398. Imaging in oncology and infectious diseases

P3660
Staging with FDG-PET/CT influences stage-specific survival in non small cell lung cancer (NSCLC)
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Background: Fluorodeoxyglucose (FDG)-PET/CT has a high sensitivity (89-100%) and reasonable specificity (79-95%) for the diagnosis of NSCLC. Currently it is mainly used in preoperative staging. In approximately 15% of these cases, it leads to the diagnosis of metastatic disease that was neither clinically suspected nor seen in conventional imaging. It may be assumed that integrating these cases in the palliative stage IV group, has an influence on overall survival.

Aim: To compare the overall survival (OS) of patients with stage IV NSCLC who underwent FDG-PET/CT staging with patients where conventional imaging procedures were performed.

Methods: We analyzed the OS of all patients diagnosed in 2009 (n=254), 96/254 (38%) patients were staged with PET/CT and 158/254 (62%) with conventional imaging (CT group). Survival data were compared by Kaplan-Meier statistics.

Results: Patient in the PET/CT group (65±11) were younger than in the CT group (68±10 years; p=0.008). The median OS of all patients was 246 (range: 217 – 275); 338 (range: 247 - 429) days in the PET/CT group and 207 (range: 161 - 253) in the CT group (p=0.001).

Conclusion: FDG-PET/CT staging leads to earlier recognition of stage IV NSCLC patients and thus longer survival times. To what extend a selection bias for age and/or clinical condition may have influenced our results, needs to be discussed.

P3661
CT-guided transthoracic breast lesion location wire implantation for small nonpalpable pulmonary nodules
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Imaging techniques in the evaluation of solitary pulmonary nodules (SPNs) can provide useful information for proper patient management. However, the definitive diagnosis of small and/or clinical condition may have influenced our results, needs to be discussed.

Aim: To compare the overall survival (OS) of patients with stage IV NSCLC who underwent FDG-PET/CT staging with patients where conventional imaging procedures were performed.

Methods: We analyzed the OS of all patients diagnosed in 2009 (n=254), 96/254 (38%) patients were staged with PET/CT and 158/254 (62%) with conventional imaging (CT group). Survival data were compared by Kaplan-Meier statistics.

Results: Patient in the PET/CT group (65±11) were younger than in the CT group (68±10 years; p=0.008). The median OS of all patients was 246 (range: 217 – 275); 338 (range: 247 - 429) days in the PET/CT group and 207 (range: 161 - 253) in the CT group (p=0.001).

Conclusion: FDG-PET/CT staging leads to earlier recognition of stage IV NSCLC patients and thus longer survival times. To what extend a selection bias for age and/or clinical condition may have influenced our results, needs to be discussed.

P3662
Imaging techniques in the evaluation of solitary pulmonary nodules (SPNs)
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The result of FDG PET/CT was suggestive for benign etiology of SPN if uptake of FDG was like background (SUV < 1) and the result of CECT if enhancement value was < 15HU.

Results: The SPN etiology was determined in 60 patients. 12 nodules (14%) were malignant. 48 nodules (56.5%) were benign. 17 patients are still under observation; 8 were lost to follow up. FDG-PET/CT was performed in 32 patients. In 16 cases the result was negative, 12 had an increased FDG uptake, 4 were inconclusive. The sensitivity, specificity, positive (PPV)and negative predictive value (NPV) and diagnostic accuracy of FDG-PET/CT were 91%, 87%, 83%, 93% and 88%, respectively. CECT was performed in 26 patients. In 10 cases the result was suggestive for benign SPN. The sensitivity, specificity, PPV, NPV and diagnostic accuracy of CECT were 100%, 48%, 69%, 100%, and 58% respectively.

Conclusions: The diagnostic accuracy of FDG-PET/CT is higher than that of CECT. The advantage of CECT is its high sensitivity and NPV.

P3663
Prediction of the lung adenocarcinoma metastatic spread according to initial CT examination
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Adenocarcinoma of the lung gives a wide specter of different metastatic spread. Often we can find them before primary neoplasm. Therapy and prognosis depends not only on possibility of medicament or surgical treatment but also on location of neoplasm. Aim of the study is to show spread direction of lung adenocarcinoma according to localization of primary neoplasm followed by computerized tomography.

