ESTI European Society of Thoracic Imaging

ESTI THORACIC SUMMIT 2016

OCTOBER 23-24, 2016
KRAKOW, POLAND

FINAL PROGRAMME

ESTI 2016 THORACIC SUMMIT

FINAL PROGRAMME

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WELCOME FROM THE 2016 PRESIDENT

Dear Colleagues, distinguished ESTI Members and dear Friends,

On behalf of the European Society of Thoracic Imaging, it is my great pleasure to invite you all to the **ESTI 2016 Thoracic Summit** between **October 23 and 24, 2016**. The summit will be held in Krakow, the former capital of Poland and a vital university city with medieval roots offering so much to visitors. The legacy of the golden age of Polish history can be seen on every turn of this magnificent city.

The scientific committee of the ESTI 2016 is proud to prepare a programme of outstanding scientific quality. The varied and interesting programme is equally dedicated to most recent developments and challenges in thoracic imaging as well as to education and training. Case-based discussions and interactive involvement of the auditorium guarantee practical applicability. Topics will be discussed from a clinical and radiological point of view, mirroring the growing importance of interdisciplinary cooperation. Renowned speakers from Europe and abroad will join forces to deliver state-of-the-art lectures, share their knowledge and experience, generate debate and identify questions for future research.

Educational and scientific posters will be displayed on large scale screens to allow for discussions with colleagues and authors.

The congress is open to radiologists and clinicians actively involved or interested in thoracic imaging. Young radiologists are invited to participate and present their scientific work with awards awaiting the best papers and posters.

I believe that ESTI 2016 Thoracic Summit will be an excellent opportunity for academic and scientific exchange among the thoracic imaging radiologists and clinicians from all over the world.

I cordially invite you to join us in one of the most significant scientific events in the field of thoracic imaging, to take the opportunity to meet colleagues and friends, make new contacts, exchange knowledge and ideas and, last but not least, experience and enjoy Krakow's unique atmosphere.

I am looking forward to seeing you in Krakow in October 2016.

Yours,

Nevzat Karabulut
ESTI 2016 President

PROGRAMME OVERVIEW

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Colour coding

Scientific	
Educational Imaging	

INVITED FACULTY

Macit Ariyurek, Ankara/TR
Cetin Atasoy, Ankara/TR
Selen Bayraktaroglu, Izmir/TR
Jürgen Biederer, Gross-Gerau/DE
Pierre-Yves Brillet, Bobigny/FR
Anna Chodorowska, Wroclaw/PL
Figen Demirkazık, Ankara/TR
Sujal Desai, London/UK
Tomás Franquet, Barcelona/ES
Thomas Frauenfelder, Zurich/CH
Benoit Ghaye, Brussels/BE
Jin Mo Goo, Seoul/KR
Nigel Howarth, Chêne-Bougeries/CH
Jeffrey Kanne, Madison/UK
Nevzat Karabulut, Denizli/TR
Anna Rita Larici, Rome/IT
Sebastian Ley, Munich/DE
Theresa McLoud, Boston/US
Firdaus Mohamed Hoesein, Utrecht/NL
Yoshiharu Ohno, Kobe/JP
Anastasia Oikonomou, Toronto/CA
Jai-Soung Park, Bucheon/KR
Anagha Parkar, Bergen/NO
Helmut Prosch, Vienna/AT
Marie-Pierre Revel, Paris/FR
Joon Beom Seo, Seoul/KR
Nicola Sverzellati, Parma/IT
Johny Verschakelen, Leuven/BE
Michelle Williams, Edinburgh/UK

CONGRESS PROGRAMME SUNDAY, OCTOBER 23, 2016

08:00-09:00 Scientific Session: ILD/Airways/Infection — Room 1

Moderators: P-Y. Brillet, Bobigny/FR; T. Frauenfelder, Zurich/CH

08:00 **Use of chest radiography for diagnosing mild COPD**
A.M. den Harder, Utrecht/NL

08:07 **Computer-based CT prognostication in rheumatoid arthritis-interstitial lung disease (RA-ILD): comparisons with visual CT evaluation and functional indices**
J. Jacob, London/UK

08:14 **Two-year progression of pulmonary emphysema in ITALUNG trial: quantitative CT evaluation by commercial and CALIPER software**
C. Romei, Pisa/IT

08:21 **Game over for old scoring systems? Lung texture analysis in interstitial lung involvement of Systemic Sclerosis**
M. Occhipinti, Florence/IT

08:28 **Effect of smoking cessation on quantitative computed tomography in smokers at risk in a lung cancer screening population**
B. Jobst, Heidelberg/DE

08:35 **Diagnostic Performance of Ultra Low Dose Thoracic Computed Tomography (uLDCT) for pulmonary infection in Immunocompromised Patients**
A. Ghali, Toronto/CA

08:42 **Relationship Between Abnormalities on High-Resolution Computerized Tomography, Pulmonary Function, and Bronchoalveolar Lavage in Progressive Systemic Sclerosis**
T. Selcuk Can, Istanbul/TR

08:49 **The role of fetal MRI in planning for the ex-utero intrapartum (EXIT) procedure**
T.R. Semple, London/UK

08:56 **Chronic hypersensitivity pneumonitis: identification of patients with an idiopathic pulmonary fibrosis equivalent outcome using automated CT analysis**
J. Jacob, London/UK

08:00-09:00 Scientific Session: Lung Nodules and Screening — Room 2

Moderator: J.B. Seo, Seoul/KR

08:00 **Computer-aided detection (CAD) of solid pulmonary nodules in chest X-ray equivalent ultralow dose chest CT - first in-vivo results at mean dose levels of 0.13 mSv**
M.A. Messerli, St. Gallen/CH

08:09 **CT lung cancer screening: baseline results from a large Italian program compared to the NLST data**
G. Cicchetti, Rome/IT

08:18 **Accuracy of FDG PET/CT in the evaluation of solitary pulmonary lesions – own experience**
L. Opoka, Warsaw/PL

08:27 **Subsolid pulmonary nodule morphology in a routine clinical population**
O. Mets, Utrecht/NL

08:36 **CT-guided needle biopsy of lung lesions: is there the possibility of reducing the dose?**
G. Coppola, Rome/IT

09:00-09:15 Break

09:15-10:45 The Lung Cancer MDT **Room 1**

Moderator: A. Larici, Rome/IT

09:15 **Indolent lung cancers and benign nodules – surveillance versus intervention**
Th. McLoud, Boston/US

09:37 **Role of imaging for predicting therapy response**
Y. Ohno, Kobe/JP

09:59 **Treated lung cancer-imaging appearances after radiotherapy**
B. Ghaye, Brussels/BE

10:21 **Assessment of lung cancer treatment response after immunomodulating drugs**
M-P. Revel, Paris/FR

09:15-10:00 Poster Presentations **Room 2**

Moderator: N. Sverzellati, Parma/IT

09:15 **Effects of Bismuth Breast Shielding on Dual-Energy Computed Tomography: An Experimental Phantom Study**
K.O. Choe, Seoul/KR

09:20 **Diagnostic confidence and complications of CT-guided core needle lung biopsy in solid and part-solid lesions**
H. Kang, Busan/KR

09:25 **Cheat off the thoracic MR features from breast MR: Key points to make a differential diagnosis.**
E.Y. Kim, Suwon/KR

09:30 **Pulmonary Vasculitis and Hemorrhage: Imaging and Pathologic Findings**
K.-N. Lee, Busan/KR

09:35 **Systemic air embolisms after CT-guided transthoracic needle biopsy: A single-institution experience**
J.Y. Rho, Seongnam-si/KR

09:40 **Evaluation of esophageal cancer with Prone position Chest CT**
Y.H. Kim, Gwangju/KR

09:45 **Asbestos-related lung cancer: evaluation of radiological markers of asbestos exposure on thoracic CT**
J.S. Kim, Goyang-si/KR

09:50 **Measurement of total lung capacity in patients with COPD: Comparison between obtained by computed tomography and by multi-breath nitrogen washout test**
Y.H. Kim, Gwangju/KR

