Mediastinal lymphadenopathy : Is the surgical biopsy necessary?

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What is the problem?

Definition of the problem

- Radiological evidence of enlarged mediastinal lymph nodes
- Absent or non-specific clinical symptoms
- Absent or non-specific other radiological findings

Background of this study

- Mediastinal lymphadenopathy is common
- Large Asian community in West Yorkshire
- Mediastinal lymphadenopathy may represent a wide range of pathology
- Tissue diagnosis is a gold standard
- Strong correlation between correct diagnosis and successful treatment
- Medico-legal implications

How to obtain tissue diagnosis?

- Transbronchial needle biopsy
- Ultrasound guided transbronchial biopsy
- Transoesophageal ultrasound guided needle biopsy

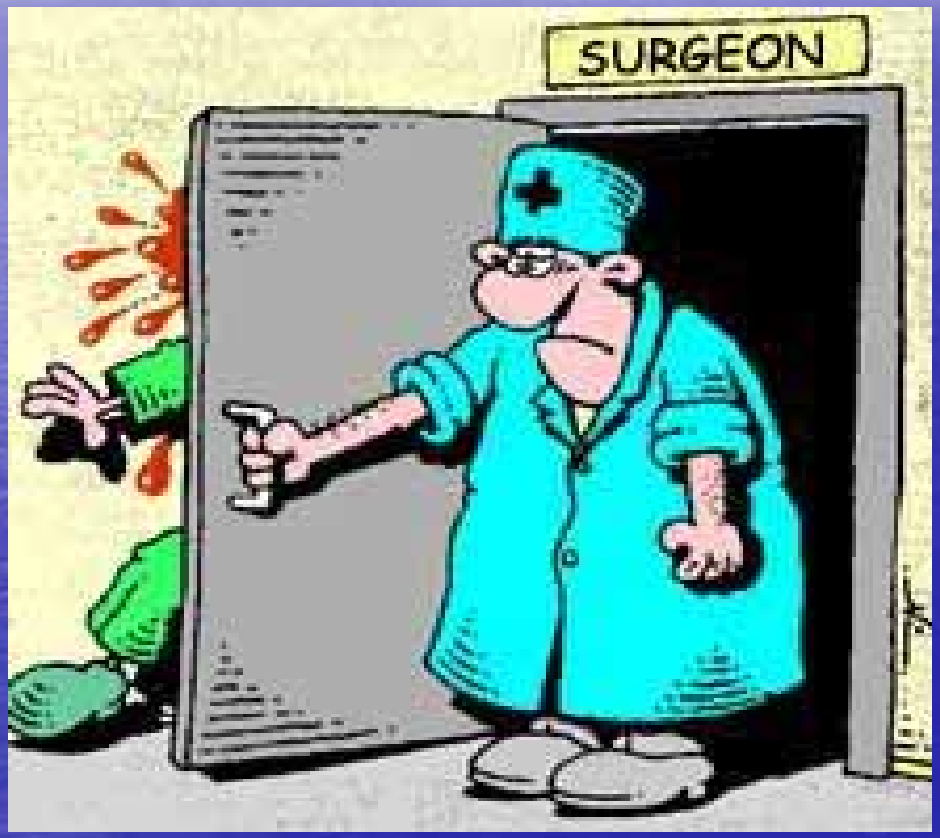
Transbronchial needle biopsy

- Success rate – up to 90%
- Complications are very rare
- Relatively steep learning curve (around 50 procedures required)

