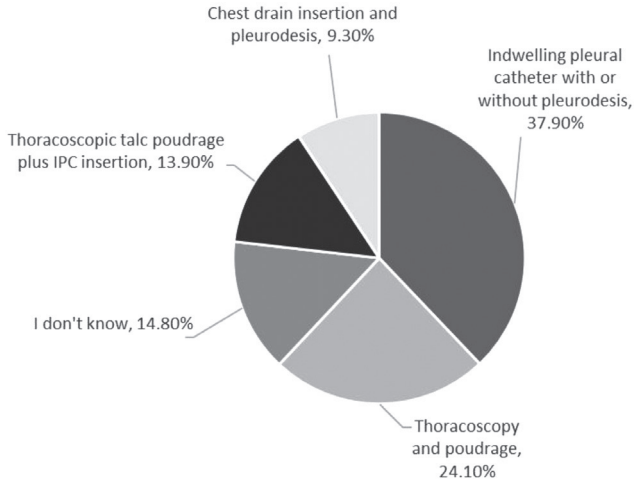


Abstract P7 Figure 1 Which intervention most improves quality of life in malignant pleural effusion? (n = 108)

Conclusion Shortness of breath and chest pain ranked highly in the perspective of HRQOL with shortness of breath a key factor in offering intervention. There is a lack of consensus on the ideal treatment to maximise HRQOL, which may reflect the paucity of data. Robust clinical trial evidence on HRQOL outcomes is therefore required to guide management decisions of patients with MPE. This should be complemented by a patient survey to ascertain differences in clinician and patient perspectives of quality of life and care.

P8 NEGATIVE PLEURAL BIOPSIES – DO WE NEED EARLY FOLLOW UP AND IMAGING?

[1]S Leyakathali Khan, [2]B Ganaie, [1]M Haris, [2]M Munavvar. *[1]Royal Stoke University Hospital, Stoke on Trent, UK; [2]Lancashire Teaching Hospital NHS trust, Preston, UK*

10.1136/thoraxjnl-2016-209333.151

Background Primary pleural or secondary malignancy is a common cause of pleural effusion. The incidence is about 200000 cases per year. Pleural biopsy remains gold standard investigation of choice. Those with negative biopsies are either discharged or have follow up depending on the multidisciplinary team decision.
Objective To review the outcome of all patients with negative pleural biopsy including any follow up imaging for up to two years.
Methods Retrospective analysis of 162 consecutive patients who underwent video-assisted thoracoscopic surgery (VATS) (100) and local anaesthetic thoracoscopy (62) between January 2011 and December 2012 across two large UK tertiary referral centres. Patients referred from peripheral centres were excluded.
Results Of the 162 patients, male:female ratio was 109/53; average age was 69. Pleural biopsy histology was malignant in 63% (100); mesothelioma 43%, lung cancer 35%, extra pulmonary 22%. Granulomatous inflammation 6% (9). Benign 31% (53); chronic inflammation 28, fibrosis/thickening 8, reactive 13 and others 4. See Table 1.

Of the 53 benign, 11 (21%) developed malignancy before 2 years. 6 (55%) required repeat biopsy. Patients alive at the end of 2 years – 1 Malignant and 26 benign of the 53.

Abstract P8 Table 1 VATS and Thoracoscopy Pleural Biopsies

	Centre 1	Centre 2	
Data from 2011 to 2012	VATS	Thoracoscopy	Total, n(%)
Number	100	62	162
Malignant on biopsy	60	40	100 963%)
Granulomatous	5	4	9 (6%)
Benign	35	18	53 (31%)
• Chronic inflammation	16	12	28
• Fibrosis/thickening	8	0	8
• Reactive	8	4	12
• Others	3	2	5
Malignant progression	8	3	11 (21%)

Imaging performed during 2 years follow up at 6, 12, and 24 months: plain chest radiograph 22 (42%), 12 (23%), 13 (25%) and CT scan was done at 5 (9%), 8 (16%), 2 (4%) respectively.
Conclusion Our data suggests that 21% of patients were diagnosed as malignant within 2 years of initial negative biopsy, which is higher than expected.[1] There is a need for early follow up and imaging in patients with negative pleural biopsy. Further studies are required to establish the follow up interval and imaging modality.

REFERENCE

1 Janssen J, Ramlal S, Mravunac M. The long-term follow up of exudative pleural effusion after nondiagnostic thoracoscopy. *J Bronchol* 2004;**11**(3):169–174.

P9 THE UTILITY OF P16 FISH IN DIFFERENTIATING MALIGNANT MESOTHELIOMA AND BENIGN MESOTHELIAL PROLIFERATIONS

A Chaturvedi, J Holme, R Shah, P Taylor, M Evison. *University Hospital of South Manchester, Manchester, UK*

