Safety and Utility of Mediastinoscopy in Patients with Non-Small Cell Lung Cancer and a Complex Mediastinum

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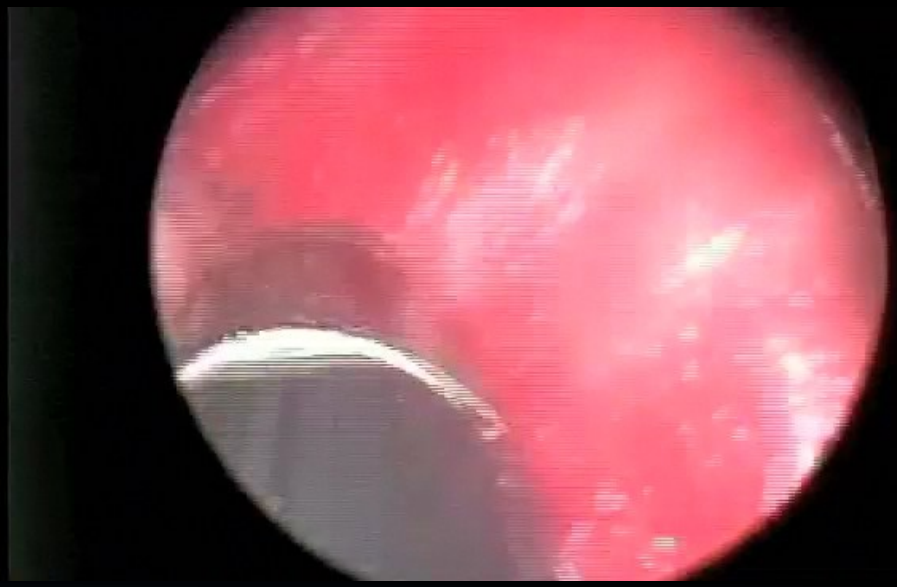
- No relevant disclosures

Background

- Most treatment decisions for NSCLC based on status of mediastinal lymph nodes
- Absence of nodal involvement → surgery
- Presence of N2 nodal involvement → multiple options
  - Chemotherapy
  - Radiation therapy
  - Surgery
- Our preferred approach has been induction therapy followed by surgical resection for limited locally advanced disease

Background

- Prior to induction therapy
  - Confirm nodal positivity
  - EBUS or Mediastinoscopy
- After induction, MED often omitted
  - Potential morbidity
  - Safety concerns
  - Unknown utility
- BUT nodal status at restaging influences decision to offer surgical resection
  - 10-20% survival with persistent N2 disease



Video Link

Aim

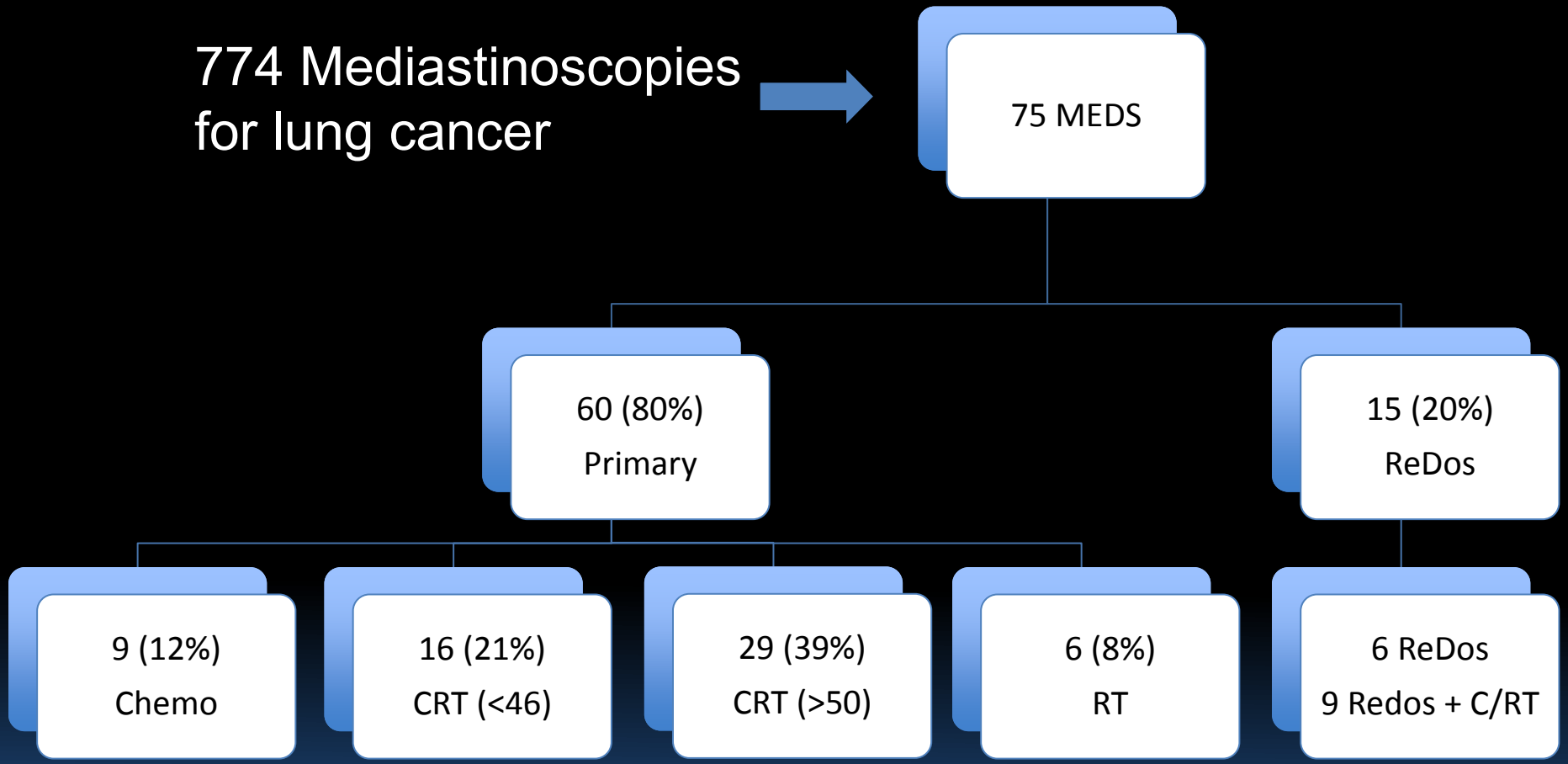
To determine the safety, utility and role of restaging mediastinoscopy in a complex mediastinum prior to surgical resection

