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Lazer Rekanalizasyon Tedavisi Uygulanan Trakeobronşiyal Timoma: Olgu sunumu

TRACHEOBRONCHIAL TIMOMA TREATED BY LASER RECANALIZATION THERAPY: CASE REPORT

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Özet

Endobronşiyal lazer tedavisi güvenilir ve iyi tolere edilebilir bir yöntem olup gerektiğinde tekrarlanabilir. Elli yaşındaki erkek hasta üç yıl önce endobronşiyal timomaya bağlı şiddetli nefes darlığı ve hemoptizi ile başvurdu. Hastanın sol ana bronşunu tamamen oblitere eden tümöral lezyonu "Nd-YAG" lazer ile rezeke edilerek sol ana bronşa silikon stent yerleştirildi. Takip eden iki yıl içerisinde sol ana bronş ve distal trakeada yeniden tümör gelişimi nedeniyle altı kez daha lazer rezeksiyonu uygulandı. Sol akciğerinde iki yılda total atelektazi gelişen hasta tek akciğer ile sorunsuz olarak halen hayattadır. Akciğer malignitelerinde endoskopik lazer rezeksiyonu diğer metodlara kıyasla hızlı, rahat tolere edilebilen ve tekrarlanabilir palyatif bir tedavi yöntemidir

Anahtar kelimeler: Lazer rezeksiyon, terapötik bronkoskopi, endobronşiyal timoma, trakea

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Summary

Endobronchial laser therapy is generally safe and well tolerated. Fifty year-old male patient was referred to our clinic because of severe dyspnea and massive hemoptysis related to endobronchial thymoma three years ago. Rigid bronchoscopy was performed under general anesthesia, Nd-YAG laser resection and silicone stent insertion were applied to an endobronchial tumoral mass that was found in his bronchoscopy as almost completely obliterating the left main bronchus. In the next two years the same procedure was repeated six times to prevent distal tracheal obliteration with endoluminal tumoral mass. Although the left lung has been totally collapsed at the and of the second year the patient is still alive. Endoscopic laser resection of lung malignancies is rapid, effective, repeatable, and complementary to other treatments.

Keywords: Laser resection, therapeutic bronchoscopy, endobronchial thymoma, trachea

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Introduction

Bronchology has a background of approximately a century. During the next 80 years its indication was just limited to foreign body removal. Since 1980's, indications of therapeutic bronchoscopy have been expanded owing to widespread use of laser systems in medical and surgical fields [1]. Today, bronchoscopic laser therapy is applied in many benign and malignant tracheobronchial stenoses. Endobronchial laser therapy is rapid, safe, and complementary to other treatments. It is well tolerated and repeatable as well. Endobronchial laser recanalization provides effective palliation in malignant diseases when surgical therapy can not be performed [2-4]. In benign tracheobronchial stenoses it is curative method that obviates the need of surgical operation. In tracheobronchial stenoses it should be accepted as the method of choice when mortality and morbidity risks of surgical operations are considered. Especially in recurrent obstructive lesions of central airways since surgical procedures are not repeatable. For this reason, therapeutic bronchoscopic methods are the only treatment modalities [5].

In this article, we discussed a 50 year-old male patient with a recurrent endobronchial thymoma after surgical operation, who underwent endobronchial laser recanalization seven times in a three years period, and the results of laser treatment was evaluated.

Case Report

A 50-year-old, nonsmoker, male patient was referred to our clinic three years ago upon developing severe dyspnea, massive hemoptysis and respiratory insufficiency. In his medical history

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he had thoracotomy for thymoma resection five years ago. Rigid bronchoscopy was performed under general anesthesia. An endobronchial tumoral mass almost totally obliterating the left main bronchus till carina level was recanalized with "Nd-YAG" laser and a silicone stent was implanted (Figure 1 and 2). After the operation patient was free of his symptoms (dyspnea, hemoptysis). But eight months later, he began to suffer from the complaint of sudden onset of dyspnea. During the fiberoptic bronchoscopic evaluation tumoral recurrence in the left main bronchus and stent migration to the trachea were detected. A rigid bronchoscopy was repeated under general anesthesia, the stent was removed and the bleeding control was achieved. "Nd-YAG" laser recanalization was performed to the tumoral mass in the left main bronchus but the obliteration distal to the tumor could not be managed. In two years, the same procedure was repeated five times due to the tumoral mass almost totally obliterating the distal trachea and leading to respiratory insufficiency. Although the tumoral mass was resected the bronchial lumen could not be reopened due to total collapse of the left lung. (Figure 3).