10:45-11:00 Coffee Break

11:00-12:10 Uncommon diagnoses – pitfalls and tips **Room 1**

Moderator: N. Howarth, Chêne-Bougeries/CH

11:00 **Pulmonary Alveolar Proteinosis**
J-M. Goo, Seoul/KR

11:22 **Depositional Diseases of the Lungs**
T. Franquet, Barcelona/ES

11:44 **Nonthrombotic pulmonary embolism**
M. Ariyurek, Ankara/TR

12:10-12:15 Break

12:15-13:15 Industry Sponsored Symposium **Room 1**

13:15-13:30 Break

13:30-15:30 Radiation Dose **Room 1**

Moderator: A. Parkar, Bergen/NO

13:30 **PE imaging in Pregnancy**
M-P. Revel, Paris/FR

13:58 **Optimizing dose and quality in HRCT**
S. Ley, Munich/DE

14:26 **Ultra-lowdose CT instead of CXR?**
F. Mohamed Hoesein, Utrecht/NL

14:54 **Dose reduction strategies in cardiovascular diseases**
M. Williams, Edinburgh/UK

15:30-16:00 Coffee Break

16:00-17:40 Clinicoradiological Case Based Discussion **Room 1**

Moderators: C. Atasoy, Ankara/TR; A. Chodorowska, Wroclaw/PL

16:00 **Infectious versus organizing pneumonia**
S. Bayraktaroglu, Izmir/TR

16:25 **The acute dyspnoeic patient**
J. Biederer, Gross-Gerau/DE

16:50 **The patient with endstage fibrosis**
F. Demirkazık, Ankara/TR

17:15 **Smoking related interstitial lung disease**
N. Sverzellati, Parma/IT

Discussion

CONGRESS PROGRAMME MONDAY, OCTOBER 24, 2016

08:00-09:30 Scientific Session: Lung cancer — Room 1

Moderators: J. Verschakelen, Leuven/BE; J-S. Park, Bucheon/KR

08:00	**Correction system of CT volumetric data in NSCLC survival prediction by Radiomics analysis. Preliminary results** A. Farchione, Rome/IT
08:09	**Prognostic impact of CT-quantified abdominal fat and muscle distribution before and after chemotherapy in lung cancer patients** J. Nattenmüller, Heidelberg/DE
08:18	**3-year survival of Patients with Primary Lung Tumors post CT-guided Radiofrequency Ablation** S. Raza, London/UK
08:27	**Percutaneous microwave thermal ablation (MWA) for patients with malignant lung tumors: a prospective multicenter study (MALT study). Preliminary results** R. Iezzi, Rome/IT
08:36	**Low muscle mass and inflammation as significant predictor of survivial in patients with small cell lung cancer** M.J. Park, Jinju/KR
08:45	**Whole Body MRI with Diffusion Weighted Imaging (DWI) for preoperative assessment of lymph node involvement in NSCLC patients: ADC value of primary tumor as prognostic factor** M. Ciliberto, Rome/IT
08:54	**Role of delayed enhanced phase in the intra-thoracic staging of lung cancer: what does it add?** P. Franchi, Rome/IT
09:03	**Survival prediction of NSCL lung cancer: to deepen the imaging features significance** A. Farchione, Rome/IT
09:12	**Correlation between standardized uptake value and apparent diffusion coefficient values in non small cell lung cancer** N. Poyraz, Konya/TR
09:21	**Whole-body MRI with diffusion-weighted imaging with background body-signal suppression (DWIBS) in NSCLC: repeatability of the apparent diffusion coefficient** M. Ciliberto, Rome/IT

08:00-09:30 Scientific Session: Pulmonary vascular — Room 2

Moderator: Y. Ohno, Kobe/JP

08:00	**Age dependent changes in lung arteries and veins in healthy women and men** M. Pienn, Graz/AT
08:09	**Scan-rescan reproducibility of RV/LV diameters ratio by pulmonary CT angiography in acute pulmonary embolism** P. Auloge, Rennes/FR
08:18	**CT parameters as predictors of adverse events in patients with pulmonary embolism in the PREP study** Y. Lismonde, Brussels/BE
08:27	**Automated 3D volumetry of the pulmonary arteries based on CT angiography for non-invasive estimation of pulmonary arterial pressure in suspected pulmonary hypertension** C. Melzig, Heidelberg/DE
08:36	**Validation of Computer-Aided Detection software for the detection of pulmonary embolisms on CT** N. Hendriks, Zwolle/NL
08:45	**Initial experience with the use of diffusion-weighted magnetic resonance imaging to assess pulmonary infarction** B. Hochhegger, Porto Alegre/BR
08:54	**Learning-curve effects in radiology residents reviewing a dedicated MRI-protocol regarding pulmonary embolism** A. Nordgren Rogberg, Stockholm/SE
09:03	**The 100 Top-Cited Articles in Pulmonary Imaging: A Bibliometric Analysis** S.J. Hong, Seoul/KR

09:30-09:45 Coffee Break

09:45-11:30 ILD — Room 1

Moderator: J. Kanne, Madison/UK

09:45	**Hypersensitivity pneumonitis – imaging updatee** A. Oikonomou, Toronto/CA
10:10	**Combined pulmonary fibrosis and emphysema – one or two diagnoses?** J. Verschakelen, Leuven/BE
10:35	**Idiopathic pulmonary fibrosis – current thoughts and issues** S. Desai, London/UK
11:00	**Sarcoidosis and thoracic complications** H. Prosch, Vienna/AT

09:45-10:30 Poster Presentations **Room 2**

Moderator: M.-P. Revel, Paris/FR

09:45 **Imaging Issues on Lung cancer Treatment**
C.H. Park, Seoul/KR

09:50 **CT findings of pulmonary non-tuberculous mycobacterial infection : A case controlled comparison of the disease prognosis**
G.E. Yang, Chuncheon/KR

09:55 **Computer Simulation Model Based on Thorax Configuration to Predict Its Aerodynamics in Young Patients with Primary Spontaneous Pneumothorax**
T.H. Kim, Seoul/KR

10:00 **The post-lobectomy chest**
H.J. Park, Suwon/KR

10:05 **Isolated unilateral pulmonary artery agenesis vs. isolated unilateral pulmonary vein atresia: Comparison of radiologic findings and differential diagnosis in adults**
E.-Y. Kang, Seoul/KR

10:10 **Correlation of Coronary Artery Calcium Score with Alberta Stroke Program Early CT Score in Acute Ischemic Stroke**
S.S. Shim, Seoul/KR

10:15 **Thoracic wall muscle volume on chest CT scan: Impact on severity of COPD**
S.S. Shim, Seoul/KR

10:20 **Percutaneous cutting needle biopsy and fine needle aspiration cytology for diffuse micronodular lung disease using the same coaxial guide needle under a C-arm cone-beam CT system**
C.-K. Park, Guri/KR

11:30-12:00 Awarding and Closing **Room 1**

N. Karabulut, Denizli/TR

12:00-12:45 General Assembly **Room 1**

INVITED ABSTRACTS

Indolent lung cancers and benign nodules - surveillance versus intervention

T. McLoud; Boston, MA/US

Body

The separation of indolent lung cancers from benign nodules may be difficult and depends greatly on the size of the nodule. Risk stratification is important in the management of both large and small nodules. Risk factors for malignancy need to be considered. These include clinical risk factors as well as CT characteristics of lung nodules. The clinical risk factors include an older age, history of smoking, history of extrathoracic cancer within 5 years and a family history of lung cancer. The CT characteristics which increase the risk of lung cancer include a size of greater than 8 to 10 mm, certain border characteristics, the absence of benign calcification or fat, subsolid density, growth rate and location.

Thin section CT in the range of 1.5 to 2 mm is recommended in the evaluation of indeterminant solitary or multiple pulmonary nodules. Small nodules less than 4 mm in diameter have less than a 0.5% likelihood of lung cancer even in smokers. These nodules do not require follow-up. Nodules in the range of 8-10 mm or greater have a 10-20% chance of malignancy. Surveillance over at least a two year period provides the most reasonable strategy for the management of small solid nodules. Semisolid nodules and ground glass nodules require further surveillance because of their long doubling time and slow growth. 3-5 year annual follow-up is recommended.

The Fleischner Society provides recommendations and guidelines for the follow-up of incidental solid pulmonary nodules. The Fleischner calcification has recently been revised but at the time of this abstract has not as yet been published. The new guidelines include both solid and subsolid nodules. Malignancy in subsolid nodules is associated both with lesion growth and the growth of the solid component.