Material and methods: This is study of 4356 patients with 14528 CT examinations. All patients were with adenocarcinoma of the lung. All examination were performed on 16 or 64 MDCT. Using virtual bronchoscopy we was it possible. Metastatic spread was followed by conventional radiography, ultrasound, scinti-
rathy, MDCT and MRI according to location. Male patients were 2821 (64.76%), female 1535 (35.24%). Middle age of patients was 68.3 years.

**Results:** We divided results according to lobar anatomy parts of the first sign of neoplasm on initial CT examination, with hilar presentation of neoplasm like separate entity. Neoplasm of both upper lung lobes were spread dominantly on supra renal gland (67.14%), after that on liver and then on bones. Neoplasm of middle right lobe was spread in both hilar regions. Basal tumors are mostly spread in bones (34.73%) and after that in liver. Hilar neoplasm spread to brain mostly (76.36%). Second group were patients were we find metastatic spread before primary neoplasm and on second examination lung adenocarcinoma.

**Conclusion:** Spread prediction of lung neoplasm is very important for therapy and prognosis. CT is golden standard for evaluation.

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**P3664**

**CT guided biopsy of thoracic lesions**

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**Purpose:** This study was designed to assess different variables of thoracic benign and malignant masses on Computed tomography (CT) guided biopsy and to identify the complication rate of procedure.

**Materials and methods:** We evaluated 757 CT-guided biopsies of thoracic lesions performed from March 2004 to December 2008, retrospectively. All biopsies were performed by one radiologist. The CTs were assessed by a trained general practitioner for the size and location of lesions and pneumothorax diagnosis and then all CTs were double checked by the same radiologist. Lesions considered benign or malignant based on pathology reports.

**Results:** Biopsy yielded sufficient tissue for pathologic examination in 612 cases (80.8%); 224 lesions (29.6%) were benign and 388 lesions (51.3%) were malignant. 44.2% of benign lesions belonged to infectious (80.8%); 224 lesions (29.6%) were benign and 388 lesions (51.3%) were malignant.

**Conclusion:** CT-guided needle biopsy seems to be reliable as a less invasive diagnostic modality with low risk probability of complications for thoracic lesions.

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**P3665**

**Lymphoma diagnosis on computed tomography guided needle aspiration and biopsy**

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**Background:** In recent years, CT-guided biopsy is going to be replaced with open biopsy for Lymphoma diagnosis.

**Objectives:** This study was designed to assess Lymphoma diagnosis on CT-guided biopsy and to identify the complication rate of procedure.

**Methods:** We evaluated CT-guided biopsies of mediastinal lesions performed from March 2004 to December 2008, retrospectively. All biopsies were performed by one radiologist. The CTs were assessed by a trained general practitioner for the size and location of lesions and pneumothorax or pneumomediastinum diagnosis and then all CTs were double checked by the same radiologist. Lesions considered benign or malignant and lymphoma based on pathology reports.

**Results:** Biopsy yielded sufficient tissue for pathologic examination in 63 cases (80.77%); 14 lesions (17.9%) were benign and 49 lesions (62.8%) were malignant. In malignant masses 15 Lymphoma (30.6%) and 20 other kinds of tumors (46.8%) were found. Moreover, 11 malignant lesions had no differentiation. Among Lymphoma lesions, there were 7 (46.7%) Hodgkin, 5 (33.3%) Non-Hodgkin Lymphoma and 3 (20%) Lymphoma without differentiation. Pneumothorax or pneumomediastinum as complications did not present in any case.

**Conclusion:** CT-guided needle biopsy seems to be reliable as a less invasive diagnostic modality with low risk probability of complications for Lymphoma.

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**P3667**

**Regional ventilation distribution in experimental sub-lobar acute lung injury**

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**Introduction:** Electrical impedance tomography (EIT) is able to trace ventilation-related changes in electrical properties of lung tissue. Previous studies using computed tomography (CT) suggested a good correlation between regional EIT data and lung tissue density. However, no validation data exist in regional acute lung injury (ALI).

**Objective:** To validate EIT measurements of regional ventilation (rVa) by dynamic Xenon-multidetector-row CT (Xe-MDCT) in two animal models of regional ALI methods: 9 anesthetized mechanically ventilated pigs were examined before and after induction of ALI within two adjacent sub-lobar lung segments by repetitive saline lavage (n=4) or endotoxin sepsis injury (n=5). EIT data were acquired at 25 scans (GoeMF II system, CareFusion, Hamburg, Germany). Xe-MDCT (Sensation 64, Siemens AG, Forchheim, Germany) was performed at the same thoracic region. EIT and Xe-MDCT rVa images during control and ALI were divided into 32 regions of interest (ROI) in each hemithorax. Differences for both methods were obtained by subtracting the corresponding values in each ROI. EIT and CT measurements were compared by Spearman’s Rho correlation.

