CASE REPORTS

BRONCHOPLASTY FOR A TYPICAL CARCINOID: AN UNUSUAL CHOICE FOR AN UNUSUAL PATIENT

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Abstract

Primary carcinoid tumours of the lung are rare tumours and when typical are associated with a benign behaviour and should be classified as low-grade neuroendocrine tumour/carcinoma.

A 67-year old HIV-positive female was admitted due to a typical carcinoid tumour on the distal third of the main left bronchus, occupying two thirds of the lumen.

Given she was HIV positive, had a moderately compromised lung function and in order to minimize surgical events, postoperative complications and to maximize postoperative lung function, the authors opted for a bronchoplasty using a patch.

The surgery was uneventful and as the resected area of the bronchus was small, patency was assured and the distortion was minimal.

During extubation, resistance was felt upon trying to the remove the bronchial blocker. After performing bronchoscopy it was seen that the loop at the end of the bronchial blocker was caught in the patch suture. Fortunately it was possible to cut the loop, freeing the blocker and avoiding a redo surgery.

There were several possible options, ranging from left pneumonectomy, superior left lobe sleeve lobectomy, resection of the left main bronchus with a Y bronchial reconstruction or a bronchoplasty using a patch.

The chosen technique has several advantages: From an oncological standpoint a typical carcinoid is indolent and needs only a clear resection margin. From a functional standpoint lung tissue resection was prevented. From a surgical standpoint it is less challenging, easy to perform and less prone to surgical events, essential considering the particular case of an AIDS patient.

INTRODUCTION

Primary carcinoid tumours of the lung are rare tumours which comprise approximately 0.5 to 5% of all lung malignancies in adults and roughly 20 to 30% of all carcinoid tumours.[1] Typical carcinoid tumours are associated with a fairly benign behaviour and should be classified as low-grade neuroendocrine tumour/carcinoma (G1)[2]. Treatment of choice for lung carcinoids is surgical resection, but there is still debate about the type of surgery, especially for peripheral tumours[3]. Surgery in HIV patients is associated with more postoperative complications, rapid progression, disease recurrence and poorer postoperative survival. Furthermore these patients have a higher risk of lung cancer and respiratory infections and therefore the rationale for lung sparing techniques is reinforced. Preoperative optimization and/or control of the infection improves surgical outcomes. [4]

CASE REPORT

A 67-year old HIV-positive female was admitted to a tertiary hospital with the diagnosis of pneumonia. A CT scan confirmed the diagnosis showing a "consolidation area in the right lower lung". Bronchoscopy revealed a spherical tumoral lesion in the distal third of the left main bronchus pedicled in the membranous part, occupying two thirds of the lumen (figure 1). Bronchoalveolar lavage showed an infection by Pneumocistis jiroveci and cytomegalovirus. As such patient had AIDS and started anti-infective agents. Histology of the tumour was suggestive of typical neuroendocrine carcinoid tumour (G1).

After resolution of the infection, the patient was referred to the authors' hospital.

PET DOTANOC revealed a single lesion in the left main bronchus (figure 2).

Patient was submitted to surgery with left lung exclusion by using a single lumen orotracheal tube and a bronchial blocker (ARNDT-COOK), as due to the patient's small size it wasn't possible to direct a double lumen orotracheal tube towards the main bronchus.

A muscle sparing left thoracotomy was performed. After isolation of the left main bronchus a patch of the membranous part of the left main bronchus with 14x10 mm was resected, which corresponded to the tumour. The resection was guided with bronchoscopy using its image and light as markers. Extemporaneous analysis of resection margins was performed, and as they were free of tumour,

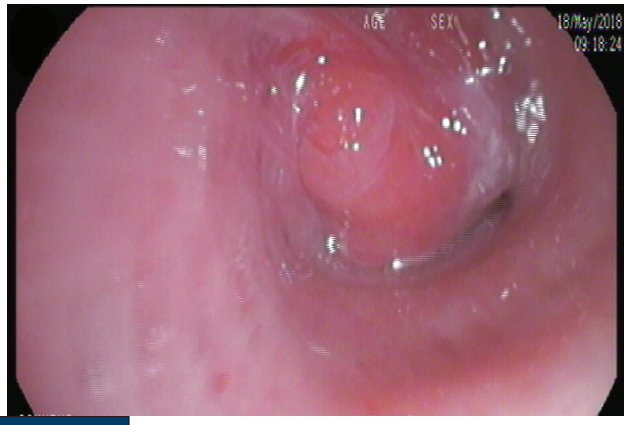

Figure 1 *Preoperative bronchoscopy showing a spherical tumoral lesion in the distal third of the main left bronchus pedicled in the membranous part, occupying two thirds of the lumen*