Materials and Methods

- Retrospective chart review (1999-2009)
- Consecutive patients
- Inclusions:
  - Confirmed NSCLC
  - Complex mediastinum defined
    - Previous mediastinoscopy
    - Induction chemotherapy
    - Previous mediastinal radiation
    - Or a combination thereof

Results

774 Mediastinoscopies for lung cancer



Safety

No in-hospital
Or
30 day mortality

10 (13%)
Morbidity

Major – primary med +
CRT (45, 50, 50 Gy)

Major
3 (4%)

Minor
7 (9%)

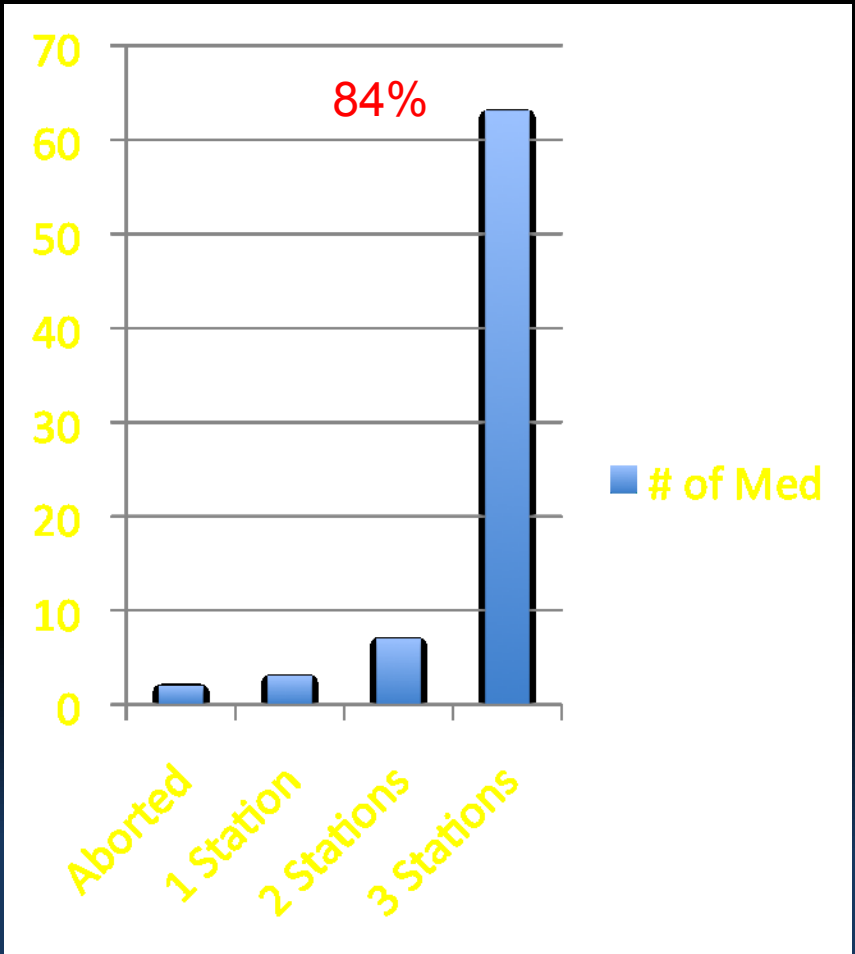
Control with packing
Definitive control and resection