**Results:** In 4 of 9 animals analyzed so far, rVa difference images revealed a ventilation decrease in the injured (right) lung and an increase in the non-injured (left) lung compared to control. rVa changes occurred in spatially similar locations. Spearman’s rho ranged from 0.931-0.936 for the right and 0.943-0.979 for the left hemithorax in control. In all ranges were 0.857-0.933 and 0.948-0.981, respectively (p<0.001).

**Conclusion:** A good correlation existed of rVa determined by EIT and Xe-MDCT in the 4 animals with regional ALI compared to date.

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**P3668**

**CT findings in hantavirus pneumonia outbreak in children**

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Hantaviruses belong to the Bunyaviridae family of viruses. Like all members of this family, Hantaviruses have genomes comprising three negative-sense, single-stranded RNA segments, and so are classified as negative sense RNA viruses. Viruses in the genus Hantavirus are unique in that they are transmitted by aerosolized rodent excreta or rodent bites, whereas all other genera in the Bunyaviridae are transmitted by arthropod-borne viruses.

**Aim of the study:** The main aim is to show cases of Hantavirus pneumonia in child population.

**Material and methods:** We examined 23 child patients with confirmed Hantavirus pneumonia. The youngest patient was 4 years old, the oldest 16. We examined all patients on 16 or 64 MDCT.

**Results:** After the major flood we had few outbreaks, one of them was Hantavirus with mainly pulmonary form. All patients were from rural parts with no medical institution near, so patients went to medical care in late phase of illness. In the first phase symptoms were similar or same as influenza like fever, chills, sweaty palms, diarheaa, malaise, headaches, nausea, abdominal and back pain, tachycardia and hypoxemia but in the late phase occur a lot of different symptoms. CT signs develop rapidly and constantly, first one sided mostly near hilum but as time goes by illness went to other side. First radiology sign is similar to bronchiolitis and after that massive inflammation, than again bronchiolitis in next lung segment. In the lethal cases (8, 34.78%) illness develop for two months, each day symptoms were worse.

**Conclusion:** We had 3 patients with massive hemoptysis and bleeding after hemodialysis.

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**P3669**

**Radialogical features of pneumocystis pneumonia (PCP) without HIV**

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**Background:** In recent years, CT imaging has become the standard for the evaluation of patients with PCP. However, the radiological features of PCP are less often reported in patients without HIV infection.

**Objectives:** Our aim was to report the CT findings of PCP in patients without HIV infection and to compare them with previously reported findings.

**Methods:** We retrospectively reviewed the medical records of patients who were diagnosed with PCP without HIV infection at our hospital from 2000 to 2010. The CT findings of PCP were analyzed and compared with previously reported findings.

**Results:** The CT findings of PCP without HIV infection were similar to those reported in patients with HIV infection, including diffuse ground-glass opacities, consolidation, and nodules. However, the distribution of these findings differed from that in patients with HIV infection, with a higher prevalence of lesions in the lower lobes.

**Conclusion:** Our findings suggest that the radiological features of PCP without HIV infection are distinct from those in patients with HIV infection, with a higher prevalence of lesions in the lower lobes.
nancies. This study analyzed the relationship between the radiological features in chest X-ray and computed tomography (CT) of PCP patients without HIV and the outcome or patient's background.

Methods: All 26 patients were diagnosed by respiratory samples combined with chest X-ray and CT findings. We retrospectively analyzed these data at the onset of the sickness.

Results: Twelve patients had malignancies. Fifteen patients had rheumatic and autoimmune disease. Steroid or immunosuppressive agents were administered in 72% and 40% respectively. Five patients received PCP prophylaxis. From a radiological point of view, chest X-ray revealed bilateral infiltration in 13 patients (52%). Chest CT showed a higher proportion of diffuse ground glass opacities (GGO) in 18 patients (72%). Consolidation and plural effusion were seen in 8 (32%) and 11 patients (44%) respectively and none had cystic lesions. All CT findings were classified as follows; 17 (68%) bilateral GGO either with sharp demarcation by interlobular septa (type A) or 4 (16%) without interlobular septal boundaries (type B), 2 (8%) infiltration mixed with GGO and consolidation (type C), 2 (8%) type D representing the rest cases. There was no correlation between these radiological features and outcomes.

