

DynaCT as a new tool for onsite and realtime navigation in the lung

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DynaCT is a quite new mode of rotational fluoroscopy that provides CT like images with an angiographic system (Siemens AG Healthcare, Forchheim, Germany). This innovative imaging modality has found its way into a variety of interventional procedures. Image acquisition is achieved in approx. 8 seconds by a C-arm rotation of 220 degrees and an acquisition of 450 images. A volume set is reconstructed on workstation and is available for assessment in less than 1 minute in the interventional suite. This volume can then be further processed and overlaid on the fluoro image to guide procedures. Since the C-arm gantry is open DynaCT is well suited for hybrid interventions. Therefore established applications include cardiovascular therapy (electrophysiology, endovascular aortic repair and transcatheter aortic valve replacement), neurointerventions for cerebral aneurysms and interventional oncology.

Obtaining soft tissue information without administration of contrast medium is until now a less explored application field. We hereby describe how DynaCT could support the growing field of pneumology and its focus on diagnosing and treating early stage lung cancer. In that context our 2 DynaCT-suites themselves serve as a standard thoracal computertomography (TCT), a sophisticated fluoroscopy for all kinds of bronchological interventions and as an adjunct of 3-dimensional CT information projected into fluoroscopy images. Thereby real-time and onsite navigation without additional tools (like superdimension) are easily possible. This technique is regularly applied since autumn 2010 with very favourable results and could be part of a daily workflow for local ablation therapies in NSCLC like Intratumoral Chemotherapy or Radiofrequency Ablation.

Biography

Dr. Wolfgang Hohenforst-Schmidt works as a senior physician executive in the field of interventional pulmology including chest oncology, interventional cardiology and intensive care medicine since more than one decade. He is author of the national guideline committee on Pulmonary Hypertension (Dtsch Med Wochenschr 2010; 135: S102-115). In interventional pulmology he published new methods like perthoracal endopulmonary ultrasound to guide peripheral cancer biopsies (49th Congress of the German Society of Pulmology (DGP) 2008, Lübeck, P79) and reported for the first time surprising survival rates in NSCLC-patients following an interventional program that used controlled submaximal physical exercise as adjunct treatment to standard therapy (Medical Tribune 2010; 31/32: S16). On the 16th World Congress of Bronchology in Budapest he presented surprising preliminary data on survival of patients treated with ITC in combination with intravenous chemotherapy (16th WCB 2010, Budapest, A-0190).