Figure 1. Thorax CT sections of the patient a)duirng first application; b)reconstructed CT; c)post-operative.

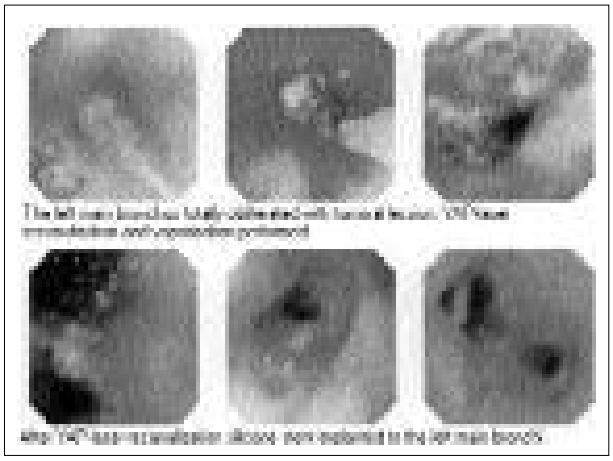

Figure 2. Endoscopic views of the patient.

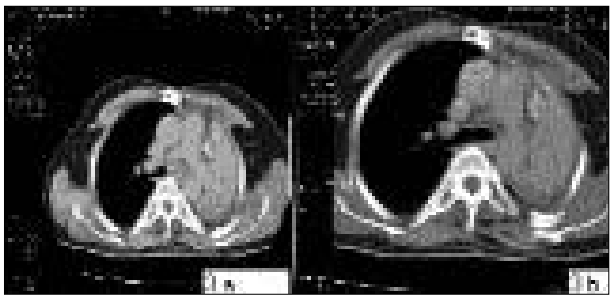

Figure 3. Thorax CT sections of the patient end stage.

Discussion

Endobronchial laser therapy is the most widely used method in interventional pulmonology. Laser beam has three main characteristics, i.e. "monochoromocity", "coherence" and "collimination". These features of laser beam can include tissue vaporization, coagulation, hemostasis and necrosis. Among the therapeutic bronchoscopic methods, primary reason why laser therapy has become the most widely used intervention is that it could provide rapid palliation for symptoms due to tracheobronchial obstruction. Since it is also safe, effective and repeatable, it is superior to the other endobronchial methods [2-4]. Laser recanalization is found to be effective for palliation of endoluminal tumors. It is a curative therapy for benign tracheobronchial lesions, as well [2-5].

Endobronchial laser therapy is usually preferably performed with rigid bronchoscope. Risk of asphyxia due to possible bleeding, secretions or smoke during the procedure should be prevented. This can be provided by continuos suction that maintains a airway patency. To prevent hemorrhage it is important to coagulate tumoral mass. Mechanical resection is applied by "core out" techniques. Then, base of the tumor is vaporized by laser [6]. When performed by using the appropriate technique, bronchoscopic laser therapy provides central airway patency and thus symptomatic and functional improvement. In a series including a total of 2008 cases with malignant tracheobronchial obstruction, Nd-YAG laser presented a success rate of 93% [7]. Hemorrhage was observed in 19 and pneumothorax in 8 patients, but no deaths was reported. Endoscopic laser therapies are advantageous compared to other endobronchial therapies since they are effective, easy to perform, safe and repeatable.

Bronchoscopic laser therapy induces dramatic improvement in acute respiratory insufficiency due to central airway obstruction. It also provides weaning from mechanical ventilators and decreases the cost of treatment. Laser therapy is proposed as an expensive method. But, when applied during early stages of disease, its economical availability can be enhanced. Hospital costs of emergency care units are reported as much as 3.5 times more expensive than laser therapy [8].

In this case, endobronchial laser therapy was performed six times during a three year period. The patient tolerated the method well and no complication was observed. After surgical resection respiratory insufficiency developed due to tumor recurrence. Despite serious recurrences palliative treatment provided acceptable life quality and maintained survival. In malignancies with endoluminal tracheobronchial obliteration, laser recanalization can be repeatedly performed thus localized disease could be controlled and asyphyxia could be prevented. In conclusion, this therapeutic modality prolongs survival and improves life quality in such patients.

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