus. The patients have a female chromosome pattern (46, XX) and normally functioning ovaries. Since the lower part of the vagina is developing from the urogenital sinus along with the bladder and urethra, this can be present even when the Mullerian duct is completely absent. The condition may be isolated (type I) or associated with other malformations (type II or MURCS association) such as vertebral, urologic, cardiac, and otologic anomalies.

Aim. The aim of this study was to establish the role of magnetic resonance imaging (MRI) in patients with Mayer-Rokitansky-Kuster-Hauser syndrome (MRKHS).

Material and methods. The study included 28 patients with MRKHS who underwent a pelvic MRI for determination of the spectrum of genital and associated malformations. Each malformation of the organs was classified in accordance with the VCUAM (Vagina Cervix Uterus Adnex-associated Malformation) classification (Oppelt P. et al., 2005).

Results and discussion. Müllerian remnants: In 27 (96.4%) showed uterine rudiments (U4a or U4b) and only in one (3.6%) — complete uterine agenesis ($p < 0.0001$). Bilateral uterine buds (U4a) were more often than unilateral (U4b), respectively 23 (85.2%) vs. 4 (14.8%). In most cases, the predominant uterine rudiments without cavitation — 25 (92.6%) vs. 2 (7.4%) — the existence of the endometrium ($p < 0.0001$). In classic variant of MRKHS, bilateral buds were connected with fibrous band-like structures ($n=25$, 92.6%), located mid-line or paramedian — 19 (76%) vs. 6 (24%) ($p=0.0005$). Ovaries: All cases had bilateral ovaries (A0), normal structure or micropolycystic — 23 (82.1%) vs. 5 (17.9%) ($p < 0.0001$). In most cases, ovaries located in the pelvic cavity — 24 (85.7%) and only 4 (14.3%) were ectopic (extrapelvic) ($p < 0.0001$). Vagina: The upper 2/3 of the was absent in all cases, whereas the lower 1/3 was present in two variants: ultra-short segment (< 1 cm) and short segment (> 1 cm) — 9 (32.1%) vs. 19 (67.9%) ($p=0.0154$). Associated findings: Associated malformations were found in 5 (17.9%) cases, renal anomalies — unilateral agenesis ($n=5$, MR) and association with vertebral ($n=2$, MS). MRKHS type I vs. type II (MURCS) — $p < 0.0001$. Correlation of MRI and surgery demonstrated perfect agreement (Cohen's kappa index 1.0).

Conclusion. MRI is a useful and noninvasive imaging method in the diagnosis and evaluation of patients with MRKHS.

CLINICAL AND RADIOLOGICAL DIFFERENCES BETWEEN TUBERCULOUS AND PYOGENIC SPONDYLITIS

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Aim. The purpose of our study was to highlight the clinical and radiological differences between tuberculous and pyogenic spondylitis.

Materials and methods. Retrospectively reviewed medical histories, CT and MRI of 20 patients with spondylitis, 13 with pyogenic spondylitis, 7 with tuberculous spondylitis. Diagnoses were based on bacteriological and cultural research and was made clinically, because of positive therapy dynamics after antibiotic therapy. Pyogenic spondylitis was caused by *Staphylococcus aureus* and *Pseudomonas pyocyanea* (in 50% was associated with diabetes), tuberculous spondylitis — by *Mycobacterium tuberculosis*. CT was performed on a 16-slice scanner, MR — on 0.2 T and 1.0 T system using a spine array coil, in 3 cases with intravenous contrast. The following criteria: the ratio of clinical manifestations and severity of the revealed destructions of the vertebrae, the number of affected vertebrae, the ratio destruction of the vertebral body and disk, sequestrs,

prevalence of distributional type, affection of the facet joints, paravertebral abscesses (wall and content), enhancement, kyphotic deformation.

Results. Tuberculous spondylitis was characterized by a torpid clinical start and severe destruction of the vertebrae; ≥ 2 vertebrae were affected; destruction of vertebral body predominated over the disk destruction; sequestrs were large and spongy; interdisk and subligamentous types of spread; rare affection of facet joints; paravertebral abscess was without capsule, tight, with calcination; frequently developed kyphotic deformities. Pyogenic spondylitis was characterized by acute violent clinics at the background of minor vertebral destructions, 1-2 vertebrae were affected; destruction of disk prevailed over the vertebral destruction; sequestrs were small and cortical; interdisk and epidural types of spread; frequent affection of the facet joints; paravertebral abscess had thick/thin and smooth wall, liquid high-protein content, gas; enhancement of pyogenic capsule; rarely developed kyphotic deformities.

Conclusions. Tuberculous and pyogenic spondylitis have clinical and radiological differences, which can be observed on CT, MRI. This may influence the choice of treatment.

FORENSIC EVALUATION OF BONE TRAUMA: IMAGING MODALITIES FOR DIFFERENT TYPES OF INJURIES

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Introduction. Radiographic imaging is widely used for forensic evaluation of traumatic injuries. Recent advances in medical imaging modalities, however, may pose additional challenges related to the imaging modalities of choice in different types of trauma.

Aim. The purpose of the current study was to assess the value of radiographic imaging for forensic evaluation and adjustment of image projections to the types of traumatic bone injuries.

Materials and methods. The study included 1002 consecutive patients older than 18 years old, with traumatic injuries that were referred for forensic evaluation at the Department of Radiology of the State University of Medicine and Pharmacy „Nicolae Testemitanu” in Chisinau, Moldova. A total of 1404 imaging investigations were performed for evaluation of reported head traumas ($n=496$), chest injuries ($n=416$), upper and lower extremity injuries ($n=336$), suspected vertebral injuries ($n=84$) and pelvic injuries ($n=72$). Special projections were used depending on the type of trauma and its location for optimal visualization of potential bone injuries with a lowest radiation dose. Technical parameters were adjusted according a specially designed algorithm for different types of traumatic injuries. The results were correlated with the final diagnosis and required repeated imaging investigations for different types of injuries.

Results. Overall, radiographic investigation was helpful in confirming or ruling out bone injuries in 90.9% of traumas to upper and lower extremities and in 93.1% of injuries involving pelvic bones. Re-examination was required in 8.3% patients with extremity trauma, 59.7% patients with chest injuries, 68.3% of patients with