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Commentary

Herbert P. Wiedemann, M. D., Department of Pulmonary Disease, The Cleveland Clinic Foundation, comments: Endoscopic laser photoresection is an important new technique in the management of selected patients with central tracheobronchial obstruction. Laser therapy is most frequently used for the palliation of airway occlusion resulting from bronchogenic or metastatic carcinoma, although benign lesions are occasionally treated as well.

Not all airway obstructions are amenable to laser photoresection. The ideal lesion for such therapy is an exophytic endobronchial mass that compromises the lumen of an otherwise normal airway. In contrast, laser photoresection may not be efficacious when the airway is narrowed due to submucosal infiltration or compressed due to an extrinsic mass. Inspection of the tracheobronchial tree via flexible bronchoscopy is usually sufficient to evaluate whether laser photoresection is warranted.

As outlined by Ross and colleagues, computed tomography and magnetic resonance imaging may provide important ancillary information in patients being considered for endobronchial laser therapy. In order to minimize serious complications during photoresection, it is important to have prior knowledge regarding two anatomic considerations: the location of large central blood vessels that may lie in close approximation to the lesion, and the extent and direction of the airway lesions in those instances where the lumen is so narrow that the distal anatomy of the lesion cannot be visualized with the bronchoscope.

The authors think that magnetic resonance is generally superior to computed tomography for this purpose, since magnetic resonance produced better delineation of vascular structures and provided images in many planes, including the sagittal, coronal, and transverse. However, magnetic resonance images were more often nondiagnostic, largely due to motion artifact. This might be expected to be a frequent problem in dyspneic patients with critical degrees of upper airway compromise.

This study does not show that pre-laser imaging techniques reduce complications (there is no control group), nor does it conclusively demonstrate the advantage of one technique over the other. Only one serious complication of laser therapy occurred (death by exsanguination); neither computed tomography nor magnetic resonance showed the tumor invasion of the right pulmonary artery that was subsequently demonstrated at autopsy. The retrospective analysis of the magnetic resonance image showed "subtle irregularity of the posterior right pulmonary artery."

Although definitive conclusions are therefore not possible, the authors do provide a cogent and balanced discussion of the relative advantages of computed tomography and magnetic resonance in the evaluation of intrathoracic pathology in general and obstructing airway lesions in particular. Their comments and recommendations are of interest to physicians who use laser therapy, as well as to all others who evaluate diseases of the thorax.