Recommendations for diagnostic intervention depend mostly on the size of the nodule: >8-10 mm or evidence of interval growth. PET-CT may be of diagnostic benefit in such nodules. Interventional techniques include needle aspiration biopsy, bronchoscopic biopsy, VATS with biopsy and resection.

Take Home Points

1. Risk stratification is important.
2. Clinical risk factors for malignancy as well as CT characteristic of lung nodules should be considered
3. Thin section CT in the range of 1.5 to 2mm is critical for nodule assessment.
4. Nodules 4mm or less are invariably benign and do not require surveillance
5. PET CT may be helpful in the diagnosis of nodules greater than 8-10mm in size.
6. Subsolid nodules require follow up in the range of 3-5 years.

Role of imaging for predicting therapy response

Y. Ohno; Kobe/JP

Body

Radiological examinations using CT, MRI and nuclear medicine study including PET, PET/CT and/ or PET/MRI are usually performed for diagnosis, staging, therapeutic effect assessment and/ or follow-up in various chest diseases. In the last decade, several investigators have been suggested that one of the new roles of radiology is predicting therapeutic response in patients with various conservative therapies. Therefore, many studies have been tried to answer this clinical question or hypothesis. Based on these study results, recent advances of radiological examination make it possible to predict postoperative lung function and therapeutic effect as well as therapeutic response prediction in patients with various chest diseases.

In this lecture, I will discuss 1) basics of therapeutic response prediction on CT and MRI, 2) clinical application and relevance of treatment response prediction by CT and MRI, and 3) how to select better candidates for treatment on radiological examination.

Take Home Points

Basics of therapeutic response prediction on CT and MRI Clinical application and relevance of treatment response prediction by CT and MRI How to select better candidates for treatment on radiological examination

Treated lung cancer – imaging appearances after radiotherapy

B. Ghaye; Brussels/BE

Body

Radiation-induced lung disease (RILD) is frequent after therapeutic irradiation of thoracic malignancies. Many technique-, treatment-, tumor- and patient-related factors influence the degree of injury sustained by the lung after irradiation. Based on the time interval after the completion of the treatment RILD presents as early and late features characterized by inflammatory and fibrotic changes, respectively. They are usually confined to the radiation port. Though the typical pattern of RILD is easily recognised after conventional 2-D radiation therapy (RT), RILD may present with atypical patterns after more recent type of 3D- or 4D-RT treatment. Three atypical patterns are reported: the modified conventional, the mass-like and the scar-like patterns. Knowledge of the various features and patterns of RILD is important for correct diagnosis and appropriate treatment. RILD should be differentiated from recurrent tumoral disease, infection and radiation-induced tumors. Due to RILD the follow-up after RT may be difficult as RECIST criteria may be unreliable to assess tumor control particularly after stereotactic ablation RT (SABR). Long-term follow-up should be based on clinical examination and morphological or/and functional investigations including CT, PET-CT, pulmonary functional tests, MRI and PET-MRI.

Assessment of lung cancer treatment response after immunomodulating drugs

M.-P. Revel, A. Saltel-Fulero; Paris/FR

Body

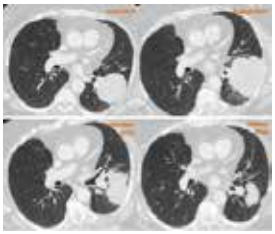
The recent approval of the anti-programmed cell death 1 (anti-PD-1) monoclonal antibodies nivolumab and pembrolizumab for previously treated advanced squamous and non-squamous non-small cell lung cancer (NSCLC), as well as other immune checkpoint inhibitors, delivers promising results in the therapeutic landscape of NSCLC.

However, the evaluation of tumor response to these new agents must be performed by using adapted criteria. Indeed, at least 6% of patients experience response to this treatment despite the apparition of new lesions or initial increase of target lesions, due to the afflux of T cells around the tumor cells. To distinguish between pseudo progression and true progression, the irRECIST criteria (for immune-related Response Evaluation Criteria in Solid Tumor) have been defined and should be used in patients treated by check point inhibitors.

There are some differences with RECIST criteria regarding the follow-up evaluation, even though definition of target and non-target lesion at baseline is identical.

Baseline-selected target lesions and new measurable lesions should not be assessed separately. Measurements of those lesions, in the limit of 2 new measurable lesions, must be combined into the Total Measured Tumor Burden (TMTB), and one combined assessment provided. Other new measurable lesions must be integrated to the non-target lesions, and combined assessment provided.

In alignment with RECIST 1.1, baseline, selected non-target lesions can never convert to measurable lesions, not even if they increase in size at subsequent timepoints and become measurable.



An apparition of new lesions, an increase in TMTB by more than 20% or an unequivocal increase of non-target lesions do not necessarily define immune-related progressive disease (irPD). Progression confirmation no less than 4 weeks after the initial irPD assessment is recommended, to distinguish between pseudo and true progression.

Take Home Points

1. irRECIST criteria should be used for response assessment in NSCL patients treated by immune check point inhibitors
2. Definition of target and non-target lesion at baseline is identical to RECIST 1.1
3. Baseline-selected target lesions and new measurable lesions, in the limit of 2, should be combined into the Total Measured Tumor Burden (TMTB)
4. Apparent progression should be confirmed at 4 weeks to distinguish between pseudo and true progression

Pulmonary Alveolar Proteinosis

J.M. Goo; Seoul/KR

Body

Pulmonary alveolar proteinosis (PAP) is a rare pulmonary disease caused by altered surfactant homeostasis resulting in alveolar accumulation of surfactant. Auto-immune PAP with anti-granulocyte macrophage-colony stimulating factor (GM-CSF) antibodies represents the vast majority of cases, and it can be secondary to toxic inhalation, hematologic disorders, or immunodeficiency. Congenital form is caused by mutations in GM-CSF receptor genes. PAP typically develops during middle age and its course is variable ranging from spontaneous remission to respiratory failure. The most frequent CT feature is a bilateral geographic "crazy-paving" pattern defined as a network of smoothly thickened reticular lines superimposed on areas of ground-glass opacity, but other diseases such as pulmonary edema, various pneumonia, alveolar hemorrhage, diffuse alveolar damage, and neoplastic diseases may also show this pattern. Although diagnosis is usually made with bronchoalveolar lavage, sometimes lung biopsy is necessary. Whole lung lavage is the current standard treatment for PAP patients. Novel therapies directed to autoantibodies or alveolar macrophage are under investigation.

Take Home Points

PAP is caused by altered surfactant homeostasis resulting in alveolar accumulation of surfactant. Typical CT feature of PAP is a bilateral geographic "crazy-paving" pattern. Crazy-paving pattern is not a specific finding of PAP and various differential diagnoses should be considered based on clinical and radiologic findings.

Depositional Diseases of the Lungs

T. Franquet; Barcelona/ES

Body

Depositional (metabolic) lung disease refers to a heterogeneous group of pulmonary diseases, the pathogenetic mechanism of which is accepted or suspected to be an underlying biochemical abnormality.

These diseases include pulmonary alveolar proteinosis (PAP), pulmonary amyloidosis, metastatic pulmonary calcification, dendritic pulmonary ossification, pulmonary alveolar microlithiasis, and storage diseases.

In PAP, CT demonstrates air-space consolidation with thickened interlobular septa, producing the so-called "crazy paving" appearance.

Pulmonary amyloidosis can appear as parenchymal nodules (nodular parenchymal form), diffuse interstitial deposit (diffuse interstitial form), or submucosal deposits in the airways (tracheobronchial form).

Metastatic pulmonary calcification may appear on high-resolution CT as numerous 3- to 10-mm diameter calcified nodules or, more commonly as fluffy and poorly defined nodular opacities.

In pulmonary microlithiasis, high-resolution CT demonstrates diffuse punctuate micronodules showing slight perilobular predominance resulting in apparent calcification of interlobular septa.

Niemann–Pick disease appears as ground-glass attenuation in the upper lung zone and thickening of the interlobular septa in the lower lung zone. Radiologic study including high-resolution CT will be helpful for the diagnosis and follow-up of these diseases.