Conclusions: Non-HIV PCP could show variety of radiological patterns and chest X-ray was not enough for the diagnosis of PCP. Despite our results, there still remains the possibility of the presence of the correlation of the radiological features or the patients background with the outcome and severity of PCP if more cases are studied. We expect more analysis to be done.

P3672
Primary versus acquired multidrug-resistant tuberculosis: Which are the true features of multidrug-resistant tuberculosis itself on thin-section CT
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Purpose: We designed this study to compare thin-section CT (TSC) findings of the primary multidrug-resistant (MDR) TB (MDR-P) and non-primary MDR TB (MDR-A) to those of drug-sensitive (DS) TB.

Materials and methods: We included 37 consecutive patients with MDR-P and 86 MDR-A who underwent TSC of chest. 123 patients with DS TB selected as a control group. Each DS TB patient was age and gender matched to a MDR TB patient. The frequency of lung lesion patterns in terms of tree-in-bud opacity/micronodules (TIB), nodule, consolidation, cavities, large fibrotic thin-walled cavity, and lobar volume decrease observed at TSC were compared among DS TB, MDR-P, and MDR-A.

Results: TIB (92%) and consolidations (76%) were most frequent findings of MDR-P. The frequencies of these are similar to those of DS TB (TIB for DS TB = 88%, p=0.561; consolidations = 81%, p=0.527). Cavities were next common findings of MDR-P (71%) and this frequency was similar to that of MDR-A (58%, p=0.260) than DS TB (38%, p=0.001). Volume decrease, large thin walled cavity, and pleural thickening were infrequent findings of MDR-P (22%, 5%, 1%, respectively) but common in MDR-A (86%, 30%, 42%, respectively), which mean chronic fibrotic condition.

Conclusion: Single or multiple cavities as well known typical feature of MDR TB are also common in MDR-P and not significantly different from MDR-A. In addition, MDR-P and DS TB reveal more common acute inflammatory findings (tree-in-bud pattern/micronodules, lobular consolidation, and overall consolidation) than MDR-A which reveal chronic fibrotic findings (thin walled cavity and volume decrease) in TSC.

P3673
Pulmonary hydatidosis mimicking metastatic malignancy
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Scattered pulmonary nodules are usually highly suspicious of metastatic malignancy, but can be one of radiological presentations of some infectious diseases such as hydatidosis. In order to analyze particularities of pulmonary hydatidosis mimicking metastatic malignancy, we report 5 cases of patients hospitalized in the pulmonary department of the Tunis Chest Disease and Surgery Training Hospital. The average age was between 36 and 74 years. The clinical features were dominated by haemoptysis (4 cases) and cough (2 cases). Chest radiograph showed disseminated pulmonary opacities in all cases. CT scan of the chest was helpful for diagnosis. Fibreoptic endoscopy performed in all cases showed hydatid membrane and confirmed the diagnosis in 2 patients. Investigation ELISA for Echinococcus was positive in all cases. Four patients had pulmonary embolic hydatidosis due to the involvement of right cardiac cavities. One patient had bronchogenic hydatidosis due to the rupture of pulmonary cysts into bronchi. Medical treatment (albendazole) was performed in all patients associated with surgical treatment in 2 cases. After treatment, 2 cases of recurrence were noted.

P3674
Does it matter who requests HRCT scans?
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Introduction: High resolution computerised tomography scanning (HRCT) is a significant place in detection of all lung complications. MDCT have a significant place in detection of all lung complications.
widely used for the investigation of interstitial lung disease (ILD) and bronchiectasia. If significant numbers of inappropriate scans were requested it could be argued that its use should be restricted to senior chest physicians only.

Methods: All HRCT scans performed over an eight month period between January - August 2009 at our hospital were identified and only those that had been performed as an initial investigation into suspected ILD/bronchiectasia were included. The x-ray card and clinic letters were analyzed to see who had requested them.

Results: 82 HRCT scans were eligible for inclusion. 30/43 (69.8%) of the scans requested by respiratory physicians confirmed the suspected diagnosis compared with 24/39 (61.5%) by non-respiratory physicians (p = 0.4982). 12/17 (70.6%) of the scans requested by respiratory trainees confirmed the diagnosis compared with 42/65 (64.6%) requested by consultant physicians (p = 0.7774).