Problems with transbronchial needle biopsy

- Sampling size
- Availability
- Uncertain or equivocal results

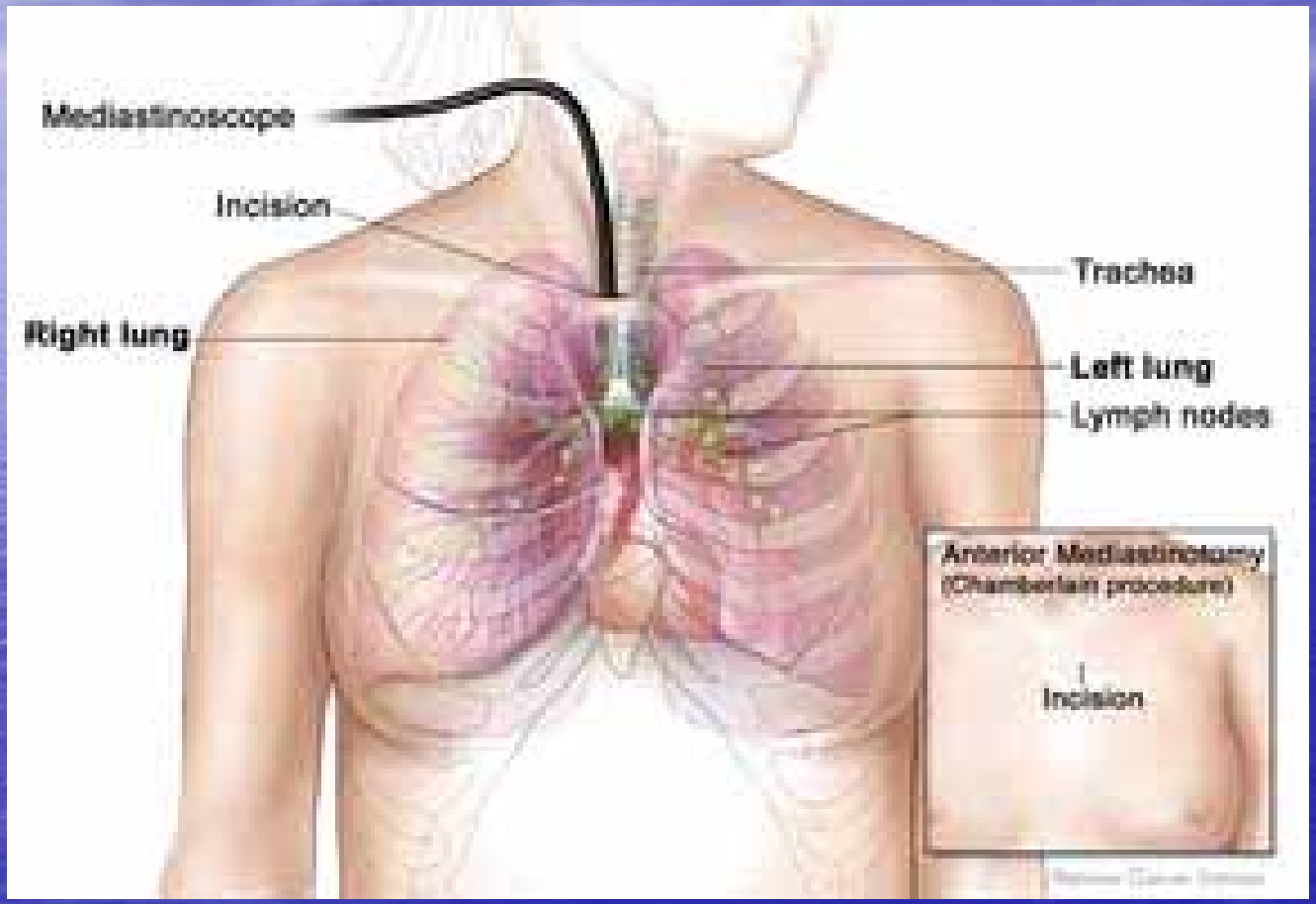
...to ask a surgeon



Surgical mediastinal lymph node biopsy

- Mediastinoscopy
- Videomediastinoscopy
- Anterior mediastinotomy
- Combined mediastinoscopy and mediastinotomy