References
Chung MJ, Lee KS, Franquet T, Muller NL, Han J, Kwon OJ. Metabolic lung disease: imaging and histopathologic findings. Eur J Radiol 2005;54:233-245. Kim TS et al. Disseminated dendriform pulmonary ossification associated with usual interstitial pneumonia: incidence and thin-section CT–pathologic correlation. Eur Radiol 2005;15:1581–1585. Hartman TE, Muller NL, Primack SL, et al. Metastatic pulmonary calcification in patients with hypercalcemia: findings on chest radiographs and CT scans. AJR Am J Roentgenol 1994;162:799-802. Johkoh T, Ikezoe J, Nagareda T, Kohno N, Takeuchi N, Kozuka T. Metastatic pulmonary calcification: early detection by high-resolution CT. J Comput Assist Tomogr 1993;17:471-473. Lee KN, Levin DL, Webb WR, Chen D, Storto ML, Golden JA. Pulmonary alveolar proteinosis: high-resolution CT, chest radiographic, and functional correlations. Chest 1997;111:989-995. Borie R et al. Pulmonary alveolar proteinosis. Eur Respir Rev 2011; 20: 120, 98–107 Franquet T, Gimenez A, Bordes R, Rodriguez-Arias JM, Castella J. The crazy-paving pattern in exogenous lipoid pneumonia: CT-pathologic correlation. AJR Am J Roentgenol 1998;170:315-317. Pickford HA, Swensen SJ, Utz JP. Thoracic cross-sectional imaging of amyloidosis. AJR Am J Roentgenol 1997;168:351-355. Urban BA, Fishman EK, Goldman SM, et al. CT evaluation of amyloidosis: spectrum of disease. Radiographics 1993;13:1295-1308. Desai SR, Nicholson AG, Stewart S, Twentyman OM, Flower CD, Hansell DM. Benign pulmonary lymphocytic infiltration and amyloidosis: computed tomographic and pathologic features in three cases. J Thorac Imaging 1997;12:215-220.. Melamed JW, Sostman HD, Ravin CE. Interstitial thickening in pulmonary alveolar microlithiasis: an underappreciated finding. J Thorac Imaging 1994;9:126-128. Korn MA, Schurawitzki H, Klepetko W, Burghuber OC. Pulmonary alveolar microlithiasis: findings on high-resolution CT. AJR Am J Roentgenol 1992;158:981-982. Richards JC, Lynch DA, Chung JH. Cystic and Nodular Lung Disease. Clin Chest Med. 2015; 36:299-312.

Take Home Points

The spectrum of depositional diseases of the lung is wide.
Knowledge of the clinical setting is crucial to suggest a diagnosis.
High-resolution CT is useful for the diagnosis and follow-up of these diseases.

Nonthrombotic pulmonary embolism

M. Ariyürek; Ankara/TR

Body

Pulmonary thromboembolism (PTE) is one of the leading cause of morbidity and mortality. The most common underlying pathogenesis of PTE is presence of thrombi in lower extremity veins and their distal embolization to pulmonary arterial vasculature however non-thrombotic pulmonary emboli (PE) may be encountered as a rare cause of pulmonary emboli. Although rarely seen in routine clinical practice, detailed knowledge about radiological findings of non-thrombotic PE is mandatory for timely diagnosis and treatment. Like PTE, symptomatology of non-thrombotic PE encompasses a wide range of clinical spectrum varying from asymptomatic cases to severe right heart failure and sudden death. Most commonly seen symptoms are shortness of breath, tachycardia, hemoptysis and cough. Beyond acute clinical conditions, it may end up with pulmonary hypertension as well. Underlying causes and degree of involvement with regard to pulmonary vasculature can usually be elucidated via imaging techniques. Non-thrombotic PE may arise due to exogenous or endogenous substances.

Amniotic fluid embolism is a rare clinical entity with varying reported incidences in literature due to difficulties in establishing definitive diagnosis. It is associated with advanced maternal age and results from entrance of amniotic fluid components into maternal blood. It courses with bilateral widespread opacities that cannot be differentiated from other causes of pulmonary edema.

Fat embolism is usually encountered after trauma especially involving long bones, its probability increases with severity of trauma. Radiological findings usually lag behind the initial traumatic event. Two possible pathogenesis is suggested in order to explain pulmonary involvement; gross obstruction of pulmonary vessels by fat globules or injury due to cytokines and proinflammatory substances released secondary to circulating free fatty acids. Radiological findings of lung involvement include but not limited to small nodules distributed with centrilobular pattern, areas of consolidation or ground glass opacities.

Tumoral embolism has variable imaging appearances depending on underlying pathogenetic mechanism. It may present with tree-in-bud pattern which has a wide differential diagnosis list including infections or tumoral tissue can be directly visualized as an enhancing lesion unlike bland thromboemboli in main pulmonary artery or its branches. Also tumoral emboli is characterized by relative lack of adequate response to thrombolytic therapy when compared to bland thromboemboli. Hepatocellular, breast, lung, pancreas, renal cell and prostate carcinomas account for majority of pulmonary tumoral emboli cases.

Cystic echinococcus located in heart or liver may rarely emboli to the pulmonary vasculature via rupture into inferior vena cava or right cardiac chambers.

Inserted venous catheters due to any clinical indication may become lodged in pulmonary arteries as a result of embolization. Compression of infraclavicular segment of catheter between clavicle and first rib -pinch off syndrome- is a common cause of catheter embolization.

Air is usually introduced into pulmonary vasculature iatrogenically; such as inadvertent insertion of central catheters or concomitant air injection with contrast material before CT imaging. Amount and rate of accidentally injected air levels during routine daily practice usually can not reach lethal volumes. Air densities may be seen in main pulmonary artery or its branches, systemic veins as well as right chambers of heart.

Bullet embolism has become a relatively more frequent cause of embolism owing to more widespread utilization of weapons. A bullet or fragment entering into venous system may circulate and obstruct pulmonary arteries. It especially happens when bullet enters circulation with low velocity causing trivial damage at venous entry site without significant hemorrhage or rupture. Due to metallic high densities bullet fragments are easily recognized on either radiographs or CT images.

Cement (polymethyl-methacrylate) is used during vertebroplasty procedures in order to alleviate pain in compression fractures of vertebral bodies. Cement leakage may ensue pulmonary embolism which is readily demontrated in radiographs or CT images due to radioopaque cement material. It is visualized as branching radioopacities with branching pattern conforming to pulmonary arterial distribution.

Septic pulmonary embolism may arise due to various clinical conditions including infective endocarditis, infected indwelling catheters. Since blood cultures may remain negative through the course of septic embolism, imaging findings play key role for diagnosis. Though chest radiographs may be helpful computed tomography is the modality of choice for radiological evaluation. Presence of multiple peripheral nodules distributed throughout the lungs is the typical imaging finding, nodules have a tendency to cavitate. Pleura based wedge shaped opacities and nodules containing air bronchograms can also be seen.

Suggested Readings

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2. Khashper A, Discepola F, Kosiuk J, Qanadli SD, Mesurolle B. Am J Roentgenol. 2012 Feb;198:152-9
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Take Home Points

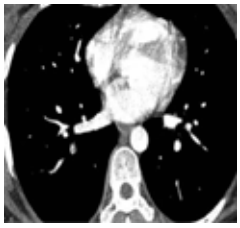
Nonthrombotic pulmonary embolism (NTPE) accounts for a wide range of etiologies. NTPE may arise due to endogenous substances such as fat embolism, tumoral embolism, septic embolism, amniotic fluid embolism and hydatid cyst embolism; or exogenous substances such as cement embolism, talc embolism, catheter embolism, air embolism, and mercury embolism. NTPE may present with a wide spectrum of clinical symptoms ranging from asymptomatic cases to death. Clinical history and imaging findings may be sufficient for the diagnosis in most cases.

PE imaging in Pregnancy

M.-P. Revel; Paris/FR

Body

Lung scintigraphy and CT angiography (CTA) can both be performed in pregnant women with pulmonary embolism suspicion. The fetal radiation dose is considered to be negligible; it is slightly lower with CTA during the first and second trimester. The 2012 recommendation from the American Thoracic Society is to start with compression ultrasound in women with leg symptoms.
If negative or if there are no leg symptoms, chest-X ray should be performed. If normal, lung scintigraphy should be performed instead of CTA because the maternal breast radiation dose is much lower than for CTA. If inconclusive or if chest-X ray is abnormal, CTA must be performed with an adapted low kilovoltage protocol to minimize the radiation dose and maximize the pulmonary arterial enhancement. Deep inspiration favoring unopacified blood flow return from the inferior vena cava should be avoided. There is no risk of neonatal thyroid dysfunction in newborns who had a single exposure to iodinated contrast medium in utero. One advantage of CTA is the possibility to provide alternative diagnosis to pulmonary embolism.



