#0124: A multimedia library of interstitial lung diseases at the University Hospitals of Geneva

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Summary

Affirmation: Disclosure of Interest
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Title: A multimedia library of interstitial lung diseases at the University Hospitals of Geneva

Body:

Purpose
The term interstitial lung disease (ILD) includes more than 150 diseases that affect the interstitial lung space. The diagnosis of these pathologies is established on common radiological exams, lung function tests, and characteristics of given clinical parameters. When required, high-resolution computed tomography (HRCT) of the chest is carried out to obtain an accurate visual assessment of the lung tissue. Since the interpretation of HRCT is often challenging with numerous differential diagnoses, we aim at developing computerised software and a database to assist the radiologist to the diagnosis workup of ILDs.

Methods and Materials
A raw list of patients that underwent a thorax HRCT within a stay in the pneumology service between 2003 and 2008 was retrospectively extracted from the data repository of the EHR. The diagnoses of each of the cases were retraced in the EHR based on the clinical history, reports and the clinical examinations. When the radiographic (HRCT) impression was consistent with the verified diagnosis, 3D regions of interest (ROI) showing pathological as well as healthy lung tissue were delineated in the HRCT images.

Results

So far, 60 cases with annotated HRCT image series and a set of 99 clinical parameters were entered into the database. 8 diagnoses were retained as occurring sufficiently often (see Table). 1168 ROIs showing 16 types of lung tissue were delineated in 72 images series.

Diagnostic	**Cases**
Fibrosis	24
Drug hypersensitivity pneumonitis	9
Miliary tuberculosis	7
PCP	4
BOOP	5
Extrinsic alveolar allergic	3
Sarcoïdosis	2
Acute Interstitial Pneumonia	6
TOTAL	**60**

Conclusion

The database contains 40% of the 150 projected cases. Computer tools have been implemented to browse the database enabling its use for teaching. The structured multimedia information allowed using the stored data to carry out research on an image-based diagnosis aid tool for ILDs.