Rare Cases: Tracheal/bronchial Obstruction

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Citation

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Abstract

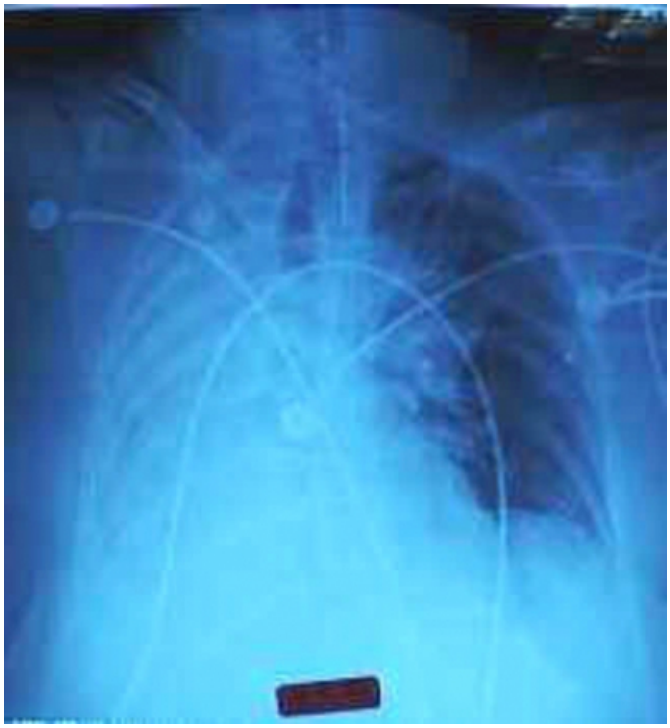
HISTORY

A 75 year old female patient presents with shortness of breath. She has some cough with white and bloody sputum. Afebrile. She had a history of renal cell carcinoma with unilateral nephrectomy 30 years ago. Positive for hypertension, non-insulin-dependent diabetes mellitus and asymptomatic coronary artery disease. In the past year she underwent several bronchoscopies for evaluation of the airway. She had a known progressive narrowing of her distal trachea due to metastatic lung disease. Radiotherapy and chemotherapy did not improved her progressing disease. She was transferred to our hospital for further evaluation and possible palliative measures in regard to her airway.

ADMISSION

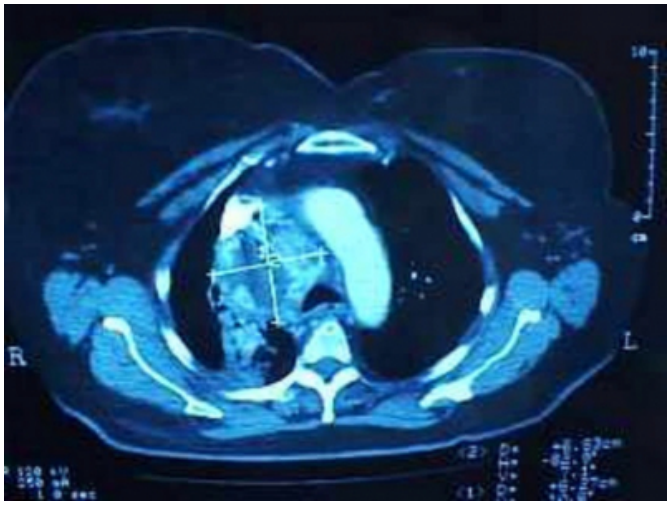
The patient presented with the following chest X-ray and chest CT scan:

Figure 1



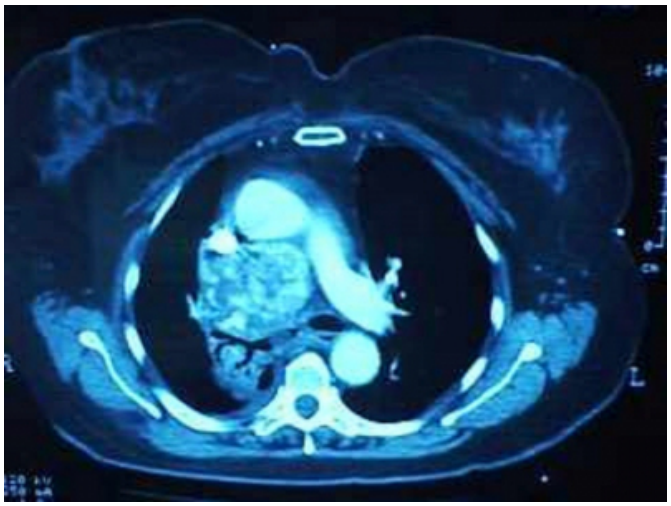
Chest X-ray: atelectasis of the right lung with mediastinal shift to the right

Figure 2



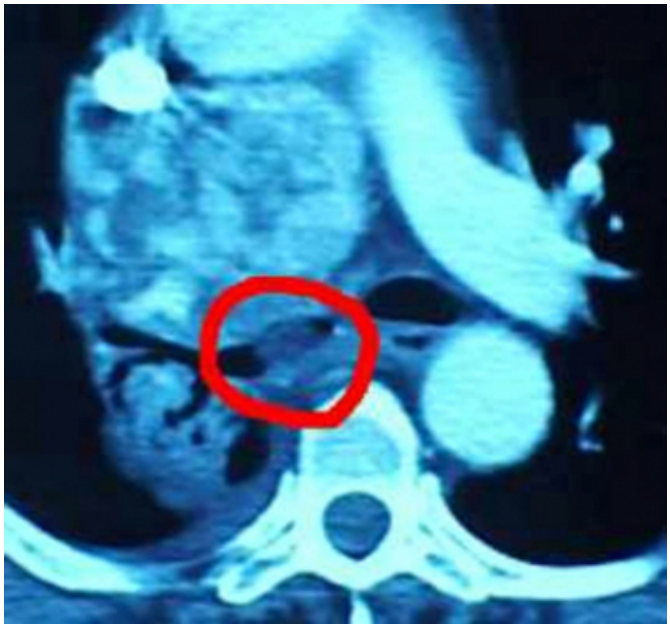
Chest CT scan: mediastinal mass (7 cm in diameter) compressing the trachea just above the carina

Figure 3



Chest CT scan: intratracheal/bronchial tumor mass obstructing the right mainstem bronchus

Figure 4



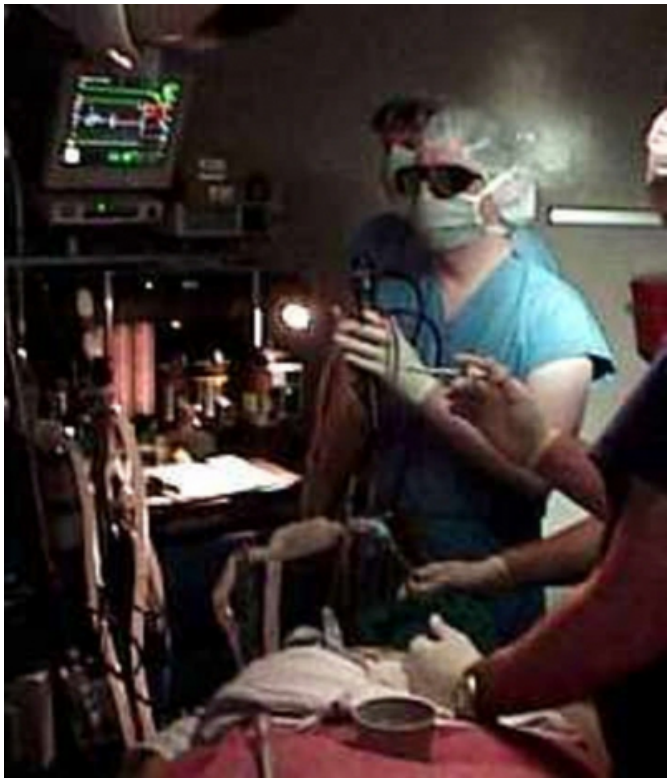
Close-up image of the intratracheal/bronchial tumor mass obstructing the right mainstem bronchus