Right lower lobe pulmonary embolism @ 30-weeks gestation

Take Home Points

1. Lung scintigraphy and CT angiography both represent negligible fetal radiation dose
2. Lung scintigraphy is recommended if chest -X ray is normal, to minimize maternal breast dose
3. An adapted protocol must be used to reduce CT angiography inconclusiveness, with reduced kilovoltage, high amount of contrast and shallow breathing instead of inspiratory breath hold

Ultra-lowdose CT instead of CXR?

F.A.A. Mohamed Hoesein; Utrecht/NL

Body

Conventional X-ray imaging of the chest serves as the first line imaging modality for thoracic disease because of it's readily availability, interpretability, and low costs and radiation dose. However, chest X-ray (CXR) has a low sensitivity for specific conditions such a detection of small lung cancers and a low sensitivity as specificity for pneumonia. An advance of chest CT above CXR is amongst others the advent of 3D information over 2D projections, however substantial higher radiation dose of chest CT remain an important issue of chest CT.

Recent advances in CT imaging and CT reconstruction protocols have led to dramatically reduced radiation doses approaching that of CXR. Although there is no strict definition of ultralow-dose CT, radiations doses approaching that of CXR are considered as ultra-low dose (~0.2 – 0.4 mSv). An important part of the dose reduction is because of the introduction of (advanced) iterative reconstruction (IR).

At the moment clinical indications for ultralow-dose CT are not set yet, but most research is performed on the role in lung cancer screening (nodule detection and follow-up, early diagnosis of pneumonia and detecting vascular calcifictions.Potential drawbacks of ultralow-dose CT are low spatial and contrast resolution impeding detection, characterization and follow-up of for instance pulmonary nodules. For detection of pneumonia a lower contrast resolution poses a lesser problem.

This talk will discuss the dose lowering techniques and the possible indications for ultra-low dose chest CT.

Take Home Points

Ultra-low dose CT approaches radiation dose of that of CXR. Ultra-low dose CT possible because of new reconstruction protocols (iterative reconstruction). No indications for ultra-low dose CT in daily clinical practice yet. There could be a role for ultra-low dose CT in early detection of pneumonia, lung cancer screening and detection of vascular calcifications.

Dose reduction strategies in cardiovascular diseases

M. Williams, Edinburgh/UK

Body

Cardiovascular imaging is responsible for an important proportion of the radiation dose due to medical imaging. This includes the use of computed tomography (CT), nuclear perfusion techniques and invasive coronary angiography. Radiation dose remains a major health care concern and it is essential to keep radiation dose „As Low As Reasonably Achievable". A variety of techniques are available to reduce radiation dose in cardiovascular imaging. This includes optimised patient selection and patient preparation, patient tailored imaging protocols and the application of hardware and software advances. For cardiac CT this includes the used of electrocardiogram gating, dose modulation, patient tailored tube voltage and current, and iterative and model based reconstruction algorithms. Local and national audit of radiation doses is important to optimise cardiovascular imaging and obtain diagnostic images at the lowest possible radiation dose.

The acute dyspneic patient

J. Biederer; Heidelberg/DE

Body

Patients with dyspnea suffer from acute or chronic experience of breathing discomfort. This is one of the most common and most challenging clinical symptoms in emergency medicine, since the range of differential diagnoses is wide and includes immediately life threatening conditions. 7 groups of diseases account for 90 % of acute dyspneic patients: Cardiac disease (acute heart failure, acute coronary syndrome), airway disease (asthma, COPD (exacerbation)), pulmonary disease (pneumonia, pneumothorax), pulmonary vascular disease (acute pulmonary embolism, PE), metabolic acidosis, anemia, neurologic disorder/hyperventilation. Up to 50% of the patients suffer from a combination of these conditions. In particular cardiovascular complications, airway obstruction, pneumothorax and PE require quick diagnosis and immediate intervention. Radiologic imaging plays a key role in the diagnostic workflow of acute dyspnea. Chest X-rays show foreign bodies in airway obstruction, lung hyperinflation in broncho-obstructive disease, interstitial attenuation patterns and edema in cardiac failure, infiltrates in pneumonia, pleural effusion and changes in heart size. Computed tomography would show pulmonary embolism, interstitial lung disease (fibrosis) and emphysema. Ultrasound could contribute to identify pleural effusion and pneumothorax. The aim of this case based discussion is to highlight the role of thoracic imaging in the diagnosis of dyspnea by means of clinical case presentations along with a short review of the range of differential diagnoses.

Take Home Points

- The range of differential diagnoses is wide and includes immediately life threatening conditions
- 7 groups of diseases account for 90 % of acute dyspneic patients: Cardiac disease (acute heart failure, acute coronary syndrome), airway disease (asthma, COPD (exacerbation)), pulmonary disease (pneumonia, pneumothorax), pulmonary vascular disease (acute pulmonary embolism, PE), metabolic acidosis, anemia, neurologic disorder/hyperventilation.
- Radiologic imaging plays a key role in the diagnostic workflow

The patient with endstage fibrosis

F. Demirkazik; Ankara/TR

Body

End- stage lung is a final stage in a lung disease, characterized by fibrosis, alveolar dissolution, bronchiolectasis and disruption of normal lung architecture. It is present in patients who have morphologic evidence of honeycombing, extensive cystic changes or conglomerate fibrosis.

There are many causes of end-stage fibrosis such as interstitial pneumonias (idiopathic or secondary to collagen vascular diseases); inorganic dust inhalation, like asbestosis and berylliosis; hypersensitivity pneumonia (HP); and sarcoidosis.

In end-stage lung disease, pulmonary fibrosis with lung destruction result in honeycombing which contains numerous cystic airspaces with thick fibrous walls and complete loss of acinar architecture. The cysts range in size from a few millimeters to several centimeters in diameter, have variable walls 1- 3 mm in thickness, and are lined by metaplastic bronchiolar epithelium. They are commonly clustered and share walls, predominantly subpleural and present in several layers. Usually traction bronchiectasis is present with honeycombing

Although, honeycombing is a nonspecific appearance, limiting the differential possibilities is often possible using high resolution computed tomography (HRCT) features. Dominant HRCT findings, their zonal distribution, relation of changes to bronchovascular structures, lung volume, presence of pleural thickening and enlarged lymph nodes help in narrowing the differential diagnosis.

Reticular interstitial thickening with subpleural- basal predominance and honeycombing indicates usual interstitial pneumonia (UIP) when some features inconsistent with UIP pattern are absent. Micronodules, air trapping, nonhoneycomb cysts, extensive ground glass opacities, consolidation, or a peribronchovascular-predominant distribution should lead to consideration of an alternative diagnosis. A UIP pattern on HRCT is highly accurate for the presence of UIP pattern on surgical lung biopsy. In the appropriate clinical settings and absence of other known causes of ILD (e.g., domestic and occupational environmental exposures, connective tissue disease, and drug toxicity) the presence of a UIP pattern on HRCT is sufficient for the diagnosis of IPF. In such cases surgical biopsy is not needed.

In patients with chronic HP, findings of fibrosis often show a middle lung or lower lung predominance or they are evenly detected throughout the upper, middle and lower lung zones. Relative sparing of the lung bases seen in majority of the HP cases may be useful in distinction of this disease from idiopathic pulmonary fibrosis. Honeycombing may be seen in 16% to 69% of the patients with chronic HP, it may have subpleural or peribronchovascular distribution.

End-stage fibrosis may also be detected in patients with severe sarcoidosis. Nodules, consolidation and ground glass opacity tend to decrease and in some patients fibrosis develop overtime. Early HRCT finding of fibrosis include distortion of fissures and posterior displacement of the main and upper lobe bronchi. Progressive fibrosis results in conglomeration of parahilar bronchi and and vessels associated with masses of fibrous tissue, typically marked in the upper lobes. Combination of conglomerate fibrotic masses and central bronchial distortion is characteristic of end- stage sarcoidosis. Honeycombing may be present in patients with sarcoidosis, but is less common than other fibrotic lung diseases such as IPF. It involves mainly the upper and middle lung zones, with relative sparing of the lung bases.