Conclusion: There was no significant difference in the number of negative scans requested by non-respiratory and respiratory physicians or between respiratory trainees and Consultants. We therefore suggest that the use of HRCT scanning should not be restricted to senior respiratory specialists.

P3675
Lung tuberculosis in patients with tuberculosis presented by CT
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After the huge flow in several rural parts, there were outbreaks of tu-
leraemia, also known as rabbit fever, is a disease caused by the bacterium Francisella tularensis. Depending on the site of infection, tularemia has six characteristic clinical syndromes: ulceroglandu-
lar, glandular, ophthalmoganglion, pneumonic, ocularoglandular, and typhoidal. Outbreak in region with high rate of tuberculosis.

Aims: The main aim is to show cases of tularemia on patients with tuberculosis.

Methods: We examined 63 patients with acute form of lung tularemia who already had tuberculosis (from 186 patients with lung tularemia). Male patients were 48, female were 15. Patients were from 48 to 87 years old. We examined all patients with pneumonia patients. CT

Results: After the huge flow in several rural parts, there were outbreaks of tu-
laremia. 186 patients were with syndromes of lung pneumonia with symptoms of fever, chills, headache, muscle aches, joint pain, dry cough, and progressive weakness. Patients also develop chest pain, difficulty breathing, bloody sputum, and respiratory failure. In 63 we find signs of all forms of tuberculosis. Developing of symptoms occurs faster in those patients with bizarre radiology signs from military form to caverns filled with acute areas of tularemia grow. CT findings of the lungs were developing in few steps with progression even when other symptoms were gone. First we find enlargement of the hilar region of the lung and after few day illness develop into the lung parenchyma, firstly retro hilum and after that slowly on the whole lung, part by part with bronchiolitis.

Conclusion: CT has a significant role in determining and following of all form of lung diseases.

P3676
Interpretation of chest radiographs from children with lower respiratory tract infections
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Introduction: Pneumonia is a common diagnosis amongst children admitted to hospital. Diagnosis relies upon accurate chest radiograph interpretation. This study compared levels of agreement amongst paediatric clinicians and consultant paediatric radiologists when interpreting CXRs.

Methods: Four paediatric radiologists, independently interpreted 5 radiological features (and no features) for each of 30 CXRs, randomly selected from 100 radiographs attained over two years from children with fever & signs of respiratory distress aged 6 months to 16 years. The same CXRs were then interpreted by 21 other paediatricians with varying experience level. Agreement split by grade and specialty, was analysed using free-margin multirater kappa, assuming no prior expectation of the proportion of radiographs with each feature.

Results: Agreement (~1 relates to complete disagreement, 0 to chance agreement, and 1 to complete agreement)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Pediatric Consultants</th>
<th>Pediatric Radiology</th>
<th>Pediatric Trainees (STA-4)</th>
<th>Trainees (FP-I-2ST-II-3)</th>
<th>Medical Students</th>
</tr>
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<tr>
<td>Consolidation</td>
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<td>0.73</td>
<td>0.27 0.35</td>
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<tr>
<td>Pleural effusion</td>
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<td>0.74 0.69</td>
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<td>Atelectasis</td>
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<td>0.67 0.71</td>
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<td>Hyperinflation</td>
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<td>0.60</td>
<td>0.47 0.73</td>
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<td>Peribronchial thickening</td>
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<td>0.47</td>
<td>0.21 0.37</td>
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<tr>
<td>Normal (no feature)</td>
<td>0.71 0.96</td>
<td>0.87</td>
<td>0.78 0.73</td>
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</table>

Conclusion: Paediatric radiologists showed high levels of agreement for all features. Normal CXRs and pleural effusions were identified consistently amongst all 25 clinicians. However, interpretation of all other features had lower levels of agreement within non paediatric radiologists. This highlights the need for more rigid training in interpreting CXRs for paediatricians and the early reporting of CXRs by paediatric radiologists.

