Management of Endobronchial Cancer Using Bronchoscopic Electrocautery

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From December 2004 until November 2005, 15 cases of endobronchial cancer presenting with 22 episodes of mechanical obstruction of the airway, difficulty in breathing, hemoptysis, severe coughing, obstructive pneumonia and identified recurrent atelectasis of the lungs. The cancer was removed rapidly, effectively and without complication by a technique of fiberoptic bronchoscopic electrocautery.

Keyword: *Endobronchial cancer, Bronchoscopic electrocautery, Hemoptysis*

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Currently, a number of major surgical procedures have been replaced by minor fiberoptic maneuverus. In the field of airway carcinoma, the new technique of fiberoptic bronchoscopic electrocautery offers palliative treatment for inoperable airway carcinoma.

Material and Method

From December 2004 to November 2005, 15 cases of patients with lung cancer presented with 22 episodes of mechanical airway obstruction, hemoptysis, severe coughing, and obstructive pneumonia and identified recurrent atelectasis of the lungs. Fiberoptic bronchoscopic electrocautery using coagulation electrode CD-6C-1, or hot biopsy forceps FD-6C-1/7C-1, or electrosurgical snare SD-7C-1/18C-1 was used. The generated electrical current for electrosurgery was provided by the Electrosurgical unit Olympus P SD-30.

Results

Fifteen patients presented with 15 episodes of airway obstruction, 5 patients of hemoptysis and 2 cases of severe coughing. Each patient had identified bronchogenic cancer as proven by pathology (Table 1).

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Among the cases of airway obstruction, 2 of them had tracheal obstruction. The first case had a huge endotrachial mass, size 2 cm., situated at the carina, which was removed completely. Chemotherapy was subsequently administered. Two months later, the patient developed right upper lobe atelectasis caused by an endobronchial tumor. Debulking of the tumor was effectively achieved. One month later, the patient developed multiple nodules in both the right and left bronchi, which were also destroyed by the authors' technique.

The other patient suffered from esophageal cancer, which had invaded 80% of the lumen of the trachea. Debulking of the tumor was done successfully, followed by the insertion of a tracheal stent, allowing the patient to breathe more easily.

The rest of the patients were treated with the electrocautery technique, which provided significant help in removing the endobronchial mass in the right and left bronchi.

Five patients presenting with hemoptysis were quite well controlled by this method. Photocoagulation of the tumor also offered significant results in managing severe coughing in one of the two patients, who had not been able to sleep for over 3 months, due to the coughing episodes. The other one was lost to follow up.

Table 1. Demonstrated gender, age, type of cancer, clinical symptoms and site of tumor

No	Gender	Age	Cell type	Clinical Symptoms	Site	% obstruction
1	M	69	squamous cell	Airway obstruction	trachea	90
2	M	52	squamous cell	Airway obstruction	trachea, right upper and left upper bronchus	75, 25, 50
3	M	72	squamous cell	Airway obstruction	right main bronchus	25
4	M	70	squamous cell	Airway obstruction	right lower bronchus	25
5	F	73	adenocarcinoma	Obstructive pneumonia	right lowerbronchus	50
6	F	82	adenocarcinoma	Obstructive pneumonia	left upper bronchus	50
7	M	65	adenocarcinoma	Airway obstruction	right main bronchus	25
8	M	69	adenocarcinoma	Airway obstruction	right main bronchus	25
9	F	72	adenocarcinoma	severe cough	left upper bronchus	50
10	F	68	adenocarcinoma	severe cough	left upper bronchus	50
11	M	54	squamous cell	hemoptysis	left upper bronchus	50
12	M	62	squamous cell	hemoptysis	right upper bronchus	50
13	M	49	small cell	hemoptysis	right lower bronchus	25
14	F	58	adenocarcinoma	hemoptysis	right lower bronchus	25
15	F	55	adenocarcinoma	hemoptysis	right lower bronchus	25

Fig. 1 Demonstrated right upper lobe endobronchial carcinoma pre and post bronchoscopic electrocautery

Discussion

This new technique offers safer procedures especially in executing biopsies in highly vascularized tumors, helps the bronchoscopists control the endobronchial bleeding and removes the endobronchial lesions effectively in a very short period of time in terms of seconds to minutes without any complications, so far. In addition, the technique produces less smoke, leading to a decreased risk of suffocation, carbon monoxide intoxication and provides better surgical views[1,2].

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การตัดมะเร็งหลอดลมโดยใช้กล้องส่องหลอดลมตัวตัดและจี้โดยกระแสไฟ

สว่าง แสงหิรัญวัฒนา, ชนะ บัวขำ, นฤมล มาสกุล, รังสิมา แสงหิรัญวัฒนา

ระหว่างเดือน ธันวาคม พ.ศ. 2547 ถึง พฤศจิกายน พ.ศ. 2548 ได้ใช้เทคนิคการส่องกล้องหลอดลม ร่วมกับการใช้ตัวตัด และจี้มะเร็ง โดยใช้กระแสไฟ สามารถช่วยผู้ป่วย 15 ราย แก้ปัญหาการอุดตันของหลอดลมจากมะเร็งปอด ภาวะเลือด ออกในหลอดลม และอาการไอรุนแรงได้อย่างได้ผลดี รวดเร็ว และปลอดภัย