Cryotherapy of Tracheobronchial Lesions

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Abstract

Central airways obstructions (CAO) are secondary to several malignant and non-malignant diseases such as primary lung cancer, central airways tumors (relatively rare, 600–700 cases per year) or benign tracheobronchial tumors. In addition, airways can present early-stage cancer like carcinoma in situ (CIS) or minimally invasive lesions.

KeyWords:CAO; Medicine, Respiratory.

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Introduction

Lung cancer, the most frequent cause of cancer related death, is responsible for more than 1 million deaths annually (1,2).

Lung cancer represents >17% of all new cases of cancer and 28% of all cancer deaths worldwide. At the time of diagnosis, >80% of patients are inoperable, resulting in a 5- year survival rate of 15% (3,4).

Approximately 30% of inoperable patients with carcinoma of the lung present with obstruction of the central airway, which can cause distressing symptoms of cough, breathlessness, hemoptysis and recurrent infections, and may lead to gradual asphyxiation (5,6).

Palliative reopening of the affected airways often alleviates symptoms. Where the possibility of surgery has been eliminated, radiotherapy and chemotherapy are the standard palliative treatments but have limited effectiveness in reopening obstructed airways, so, other palliative measures must be considered (7).

Interventional bronchoscopy, particularly therapeutic bronchoscopy, includes many diverse modalities, such as the Nd:YAG laser, electrocautery, argon plasma coagulation, photodynamic therapy, airway stenting, brachytherapy, and cryotherapy, which have advantages and disadvantages(7,8).

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Central airways obstructions (CAO) are secondary to several malignant and non-malignant diseases such as primary lung cancer, central airways tumors (relatively rare, 600–700 cases per year) or benign tracheobronchial tumors. In addition, airways can present early-stage cancer like carcinoma in situ (CIS) or minimally invasive lesions. In patients with this complication, morbidity is significant. If left untreated, death from suffocation is a frequent outcome. It is obvious that in cases with life threatening obstruction of airways there is an urgent need for rapid re-canalization. Bronchoscopic local treatment is an easy to perform procedure, less invasive than surgery and more immediate than radio/chemotherapy. It is quick and does not interfere with possible future surgical resection in case of treatment failure.

Indications for therapeutic endoscopic treatment are palliation of dyspnea and other obstructive symptoms in advanced cancerous lesions and cure of early lung cancer. Clinicians should select cases, evaluating tumor features (size, location) and patient characteristics (age, lung function impairment) to choose the most appropriate endoscopic technique. (9)

Foreign body aspiration (FBA), although more frequent in children, is a potentially life-threatening emergency that can occur at any age.Patients may be asymptomatic, have a choking event, cough attacks with inspiratory stridor,or symptoms may vary from trivial or chronic nonspecific symptoms (dyspnea,cough, sputum, wheezing) and mimic other lung diseases. Hence, in sub-acute and chronic respiratory infections, pulmonary abscesses, haemoptysis, asthmatiform syndrome, localized bronchiectasis or when a lung neoplasia is suspected FBA must be considered.(10)

When FBA is suspected, a rigid or flexible bronchoscopy can be performed, and debate remains which one is the optimal procedure. Many bronchologists consider rigid bronchoscopy as the treatment of choice, since it is extremely effective and has a low complication risk. In many units, prefer to performed a rigid bronchoscopy for FB extraction followed by a flexible bronchoscopy to ensure the absence of another FB lodged more distally. (11)

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