Vascular
Bleed
(azygous)

RLN
2

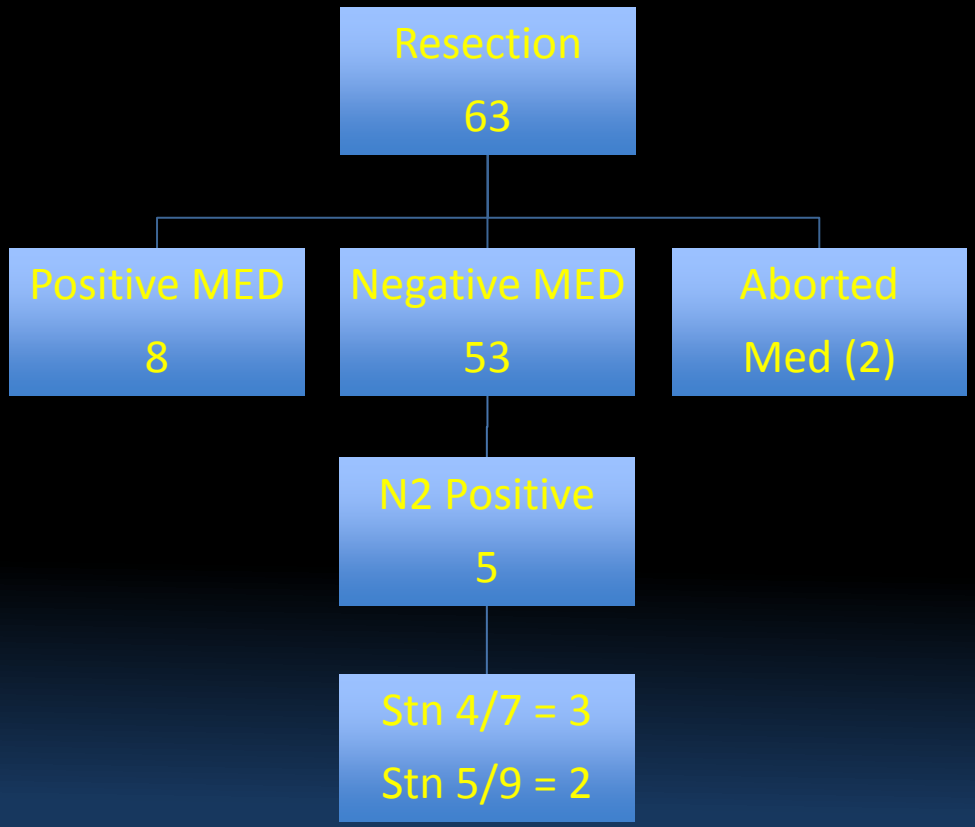
Hoarseness (3)
Chyle leak
PNA, Afib, Skin

Feasibility and Success



- Feasibility = ability to access 4R, 4L and 7
- Success = presence of nodal tissue at each station biopsied
- 88% of biopsied stations had nodal tissue
- 2 abort MED for preclusive fibrosis due to prior RT (>60 Gy)

Correlation with resection



		Resection	
		+	-
MED	+	8	0
	-	5	48

Sensitivity = 73%
Specificity = 100%
NPV = 91%

But, true false negatives = 3
so NPV 48/51 = 94%

Mediastinal Nodal Assessment

Study	N	CR/T	Re Do	Sens/ Spec	False Negative
Mateu-Navarro et al (2000) ATS	24	24	24	70/100	5/12
Van Schil et al (2002) Lung Cancer	27	27	27	73/100	4/16
Lardinois et al (2003) ATS	24	22	0	81/100	2/22
Marra et al (2008) JTCVS	104	104	104	61/100	13/84
Zielinski et al (2010) EJCTS (TEMLA)	63	63	7	95/100	0/42
Herth et al. (2008) JCO (EBUS)	124	124	-	76/100	28/35
Current study	75	69	15	73/100	3/53

Conclusions

- MED in the complex mediastinum can be performed with acceptable morbidity
- Stations 4R, 4L and 7 can be reliably accessed and lymph nodes biopsied
- Results at MED correlate with final post resection pathology
- MED has a role in the evaluation of NSCLC considered for resection in the setting of combined modality therapy

Algorithm for N2 Disease

Presumed Early Stage NSCLC	Central Third Cancer	CT or PET Limited N2 +	CT Bulky N2 +

• MED -
  • Surgery
• MED +
  • Induction
  • Redo-MED
	• EBUS +
	  • Induction
	  • Restaging MED
	• EBUS -
	  • MED
		• EBUS +/- MED
		  • Induction
		  • Definitive CRT
		• Re staging or redo-MED
			• EBUS or MED
			• Definitive CRT