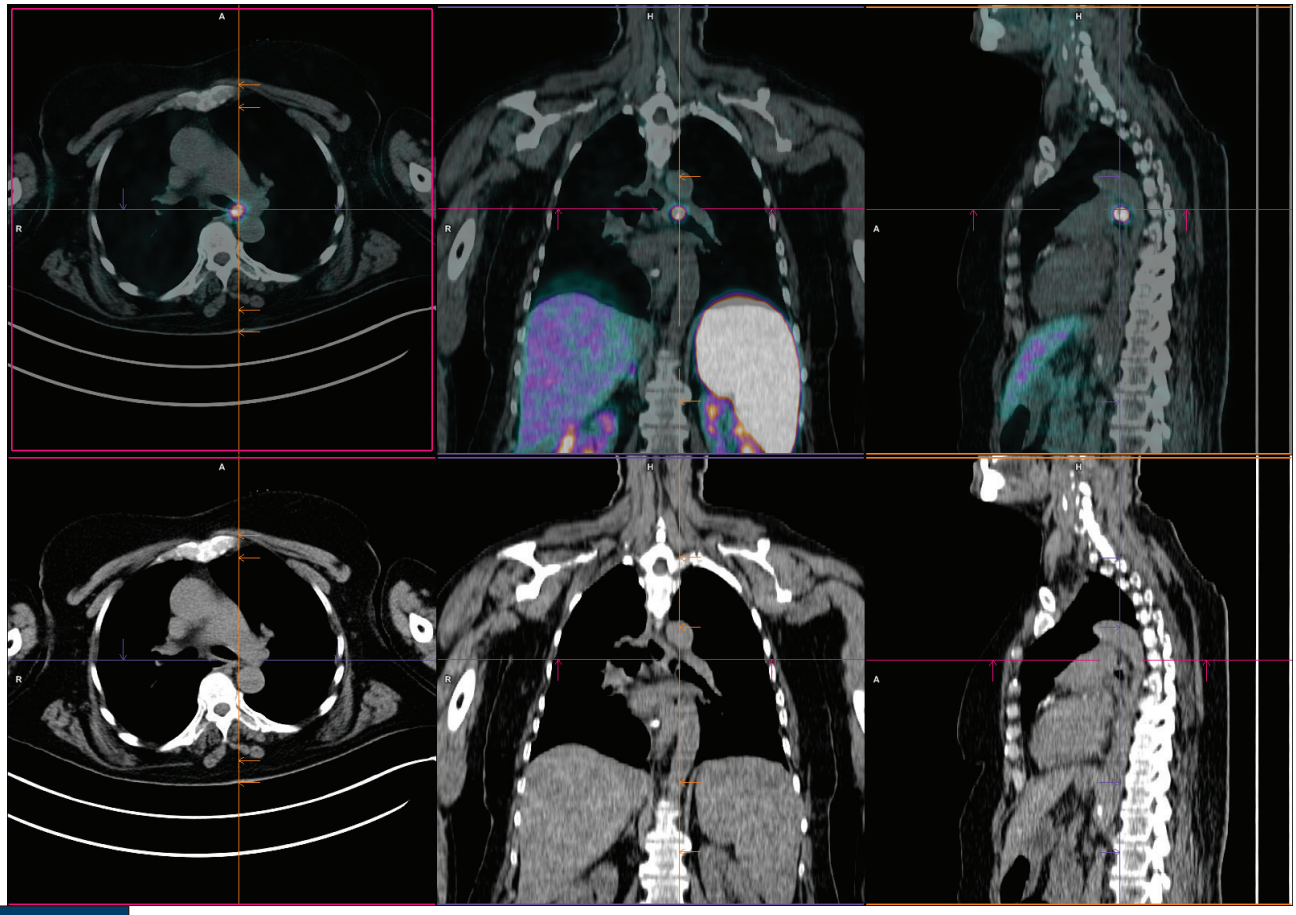

Figure 2 *PET-DOTANOC showing a single lesion in the left main bronchus.*

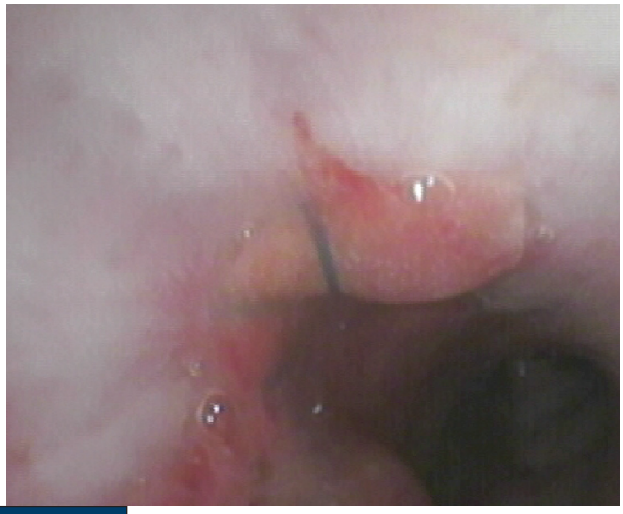

Figure 3 *Follow-up bronchoscopy three months after surgery showing left main bronchial patency.*

the bronchial blocker was pulled back and the left main bronchus was reconstructed with a duramater patch (DuraGen Plus®) using a parachute technique with a single continuous suture of Prolene™ 4/0. The surgery ended uneventfully.

During extubation, resistance was felt upon trying to the remove the bronchial blocker. After performing bronchoscopy it was seen that the loop at the end of the bronchial blocker was caught in the patch suture. With the help of a 2.8mm endoscopic scissors, the pneumologist cut the loop, freeing the blocker. The patient was extubated and awakened with no further incidents.

The postoperative period was uneventful and the patient was discharged on the 7th day.

Bronchoscopy before discharge showed the dura patch in the medial wall of the left main bronchus with no signs of dehiscence.

Follow-up at the first, third and every three months after that with bronchoscopy and CT scan, showed left main bronchial patency, no evidence of suture dehiscence and no signs of recurrence.

At this time the patient has 2 years of follow-up and is clinically well.

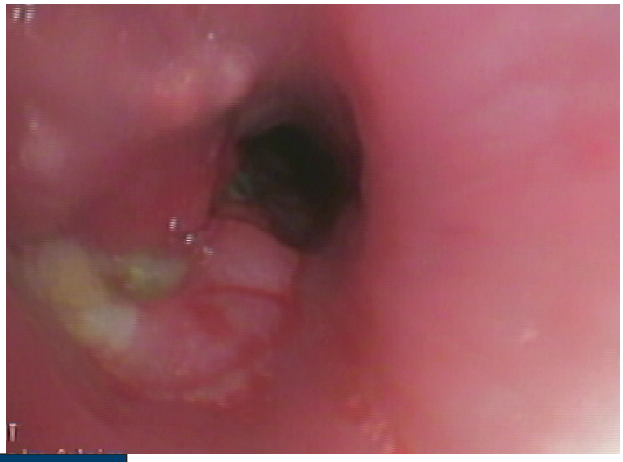

Figure 4 *Follow-up bronchoscopy one year after surgery showing left main bronchial patency, no evidence of suture dehiscence and no signs of recurrence.*

DISCUSSION

In the reported case, there were several possible options, ranging from left pneumonectomy, superior left lobe sleeve lobectomy, resection of the left main bronchus with a Y bronchial reconstruction (as the tumour was located on the opposite wall to the left superior bronchus) or a bronchoplasty using a patch.

The authors opted for this last technique for several reasons: from an oncological standpoint a typical carcinoid is an indolent, with a very good long term survival, and doesn't require an extensive resection, needing only a clear resection margin.[2,5] From a functional standpoint lung tissue resection was prevented. As there was a minimal left main bronchial area resected, patency was assured and there was minimal risk of distortion. On the other hand, from a surgical standpoint it is less challenging, easy to perform and less prone to surgical events. This is of greater importance in patients with AIDS, minimizing surgical complications and reducing postoperative morbidity.[4]

Despite this, an unforeseen and extremely rare complication occurred. Facing this event, an endoscopic resolution was the first option, as it was less harmful and less invasive. If it failed, removal of the patch with redo surgery was warranted with all the risks associated.

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