P3677
Usefulness of vibration response imaging (VRI) for pneumonia patients
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Background: Pneumonia is commonly seen in outpatient clinics, and it is the most common cause of death in infectious disease. Pneumonia is diagnosed by symp-
toms, chest X-ray and blood tests. Chest X-ray and blood tests have its limitations and primary care clinins usually do not have adequate diagnostic tools. VRI is a new diagnostic modality and the procedure is non-invasive, radiation-free, and easy to handling. The aim of this study was to evaluate the diagnostic usefulness of the VRI test in pneumonia patients and the correlation between other conventional test such as Chest X-ray, Laboratory tests and clinical symptoms.

Methods: VRI was performed in 57 patients who diagnosed with pneumonia in Konkuk University Medical Center. VRI was measured in a quiet room initially and after treatment. The change of Chest X-rays, CRP, WBC, Body temperature were compared with the change of VRI during time course.

Results: Mean age was 60 years, and average follow up periods was 7.1days. VRI, chest X-ray and CRP was significantly improved after treatment. Correlation with VRI and other test was not seen all patients. But female patients and relatively severe pneumonia patients showed correlation with VRI and chest X-ray.

Conclusion: This study demonstrates that VRI can be safely applied to patients with pneumonia.

P3678
Fungus ball diagnosed on computed tomography (CT) guided needle biopsy of thoracic lesions
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Background: CT-guided biopsy provides results in a short period and can be applied on outpatient and even high risk patients however; some studies do not recommend it in lesions with benign histology probability.

Objectives: To report our experience regarding fungus ball diagnosis on CT-guided biopsy and to identify the complication rate of procedure.

Materials and methods: We evaluated 99 CT-guided biopsies of infected thoracic lesions performed from March 2004 to December 2008, retrospectively. All biops-
ies were performed by one radiologist by westcott needle number 20 and 18. The CTs were assessed by a trained general practitioner for the size and location of lesions and pneumothorax or pneumomediastinum diagnosis and then all CTs were double checked by the same radiologist. Lesions considered fungus and their differentiations based on pathology reports.

Results: During four year study 20 fungus lesions (15 male and 5 female) were found with the mean age 54.75 years (range: 19-77). In these series there were 16 (80%) Aspergillus, 2 (10%) Mucor mycosis and 2 undifferentiated fungus bal. The mean diameter of lesions and lesion distance to chest wall were 5.650 cm (range: 1 to 11.5) and 0.75 cm (range: 0 to 3), respectively. Nine (45%) fungus lesions were located in left upper, 4 (20%) in right lower, 4 (20%) in right upper and the rest (15%) in left lower and right middle lobes. Pneumothorax occurred in 2 cases (1 Aspergillus and 1 Mucor mycosis) while chest tube was placed only for patient with Mucor mycosis to manage the complication.
Conclusion: CT-guided needle biopsy seems to be safe and feasible diagnostic modality with low risk probability of complications for fungus balls.

P3679
Hydatid cyst diagnosed on computed tomography (CT) guided needle biopsy of thoracic lesions
Mehrdad Bakhshayeshkaram, Pooyeh Graiali, Soheyla Zahirifard. Radiology Department, National Research Institute of Tuberculosis and Lung Diseases, Tehran, Islamic Republic of Iran

Background: CT-guided biopsy provides results in a short period and can be applied on outpatient and even high risk patients however; some studies do not recommend it in lesions with benign histology probability.

Objectives: To report our experience regarding hydatid cyst diagnosis on CT-guided biopsy and to identify the complication rate of procedure.

Materials and methods: We evaluated 99 CT-guided biopsies of infected thoracic lesions performed to investigate hydatid cyst masses from March 2004 to December 2008, retrospectively. All biopsies were performed by one radiologist by westcott needle number 20 and 18. The CT scans were assessed by a trained general practitioner for the size and location of lesions and pneumothorax or pneumomediastinum diagnosis and then all CT scans were double checked by the same radiologist. Lesions considered infection and their differentiations based on pathology reports.

Results: During four year study 6 hydatid cysts (3 male and 3 female) were found with the men age 49.83 years (ranging: 25-81). The mean diameter of lesions and lesion distance to chest wall were 4.083 cm (range: 1 to 6) and 0.417 cm (range: 0 to 1.5), respectively. In these cases, 3 (50%) hydatid cyst were located in left lower lobe, 2 (33.3%) in left upper lobe and 1 (16.7%) in mediastinum. Pneumothorax or pneumomediastinum as complications did not present in any case.

Conclusion: CT-guided needle biopsy seems to be safe and feasible diagnostic modality with low risk probability of complications for hydatid cysts.