Mediastinoscopy



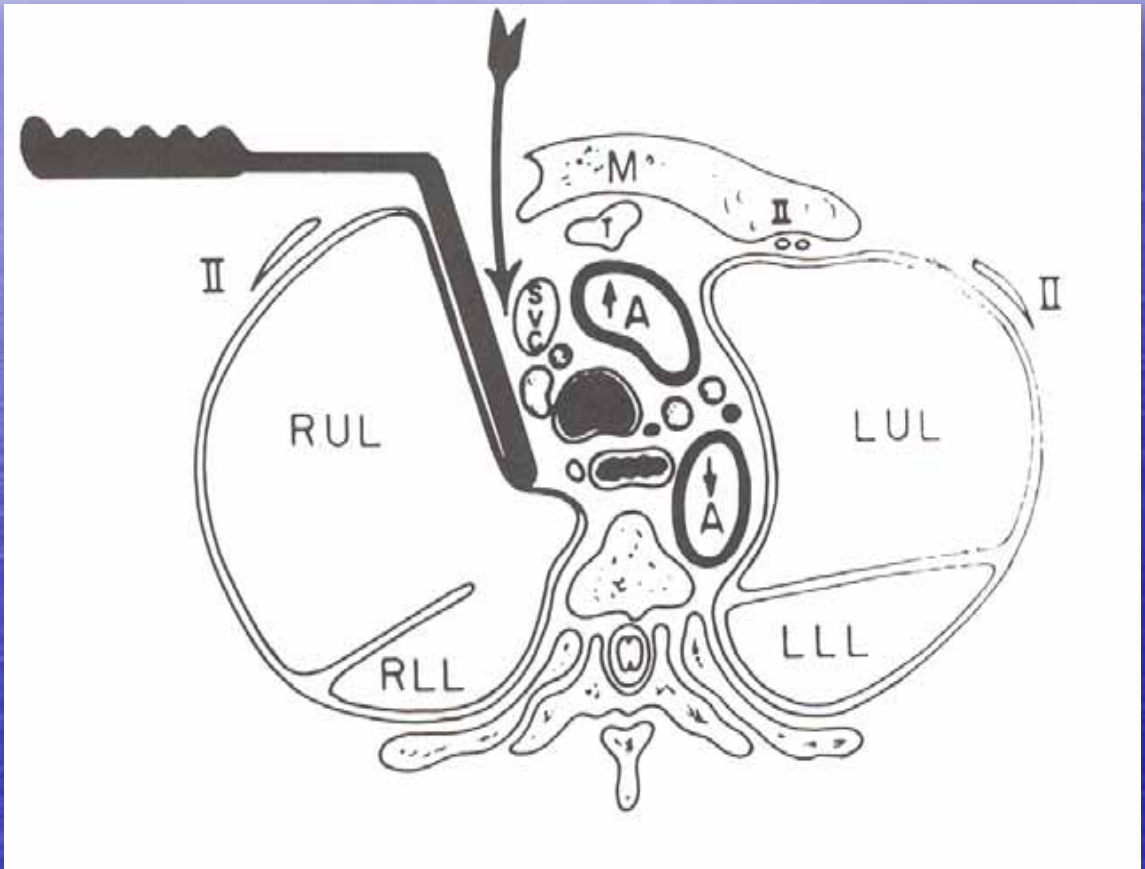
Videomediastinoscopy

Advantages:

Better visualization x17 magnification

Better tissue samples

Mediastinotomy



Patients

- Total number -142
- Age – 16-89 (mean 50) years
- Males – 87 (61.3%)

Ethnic background of patients

Asians – 66 (46.4%)

males – 36 (54.5%)

age – 18-89 (mean 45.6) years

Non-asians – 76 (53.6%)

males – 52 (68.4%)

age – 16-85 (mean 53.8) years

Procedures

Mediastinoscopy – 127 (86.9%)

Mediastinotomy - 19 (13.1%)

Total – 146 (4 patients had both procedures)

Pre-operative diagnosis

- Mediastinal lymphadenopathy – 97 (68.3%)
- Sarcoidosis – 20 (14.1%)
- TB – 15 (10.6%)
- Metastatic cancer – 7 (4.9%)
- Lymphoma – 3 (2.1%)

Clinical outcomes

- Mortality – 1 (0.7%)
- Bleeding – 1 (0.7%)
- Hospital stay – 0-8 (mean 2) days

Histopathology

- Sarcoidosis – 31 (21.1%)
- Granulomatous inflammation – 26 (18.3%)
- Tuberculosis – 24 (16.9%)
- Malignant tumour – 17 (11.9%)
- Lymphoma – 9 (6.3%)
- Normal lymphatic tissue – 24 (16.9%)
- No lymphatic tissue – 3 (2.1%)

Histopathology in Asian patients

- Tuberculosis – 22 (33.3%)
- Sarcoidosis – 17 (25.8%)
- Granulomatous inflammation – 14 (21.2%)
- Malignant tumour – 3 (4.5%)
- Lymphoma – 1 (1.5%)
- Other – 9 (13.6%)

Problems

- Bleeding and other injuries
- No lymphatic tissue
- Wrong diagnosis

Resolving the problems

- Surgical complications – consent, to be aware of possible complications, to know where to stop
- No lymphatic tissue – repeat procedure or clinical follow-up
- Priority of clinical assessment

It is not always what it looks like

- 2 cases of negative (normal lymphatic tissue) mediastinoscopy and florid granulomatous inflammation in mediastinotomy samples
- Adenocarcinoma found in mediastinotomy sample 3 months after mediastinoscopy biopsy demonstrated sarcoidosis

Conclusions

- In patients with isolated ML the histological diagnosis is becoming mandatory
- TB is not the cause of ML in a significant number of Asian patients
- Surgical mediastinal lymph node biopsy is recommended in all patients with isolated mediastinal lymphadenopathy when other techniques fail