PLAN

The patients situation was desperate. The tumor mass had obliterated most of the right mainstem bronchus and was just about to start closing the left main bronchus. It was discussed with the patient, family and referring physician that the thoracic team would attempt a palliative procedure to open the airway. The patient was intubated and ventilated in order to avoid respiratory failure. Sedation was obtained with a propofol drip. A DNR (Do Not Rescucitate) order was discussed and placed in order. Thoracic surgery and anesthesia discussed the plan of this high risk procedure. The patient was taken to the operating room for fiberoptic bronchoscopy, YAG laser of the intratracheal/bronchial tumor mass and possible stent placement.

INTRAOPERATIVE PROCEDURE

Figure 5



Fiberoptic bronchoscopy and laser procedure through the endoscope

Figure 6

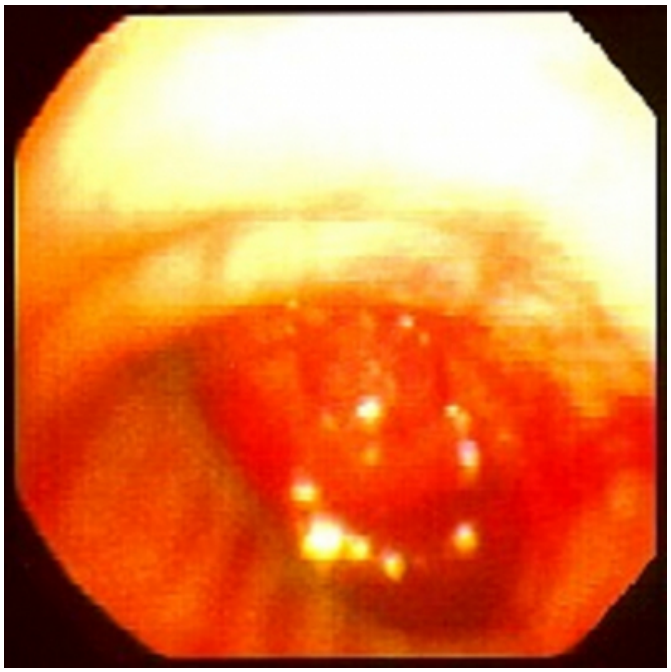
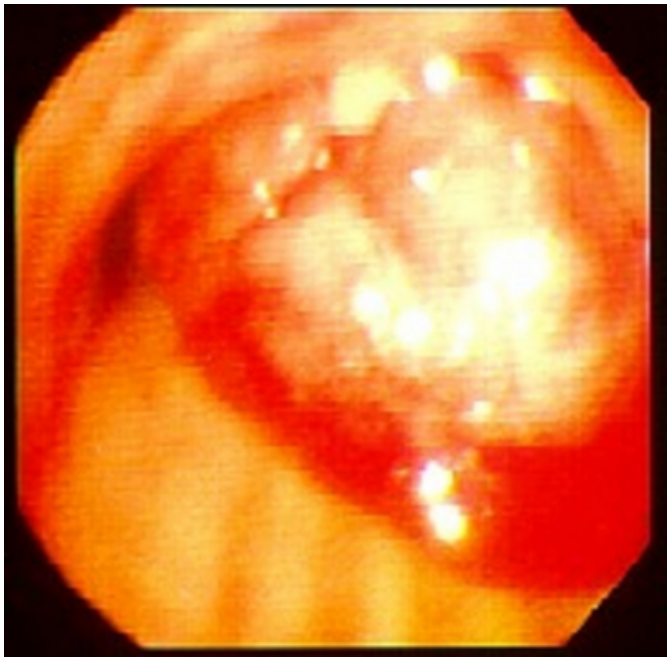
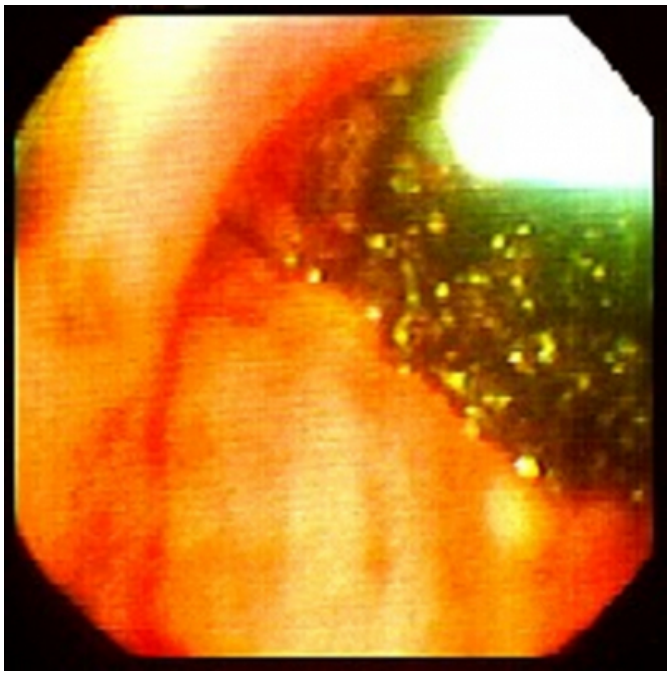