In this lecture, some cases with end- stage fibrosis will be presented and differential diagnosis of lung fibrosis and honeycombing will be discussed.

Take Home Points

Honeycombing is a nonspecific appearance, limiting the differential possibilities is often possible using high resolution computed tomography (HRCT) features.

Dominant HRCT findings, their zonal distribution, relation of changes to bronchovascular structures, lung volume, presence of pleural thickening and enlarged lymph nodes help in narrowing the differential diagnosis.

Smoking related interstitial lung disease

N. Sverzellati; Parma/IT

Body

Cigarette smoking is a recognized risk factor for development of interstitial lung disease (ILD). Smoking-related ILD includes respiratory bronchiolitis (RB), respiratory bronchiolitis-associated interstitial lung disease (RB-ILD), desquamative interstitial pneumonia (DIP) and Langerhans' cell histiocytosis. Furthermore, smoking is a well-defined risk factor for various subtypes of lung fibrosis. The radiological features of these disorders are reviewed, with particular emphasis on their overlap.

Take Home Points

RB and DIP represent a pathologic continuum although the HRCT findings can appear quite different.
HRCT features of pulmonary Langerhans cell histiocytosis evolve over time as the disease exists on a spectrum ranging from cellular to later fibrotic disease.
Fibrosis is a common finding in smoking-related ILD and can range from mild alveolar wall fibrosis to diffuse nonspecific interstitial pneumonia, and in some cases usual interstitial pneumonia.

Hypersensitivity pneumonitis – imaging update

A. Oikonomou; Toronto, ON/CA

Body

Hypersensitivity pneumonitis is a diffuse, granulomatous interstitial lung disease caused by exaggerated immunologic response to inhalation of a wide spectrum of organic and inorganic antigens, broadly classified into three groups: microbial agents, animal/insect proteins and low molecular weight chemicals. As simultaneous exposure to a host of antigens usually occurs and variable latency between exposure and disease onset can range from months to many years, identifying a specific causative agent can be almost impossible. The main pathophysiologic mechanism is based on immune complex formation and TÐcell hyperactivity.

Clinical presentation and clinical course, imaging and histologic findings may vary and mimic other diseases, and therefore the diagnosis usually depends on a constellation of findings rather than a single defining feature.

High resolution computed tomography (HRCT) is crucial in guiding the differential diagnosis. Suggestive imaging findings in the subacute phase include patchy or diffuse areas of ground glass opacity, centrilobular hazy micronodules and lobular areas of decreased opacity, accentuated on expiratory phase. In the chronic stage, increased septal thickening, unusual distribution of fibrosis such as vague bronchocentricity in the upper lobes may differentiate it form other fibrotic lung diseases such as UIP or NSIP.

Although in 50% of the cases the combination of clinical and HRCT findings is considered diagnostic of HP, in the remaining cases pathologic confirmation is necessary to establish the diagnosis. The typical triad of airwayÐcentered chronic interstitial inflammation, poorly circumscribed nonÐnecrotizing granulomas, and organizing pneumonia is characteristic for the diagnosis although not all three components are always present. The main differential diagnosis includes sarcoidosis, LIP, NSIP, UIP and respiratory bronchiolitis.

Correct diagnosis and management of HP requires a multidisciplinary approach as this may have critical therapeutic and prognostic implications.

Take Home Points

Hypersensitivity pneumonitis is a granulomatous interstitial lung disease caused by inhalation of organic and inorganic antigens.
It has a variable clinical and radiologic presentation and may mimic other interstitial lung diseases. HRCT has a crucial role in this setting.
Multidisciplinary approach is neceassary to establish the corrct diagnosis.

Combined pulmonary fibrosis and emphysema – one or two diagnoses?

J.A. Verschakelen, W. de Wever, J. Coolen, A. Dubbeldam; Leuven/BE

Body

Combined pulmonary fibrosis and emphysema (CPFE) is for the first time described in 2005 as a smoking related clinicoradiological syndrome which is characterized by upper lobe emphysema and lower lobe fibrosis, preserved lung volume and severely diminished capacity of gas exchange. In some patients the lower lobe fibrosis meets the criteria for usual interstitial pneumonia both on CT and lung biopsy, other patients may, however, combine emphysema with CT patterns of various interstitial pneumonias including nonspecific interstitial pneumonia (NSIP), respiratory bronchiolitis interstitial lung disease (RB-ILD) and even organizing pneumonia. CPFE has been proposed as a distinct syndrome although it is not clear whether it is indeed a real clinical entity reflecting unique individual susceptibilities or a coincidence of (smoking-related) diseases.

In addition, understanding CPFE has been complicated by the fact that in patients with similar clinical findings (normal spirometry and strongly reduced diffusion capacity) CT may show emphysema without obvious fibrotic changes. A hint may be that in these patients the emphysematous spaces may be very well demarcated and present as thick-walled cysts in which the thick wall corresponds with surrounding fibrotic lung. Terms used to describe this latter entity are: CPFE, respiratory bronchiolitis -interstitial lung disease with fibrosis, respiratory bronchiolitis with fibrosis (RBF) and airspace enlargement with fibrosis (AEF).

In this presentation current insights and imaging findings of these (smoking related) interstitial lung diseases combining obstructive and restrictive pulmonary function changes will be discussed.

Take Home Points

1. Combined pulmonary fibrosis and emphysema (CPFE) is a clinicoradiological syndrome that reflects lung inflammation, destruction, remodeling and repair from inhaled cigarette smoke.
2. CPFE causes obstructive and restrictive pulmonary function changes.
3. CPFE is characterized by the presence of emphysema and fibrosis.

Abstracts appear as submitted to the online submission system and have not been checked for correctness and completeness.

EDUCATIONAL POSTERS

P-0001 **Pictorial review of Tracheobronchial lesions on Multiple detector computed tomography (MDCT)**
S. Aggarwal, S. Tiwari, M.K. Kumaran; Nottingham/UK

P-0006 **18F-FDG PET/CT anatomic-metabolic guidance in CT-guided lung biopsies**
K. Stefanidis[1], T.M. Jacob[2], A.K. Witwit[3], D.T. Senbanjo[1], C.M. Burd[1], J. Moser[1], I. Vlahos[1]; [1]London/UK, [2]Surrey/UK, [3]Carshalton/UK

P-0009 **Pulmonary Vasculitis and Hemorrhage: Imaging and Pathologic Findings**
K.-N. Lee, E.J. Kang; Busan/KR

P-0016 **Imaging Issues on Lung cancer Treatment**
C.H. Park, K.-H. Do; Seoul/KR

P-0017 **MDCT of patients with advanced stage of Idiopathic Pulmonary Fibrosis**
R. Rubtsov[1], M.N.A. Vogel[1], J. Görres[1], M.T.A. Buzan[2], O. Weinheimer[1], K. Maier-Hein[1], M. Kreuter[1], H.U. Kauczor[1], F.J. Herth[1], C.P. Heussel[1]; [1]Heidelberg/DE, [2]Blaj/RO

P-0018 **Digital Tomosynthesis artifacts resulting from medical devices and respiratory conditions in ICU patients**
S. Sajja[1], S. Richard[2], M. Heath[2], F. Ursani[1], X. Wang[2], L. Vogelsang[2], N. Paul[1]; [1]Toronto, ON/CA, [2]Rochester/US

P-0022 **The post-lobectomy chest**
H.J. Park, J.M. Ko; Suwon/KR

P-0023 **Isolated unilateral pulmonary artery agenesis vs. isolated unilateral pulmonary vein atresia: Comparison of radiologic findings and differential diagnosis in adults**
E.-Y. Kang[1], J.W. Lee[1], H.S. Yong[1], K.Y. Lee[2], Y.W. Oh[1]; [1]Seoul/KR, [2]Ansan/KR

