L-2 Detection of Early Lung Cancer: From Nihilism to Autofluorescence Bronchoscopy

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The current smoking epidemic will lead to a further increase in the already alarming incidence of lung cancer worldwide. Even the best measures of prevention will not be able to significantly decrease this incidence over the coming decades. The long-term overall survival of lung cancer is dismal and has remained in the range of 10-13%; it depends very much on the stage at the time of diagnosis. Stage 1 cancers have a 5-yr survival of about 70% and early legions such as severe dysplasia and carcinoma in situ (CIS) can be cured in up to 95%. It is, therefore, mandatory to discover tumours at the earliest possible time. Screening for lung cancer is currently not recommended, but this position is based on trials using chest radiographs and sputum cytology techniques of the 1970s.

Today, several technical innovations have rekindled interest in screening of high-risk groups, which are mainly smokers. The development of automated sputum cytology has yielded superior results to previous cytological techniques. Imaging techniques have greatly evolved since then and peripheral lesions can be detected much earlier with the use of computed tomography (CT); trials using low-dose CT have been initiated and first reports seem to confirm its utility.

About 50% of lung cancers develop in the central airways and are thus visible endoscopically at a stage when they are radiographically (including CT scans) occult. The advent of fluorescence bronchoscopy in the early 1990ies has been shown to have a much better sensitivity than white-light bronchoscopy in detecting dysplasia and CIS lesions. Various systems of autofluorescence (AF) bronchoscopy have been developed and commercialised. The Storz D-Light system is the latest and technically most simple AF device. It is currently being tasted in a big European Multicenter study.

This overview will deal with the various topics mentioned above, but the emphasis will be on presentation of the Storz-D-Light system.