

Benign endobronchial tumours treated by Neodymium-YAG laser

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ABSTRACT: We present two patients with benign endobronchial tumours: polypi and a chondroma. Both were treated by Neodymium-YAG laser photoresection. There have been no signs of recurrence in the four years since treatment. Endobronchial resection by Neodymium-YAG laser is an effective treatment for benign endobronchial tumours.

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Benign tumours of the lung are uncommon and constitute less than 10% of the total number of lung tumours. Histological diagnoses are for example fibroma, lipoma, chondroma and papilloma [1, 2]. Bronchial adenomas, mostly of the carcinoid type, often behave as benign tumours [3]. Presenting signs and symptoms depend on the site and extension of the tumour. They are often indistinguishable from malignant tumours. Patients may suffer from cough, dyspnoea, haemoptysis, wheezing or recurrent infections; sometimes atelectases are seen.

Surgical resection is the chosen treatment. It implies a certain morbidity and mortality and may result in loss of large parts of normal lung tissue. Intraluminal resection should be considered, as an alternative to surgery, for tumours located in the main and lobar bronchi. In this paper we describe two patients with a benign endobronchial tumour cured by Neodymium-YAG laser photoresection.

Case reports

Case 1

A 50 year-old male with stable chronic obstructive lung disease deteriorated during the last three months of 1982. Intensification of bronchodilator therapy was unsuccessful. His only new complaint was a strange feeling in the throat. Physical examination revealed diminished breath sounds on the left side. A roentgenogram and fluoroscopy of the chest were normal. During bronchoscopy two polypi were seen in the left main bronchus, almost completely obstructing the lumen. Biopsies showed no signs of malignancy. Surgical resection was considered impossible due to a severely impaired lung function. Photoresection by Neodymium-YAG laser was therefore attempted. During general anaesthesia rigid

bronchoscopy was performed. The polypi were coagulated (50 Watt, 5") and subsequently removed with biopsy forceps without much bleeding. In the following years there have been no signs of recurrence clinically or during re-examination by bronchoscopy.

Case 2

In December 1983 a 67 year-old male was hospitalized because of progressive dyspnoea, right-sided chest pain and fever up to 39.4°C. There were diminished breath sounds over the lower part of the right lung. A chest X-ray showed consolidation in the same area and a pleural effusion. A bronchoscopy was performed. The ostium of the right lower lobe was obstructed by a tumour (fig. 1). Histological examination revealed a chondroma. During general anaesthesia the major part of the tumour could be removed by a loop and the remnant was coagulated by Neodymium-YAG laser (50 Watt, 6"). Two weeks later the coagulated tissue was removed by forceps. Until now no relapse has occurred during follow-up of the patient by clinical examination and bronchoscopy (fig. 2).

Discussion

The principle of light amplification by stimulated emission of radiation (laser) has been known for over 25 years and is now widely applied in medicine. The Neodymium-YAG laser can be transmitted through a flexible light guide and is therefore useful for endobronchial resection of obstructing tumours [4]. Important preconditions are a good view and the absence of compression from outside. The Neodymium-YAG laser emits light with a wave length of 1060 nm. There is a low absorption in the tissue, resulting

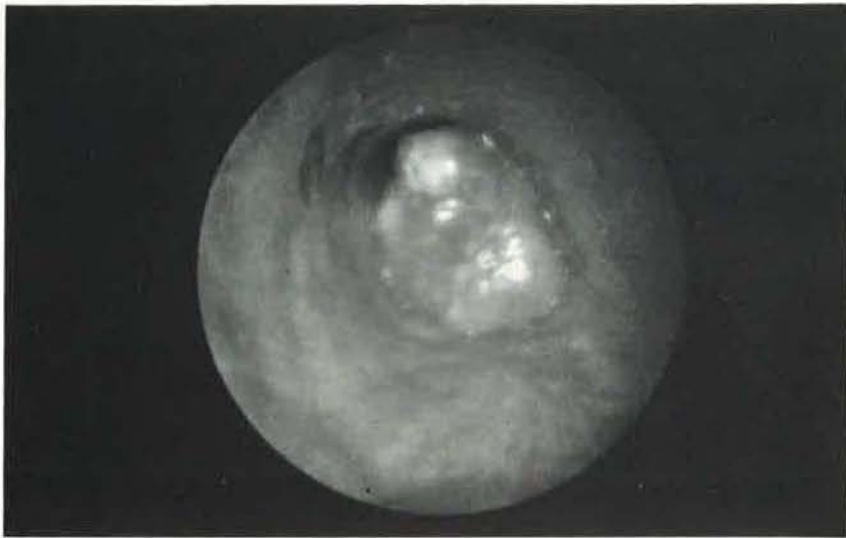


Fig. 1. Orifice of the right lower lobe obstructed by tumour.



Fig. 2. Orifice of the right lower lobe after treatment showing no relapse.

in gradual heating followed by deep coagulation. This implies a low risk of bleeding. In our clinic we prefer rigid bronchoscopy. This gives the opportunity to remove larger parts of the tumour mechanically and facilitates adequate suction of secretions and blood within a few seconds [5].

This report describes two patients with benign endobronchial tumours that were successfully treated by deobstruction using rigid bronchoscopy with application of Neodymium-YAG laser. Similar results have been reported by others [6-8]. Long-term follow-up results are still unknown. It remains uncertain whether complete resection has been achieved. The long disease-free period of our two patients is, however, encouraging.

In patients with a benign endobronchial tumour and a high surgical risk, due to a diminished pulmonary

and/or cardiac function, endobronchial resection by Neodymium-YAG laser should be considered as an effective alternative form of treatment.

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RÉSUMÉ: Nous présentons deux observations de tumeurs bénignes endobronchiques: des polypes et un chondrome. Toutes deux ont été traitées par photoréssection au laser Neodymium-YAG. Il n'y a pas de signe de rechute au cours des 4 années suivantes. La résection endobronchique au laser Neodymium-YAG est un traitement efficace pour les tumeurs bénignes endobronchiques.