P-0027 **Extra pleural fat: clinical relevance of new observations**
A. Villanueva Marcos[1], A.M. Villanueva Campos[2], J. Etxano[3], M. Siddiqui[1], N.J. Screaton[4], E. Castañer González[5], J. Cáceres[6]; [1]Huntingdon/UK, [2]Vigo/ES, [3]Vitoria/ES, [4]Cambridge/UK, [5]Sabadell/ES, [6]Barcelona/ES

P-0031 **CT Findings of Cardiac and Pulmonary Artery Hydatid Disease; A Rare Cause of Nonthrombotic Pulmonary Embolism**
A. Öz, S.B. Barlas, S. Sabet, S. Server, I. Karalok, C. Akman, B. Akpinar; Đstanbul/TR

P-0032 **Imaging Pulmonary Aspergillus - Pearls, Polemics and Differential Diagnosis**
S. Davda, X.-Y. Kowa, E.K. Cheasty, Z. Aziz, S. Ellis, A. Balan; London/UK

P-0035 **Imaging of acute thoracic aortic disease: typical and atypical features and complications**
W. Mnari, M. Maatouk, B. Hmida, A. Zrig, J. Saad, M. Golli; Monastir/TN

P-0037 **Diagnosis of Pulmonary Alveolar Microlithiasis, Can Imaging Alone Help?**
D. Alhassan, S. Al Subaie, Z. Ahmed; Dhahran/SA

P-0039 **Dual-Energy CT in Pulmonary Hypertension**
M. Benegas Urteaga, I. Vollmer, T.M. de Caralt, R.J. Perea Palazon, M. Sanchez; Barcelona/ES

SCIENTIFIC POSTERS

P-0002 **Effects of Bismuth Breast Shielding on Dual-Energy Computed Tomography: An Experimental Phantom Study**
K.O. Choe, H.-J. Lee; Seoul/KR

P-0003 **Diagnostic confidence and complications of CT-guided core needle lung biopsy in solid and part-solid lesions**
H. Kang, S. Yun, E.M. Cho; Busan/KR

P-0004 **Fungal diseases mimicking primary lung cancer: a pictorial review**
R. do Amaral[1], C.S. Nin[1], V.V. Silveira de Souza[1], J. Zampieri[1], I.L. Giacomelli[1], E. Marchiori[2], A.S. Souza Jr.[3], K.L. Irion[4], G. Meirelles[5], B. Hochhegger[1]; [1]Porto Alegre/BR, [2]Rio de Janeiro/BR, [3]Sao Jose do Rio Preto/BR, [4]Salford/UK, [5]Sao Paulo/BR

P-0005 **Restrictions in Distinguishing Lung Disease in Đ1-Antitrypsin Deficiency from COPD**
P. Konietzke[1], B. Jobst[1], A. Opgenorth[1], K. Kenn[2], I. Jarosch[2], H.U. Kauczor[1], M.O. Wielpütz[1]; [1]Heidelberg/DE, [2]Schönau am Königssee/DE

P-0007 **Staging of non-small cell lung cancer using CT and integrated PET-CT**
L. Opoka, J. Kunikowska, Z. Podgajny; Warsaw/PL

P-0008 **Cheat off the thoracic MR features from breast MR: Key points to make a differential diagnosis**
E.Y. Kim[1], J.S. Sun[1], K.J. Park[1], E.S. Lee[2]; [1]Suwon/KR, [2]Seoul/KR

P-0010 **Systemic air embolisms after CT-guided transthoracic needle biopsy : A single-institution experience**
J.Y. Rho[1], Y.-J. Lee[2]; [1]Seongnam-si/KR, [2]Seoul/KR

P-0011 **High-resolution computed tomography findings of pulmonary tuberculosis infection in liver transplant patients**
R. Schuhmacher Neto[1], B. Hochhegger[1], I.L. Giacomelli[1], A.S. Souza Jr.[2], G. Meirelles[3], E. Marchiori[4], C.S. Nin[1], R. do Amaral[1], J. Zampieri[1], V. de Souza[1]; [1]Porto Alegre/BR, [2]Sao Jose do Rio Preto/BR, [3]Sao Paulo/BR, [4]Rio de Janeiro/BR

P-0012 **MR imaging of pulmonary embolism: diagnostic accuracy of unenhanced MR and influence in mortality rates**
R. Schuhmacher Neto[1], B. Hochhegger[1], I.L. Giacomelli[1], C.S. Nin[1], E. Marchiori[2], R. do Amaral[1], V. de Souza[1], G. Meirelles[3], A.S. Souza Jr.[4], J. Zampieri[1]; [1]Porto Alegre/BR, [2]Rio de Janeiro/BR, [3]Sao Paulo/BR, [4]Sao Jose do Rio Preto/BR

P-0013 **Evaluation of esophageal cancer with Prone position Chest CT**
S.-Y. Ki[1], Y.H. Kim[1], S.Y. Song[1], S.-M. Moon[1], S.-H. Kim[1], H.-J. Seon[1], E.S. Lee[2]; [1]Gwangju/KR, [2]Seoul/KR

P-0014 **Asbestos-related lung cancer: evaluation of radiological markers of asbestos exposure on thoracic CT**
J.S. Kim[1], Y.K. Kim[2]; [1]Goyang-si/KR, [2]Incheon/KR

P-0015 **Measurement of total lung capacity in patients with COPD: Comparison between obtained by computed tomography and by multi-breath nitrogen washout test**
S.-Y. Ki[1], Y.H. Kim[1], Y.-I. Kim[1], S.Y. Song[1], S.-M. Moon[1], S.-H. Kim[1], S.-C. Lim1, H.-J. Seon[1], E.S. Lee[2]; [1]Gwangju/KR, [2]Seoul/KR

P-0019 **Accurancy of clinical diagnosis of bronchiectatic phenotype in chronic obstructive pulmonary disease? Preliminary results from Czech Multicenter Register of COPD**
E. Kocova, V. Koblizek, P. Elias; Hradec Kralove/CZ

P-0020 **CT findings of pulmonary non-tuberculous mycobacterial infection : A case controlled comparison of the disease prognosis**
G.E. Yang; Chuncheon/KR

P-0021 **Computer Simulation Model Based on Thorax Configuration to Predict Its Aerodynamics in Young Patients with Primary Spontaneous Pneumothorax**
T.H. Kim, C.H. Park, M.D. Sung, H.W. Rho, S. Lee; Seoul/KR

P-0024 **Accuracy of measurement of pulmonary emphysema on computed tomography by automated assessment programs – comparison of automated measurement by Philips and Siemens**
J. Vanasek[1], E. Kocova[1], A. Ala'Aldeen[2]; [1]Hradec Kralove/CZ, [2]Watford/UK

P-0025 **The evaluation of clinical usefulness of continuous bed motion scanning in positron emission tomography in diagnosis of patients with lung cancer smaller than 20mm**
M. Endo, K. Asakura; Shizuoka/JP

P-0026 **Clinically amyopathic dermatomyositis (CADM) with rapidly progressive interstitial pneumonia (RPIP); analysis of its early CT features**
T. Fukuda, S. Misumi, K. Fukuda; Tokyo/JP

P-0028 **The value of pelvic CT as part of the routine CT staging in patients newly diagnosed with Lung Cancer**
A. Moldovan, J. Curtin; Norwich/UK

P-0029 **Correlation of Coronary Artery Calcium Score with Alberta Stroke Program Early CT Score in Acute Ischemic Stroke**
S.S. Shim, Y. Kim, H.I. Yun, Y.J. Ryu; Seoul/KR

P-0030 **Thoracic wall muscle volume on chest CT scan: Impact on severity of COPD**
S.S. Shim, Y. Kim, Y.J. Ryu; Seoul/KR

P-0033 **Primary intrapulmonary schwannoma**
B. Acu[1], M.A. Kaptan[1], C. Oztunali[2], R. Özkan[1], E. Dundar[1]; [1]Eskisehir/TR, [2]Ankara/TR

P-0034 **Differential Diagnosis of Endobronchial Lesions in Childhood with a Surprising Diagnosis: Langerhans' Cell Histiocytosis**
T. Agirlar Trabzonlu, Y. Anik, L. Trabzonlu; Kocaeli/TR

P-0036 **Percutaneous cutting needle biopsy and fine needle aspiration cytology for diffuse micronodular lung disease using the same coaxial guide needle under a C-arm cone-beam CT system**
C.-K. Park[1], Y. Lee[1], S. Lee[1], Y. Choi[2]; [1]Guri/KR, [2]Seoul/KR

P-0038 **The role of fetal MRI in planning for the ex-utero intrapartum (EXIT) procedure**
T.R. Semple, G. Kendall, M. Klusmann, P.D. Humphries; London/UK

Poster titles appear as submitted to the EPOS System and have not been checked for correctness and completeness.