Figure 7



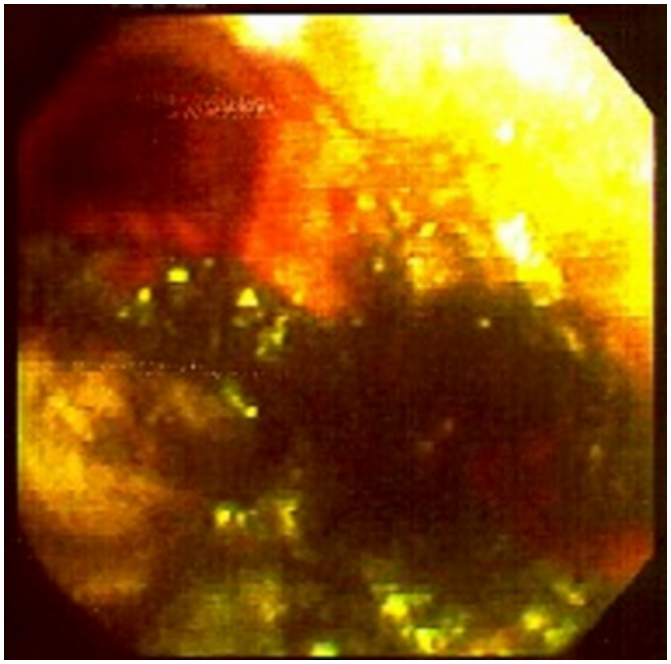
Fiberoptic bronchoscopy: tumor mass reaching into distal trachea and obstructing 98% of the right mainstem bronchus. Some bloody and necrotic tissue on the surface of the tumor mass

Figure 8



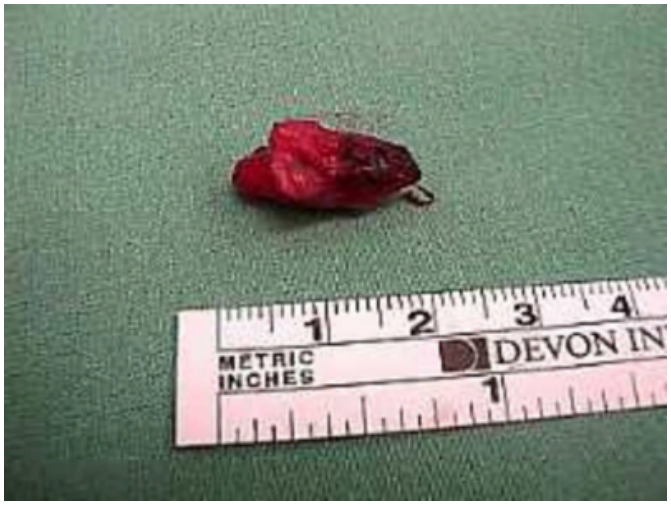
Laser in action: On the left upper corner carina with left mainstem bronchus (visible after several sessions of YAG laser). Active laser beam on the right upper corner treating the tumor mass

