

Dynamic™ (Y) Stent for Malignant Carinal and Mainstem Bronchi Obstruction

technique spotlight



Moishe Liberman MD, PhD

Director, CHUM Endoscopic Tracheobronchial and Oesophageal Center (CETOC)
Division of Thoracic Surgery
University of Montreal
Montreal, Quebec, Canada

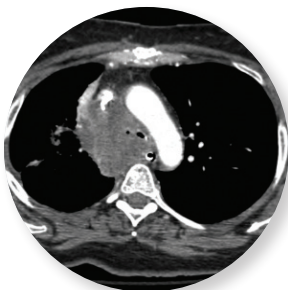


Figure 1

Pre-procedural axial CT scan demonstrating almost complete bilateral mainstem bronchi obstruction

Patient History

59 year old female with newly diagnosed non small cell lung cancer presented with severe respiratory distress and stridor to an outside hospital. She was intubated for respiratory decompensation and transferred for endoscopic airway palliation with the aim of early extubation. Pre-procedural CT scan showed near complete carinal obstruction and severe narrowing of both mainstem bronchi with pinpoint openings (Figure 1).

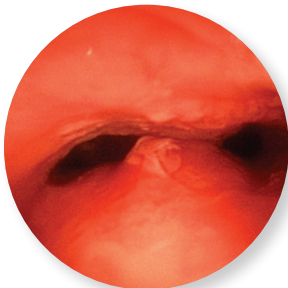


Figure 2

Carinal and bilateral mainstem bronchus obstruction. Photo taken on positive pressure jet ventilation to show lumen

Procedure

The patient was transported to the interventional endoscopy suite and underwent extubation under general anesthesia and rigid tracheo-bronchoscopy (Figure 2). The carina and left mainstem bronchus were completely obstructed secondary to extrinsic compression from metastatic mediastinal lymph nodes. The right mainstem bronchus was obstructed with endoluminal tumor. The right mainstem bronchus tumor was debulked using cautery, argon and a microdebrider. A 13mm Dynamic (Y) Stent was inserted and positioned endoscopically (Figure 3). The patient was re-intubated above the stent and returned to the intensive care unit.

Post Procedure

The patient underwent superior vena cava stenting for decompression of vena cava syndrome on the following day and was weaned from the ventilator over 2 days. She was extubated on day 3 and started mediastinal radiation on day 5. The patient was discharged from the hospital to home on day 7 without oxygen.

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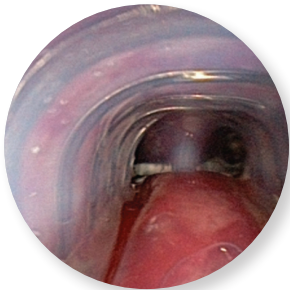


Figure 3
Dynamic (Y) Stent
post insertion

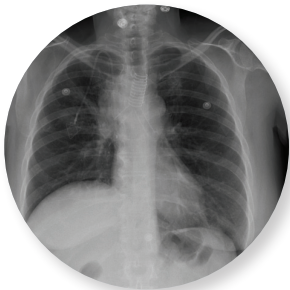


Figure 4
Pre-discharge X-Ray
demonstrating
Dynamic (Y) stent
in position

Discussion

Carinal and bilateral mainstem bronchi compression and/or obliteration with tumor is an extremely dangerous situation. There is no possibility for intubation distal to the lesion and therefore paralysis can be quite dangerous in these patients as it can lead to a non-ventilatable situation. The anatomy often precludes metallic stenting due to the problem of tri-airway narrowing (trachea, right and left mainstem bronchi). Stenting with the silicone Dynamic (Y) Stent is ideal due to the ability of the Y-stent to correct the tri-airway anatomic abnormality (Figure 4). Furthermore, the rigidity of the plastic prosthesis and its metallic rings prevents stent compression or collapse in hard tumors or in cases of tumor progression.

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