POTENTIAL CONFLICT OF INTEREST DISCLOSURES

It is the policy of the European Society of Thoracic Imaging to ensure balance, independence, objectivity, and scientific rigour in the congress programme. Knowledge of possible relationships with sponsors of any kind is mandatory in order to reinforce the educational and scientific message and to relieve any suspicion of bias. Any potential conflict of interest involving the organising committee should be made known so that the audience may form their own judgements about the presentation with a full disclosure of the facts. It is for the audience to determine whether the presenter's external interest may reflect a possible bias in either the work carried out or the conclusions presented.

The ESTI 2016 Thoracic Summit president, Dr. Nevzat Karabulut, did not disclose any relationships.

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Poland

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Conference Language

The meeting will be held in English. No simultaneous translation will be offered.

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You are kindly asked to keep your badge visible on the congress grounds at all time.

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In case of any questions, kindly consult the ESTI registration desk, staff members will be happy to assist you.

Sunday, October 23	07:00 – 18:00
Monday, October 24	07:00 – 12:00

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- admittance to all scientific sessions
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- certificate of attendance
- coffee breaks

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Reduced member registrations are available to all active ESTI Members in 2016.

Junior Registration

Reduced junior registrations will be offered to juniors (young radiologists in training). Juniors have to send, fax or email a letter, written on official hospital letter paper and signed by the head of department, confirming their status as such within 5 working days after online registration. The age limit for a registration as a Junior is set at 35 years (incl. the age of 35).

Technician Registration

Registrations categorised as technician are limited to technicians without any academic title. Technicians have to send, fax or email a letter, written on official hospital letter paper and signed by the head of department, confirming their status as such within 5 working days after completed online registration.

Student Registration

Reduced student registrations will be offered to students without any academic title. Students have to send, fax or email a copy of their valid student picture ID together with a copy of their passport within 5 working days after online registration. The age limit for a registration as Student is set at 30 years (incl. the age of 30).

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We are happy to offer our Polish colleagues a reduced registration fee of € 100.00. Polish delegates have to send, fax or email a copy of their passport to the ESTI Office via office@myESTI.org.

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Name changes will be treated like the cancellation of the registration and a new registration of the other participant.

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The media center is located in the conference area. Trained staff will be available to assist you with the equipment. Speakers are reminded to check in at the media center at least two hours prior to their scheduled session. Please note that the media center should not be used to prepare your entire presentation and that due to the large number of speakers the workstations are only available for minor editing.

Guideline for Speakers

- You are kindly requested to submit your presentation two hours before your session starts at the latest (USB sticks are recommended).
- All presentations have to be uploaded to the conference IT-system. No personal computer will be accepted for projection.
- Please be at the lecture room at the latest five minutes prior to the start of your session and identify yourself to the moderator(s).
- Kindly observe your presentation time. Exceeding the time limit will not be accepted and the chairpersons are requested to stop presentations in such cases.

Future Meeting Desk

This area – located next to the registration desk – offers you an overview of future meetings in the field of radiology and related disciplines, from all over the world. Feel free to contribute flyers and posters to promote your own meetings and courses.

Coffee Breaks

Complimentary coffee and refreshments will be served during the official coffee breaks to all congress delegates.

Industry Symposium Attendance

Attendees of any ESTI 2016 industry symposium agree that their registration details will be forwarded to the company organising that symposium. This agreement may be cancelled at any time by writing to the ESTI Office.

Video/Audio

The participant acknowledges that lectures, presentations, speeches and other scientific events as well as the exhibition area and the reception area are filmed throughout the congress and that such film material is broadcasted by video and audio streaming and may also be used for other educational projects. The participation of delegates in such lectures, presentations, speeches and other scientific events as well as the presence of the participants in the exhibition area and the reception area therefore can be viewed at the ESTI website.

Recording

Video- or audio-recording of any sessions or presentations is not allowed without the speaker's/organiser's prior written permission.

Mobile Phones

Please do not forget to switch off your mobile phones before entering any of the lecture rooms.

WIFI

Free WIFI is available in meeting rooms and hotel rooms.

Awards

The following prices will be awarded on occasion of the ESTI 2016 Thoracic Summit:

Oral presentation
1x Magna Cum Laude
1x Cum Laude
1x Certificate of Merit

Poster presentation
1x Magna Cum Laude
1x Cum Laude
1x Certificate of Merit

Safety

The safety of all congress delegates and participants is of utmost importance to the ECR GmbH/ESTI. Security measures and precautions at the ECR GmbH/ESTI venue have been tightened to ensure maximum security for all attendees. Badges must be worn visibly on the congress grounds at all times. The ECR GmbH/ESTI reserves the right for staff to check participants' identification upon admission to and/or inside the congress venue. Participants may at any time be requested to present adequate proof of identity in the form of a passport, driver's license, national or military identification or student ID. Documents for the proof of identity must include a photograph and signature.

Disclaimer/Liability

ECR GmbH/ESTI cannot accept any liability for the acts of the suppliers to this meeting or the attendees' safety while travelling to or from the congress. All participants and accompanying persons are strongly advised to carry adequate travel and health insurance, as ECR GmbH/ESTI cannot accept liability for accidents or injuries that may occur. ECR GmbH/ESTI is not liable for personal injury and loss or damage of private property.

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LIFE FROM INSIDE

KRAKOW

Krakow is the second largest and one of the oldest cities in Poland. Situated on the Vistula River in the Lesser Poland region, the city dates back to the 7th century. Krakow has traditionally been one of the leading centres of Polish academic, cultural, and artistic life and is one of Poland's most important economic hubs.

SPONSOR

ESTI would like to thank its industry partner for its valuable support.

INDUSTRY SPONSORED SYMPOSIUM

Sunday, October 23, 2016

12:15-13:15 Industry Sponsored Symposium - Bracco

MEMBERSHIP INFORMATION

Benefits of your ESTI Membership

- Representation of thoracic imaging/radiology on a European level
- Personal ESTI account
- Access to full membership directory
- Reduced registration fees at annual meetings
- EPOS congress posters in your MyUserArea
- Recorded lectures in your MyUserArea
- Case of the month 2015 in your MyUserArea
- Subscription to the Journal of Thoracic Imaging
- Research grants
- ESOR fellowship programme
- ESOR scholarship programme
- Newsletter
- Certificate of membership

Membership Types & Fees

Full Member Radiologists (not in training) with special interest and special experience in thoracic imaging, active within Europe or with a European nationality.	EUR 60.00
Corresponding Member Radiologists (not in training) with special interest and special experience in thoracic imaging, outside of Europe or with a non European nationality.	EUR 60.00
Associate Member Scientists or physicians active in fields related to thoracic radiology.	EUR 60.00
Junior Member Residents or physicians still in training until the age of 36 (excl. the age of 36).	EUR 30.00
Senior Member Former active members, who wish to maintain their membership after retiring.	EUR 30.00
Full Member Reduced Radiologists (not in training) with special interest and special experience in thoracic imaging who are active members of a national radiological society and active within Europe or with a European nationality.	EUR 48.00
Junior Member Reduced Residents or physicians still in training until the age of 36 (excl. the age of 36) who are active members of a national radiological society and active within Europe or with a European nationality.	EUR 24.00

Required proof(s)

The following membership types require one or more proofs:

- Junior Member (letter of your head of department confirming your junior status)
- Full Member Reduced (letter of your national radiological society confirming your national society member status)
- Junior Member Reduced (letter of your head of department confirming your junior status and letter of your national radiological society confirming your national society member status)

Fourth World Congress

www.4wcti.org

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ESTI ESCR 2018

JOINT MEETING OF ESTI AND ESCR

MAY 24-26, 2018
GENEVA, SWITZERLAND

SAVE THE DATE!

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ESTI European Society of Thoracic Imaging

www.myesti.org

EUROPEAN SOCIETY CARDIAC RADIOLOGY ESCR

www.escr.org

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