Figure 9



View from the distal trachea: open left mainstem bronchus in left upper corner. Carina in the middle and reopened right mainstem bronchus in the right lower corner with laser scars and burns.

Figure 10

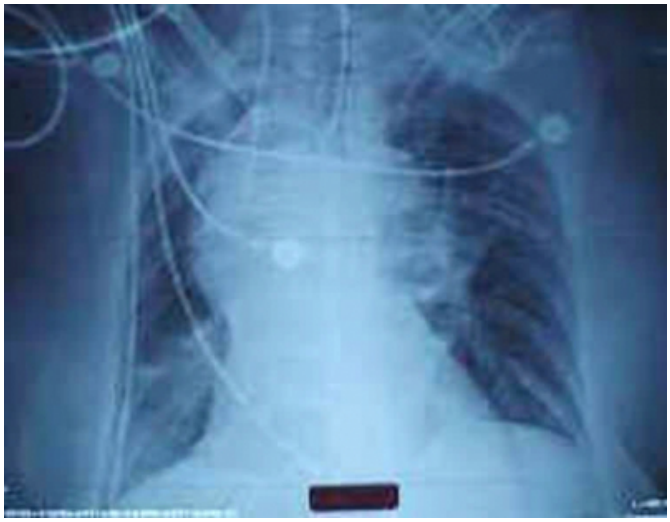


One third of the tumor mass removed from the trachea with endoscopic forceps after YAG laser treatment.

POSTOPERATIVE COURSE

Uneventful postoperative course. Weaning from ventilator and extubation without problems on postoperative day 1. Patient discharged from intensive care unit with stable vital signs. Repeat of YAG laser surgery in the future possible as palliative procedure.

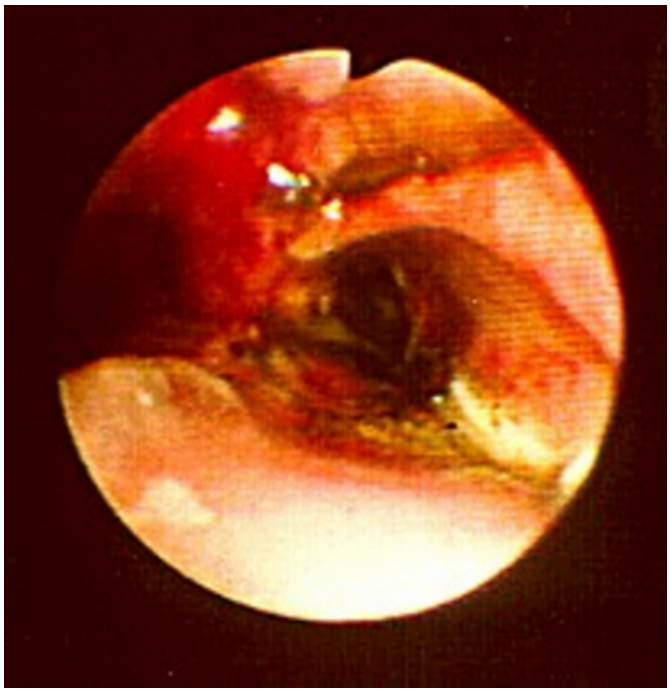
Figure 11



Postoperative chest X-ray prior to extubation on postoperative day : lungs bilaterally ventilated, large tumor mass in mediastinum/right upper lobe, mediastinum back in midline compare to preoperative image

1 weeks later: The patient is doing much better and is soon to be discharged.

Figure 12



Bronchoscopy reveals an open right mainstem bronchus.

References

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