10.1136/thoraxjnl-2016-209333.152

Introduction One of the commonest genetic abnormalities in malignant mesothelioma is deletion of the 9p21 locus which harbours the p16/CDKN2A gene. Homozygous deletion of p16/CDKN2A can be identified with Fluorescence in situ hybridization (FISH) and may be a useful diagnostic tool where there is difficulty separating malignant from benign mesothelial cell proliferations, e.g. where a lack of invasion into adipose tissue prevents a confident diagnosis of mesothelioma.
Methods The University Hospital of South Manchester is a regional mesothelioma centre in the North West of England. p16 FISH has been in clinical use since 2013 for cases of abnormal mesothelial cell proliferation without conclusive evidence of malignancy. This retrospective study analysed the diagnostic performance of p16 FISH using clinical follow-up and post-mortem studies to clarify final diagnoses.
Results 75 pathological samples underwent p16 FISH analysis 2013–2015; 16 cytology samples (14 pleural fluid, 2 ascitic fluid), 36 VATS pleural biopsies, 16 local anaesthetic thoracoscopy pleural biopsies and 7 percutaneous pleural biopsies. There was one failed test. A final diagnosis based on subsequent definitive pathological sampling, definitive radiological surveillance or post-mortem findings were available for 99% of patient (74/75). 71 patients were ultimately proven to have mesothelioma (39 epithelioid, 13 sarcomatoid, 7 biphasic and 12 NOS), 2 patients were diagnosed benign pleural disease and 1 with metastatic lung cancer. The diagnostic performance of p16 FISH was as follows:

sensitivity 69%, specificity 100%, positive predictive value 100%, negative predictive value 8%, and diagnostic accuracy 69%. All positive p16 FISH results were in cases of mesothelioma. The sensitivity of p16 according to specimen type was as follows: fluid cytology 88%, VATS 59%, medical thoracoscopy 57% and percutaneous biopsy 50%. The sensitivity as per histological subtype for p16 FISH was 66% in epithelioid mesothelioma and 73% in sarcomatoid mesothelioma.

Discussion p16 FISH is a useful diagnostic tool to confirm cases of suspected malignant mesothelioma. A positive result is consistent with mesothelioma but a negative result does not exclude it. This data shows promising diagnostic yield in fluid cytology which may be especially relevant in those patients unsuitable for invasive biopsies due to technical or clinical reasons.

P10 LIGHT MAY BE USED TO DIFFERENTIATE MESOTHELIOMA FROM BENIGN PLEURAL DISEASE AT THE BEDSIDE

[1]NK Oswald, [2]A Robertson, [2]P Rajesh, [2]R Steyn, [2]E Bishay, [2]M Kalkat, [1]B Naidu. *[1]University of Birmingham, Birmingham, UK; [2]Heart of England NHS FoundationTrust, Birmingham, UK*

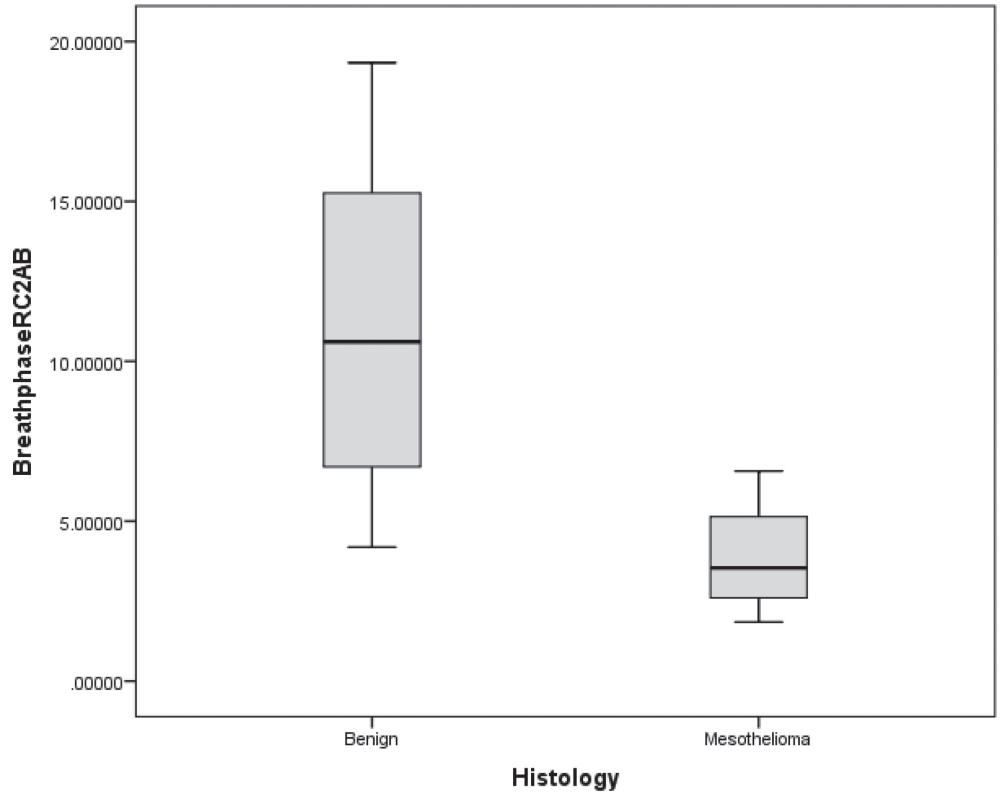
10.1136/thoraxjnl-2016-209333.153

Introduction Monitoring patients at risk of mesothelioma, earlier diagnosis and improving diagnostic tests are top research priorities set by the James Lind Alliance. Chest wall motion (CWM) can be quantified using structured light plethysmography (SLP). During SLP a single source of visible light projects a chequerboard grid onto the anterior chest wall of a patient; two spaced cameras record changes in the contours of the grid to calculate thoracic volume changes. This study aimed to assess whether there are quantifiable differences in CWM between benign pleural disease and mesothelioma using SLP.

Methods Patients attending the preoperative assessment clinic for an elective diagnostic pleural biopsy were prospective recruited. After giving consent, patients underwent a timed 5 minute SLP recording of tidal breathing whilst resting in an upright seated position. Recordings were done prior to surgery and analysis of the SLP recording was performed by a blinded technician. Histology results were collected after surgery and Mann Whitney U two tailed tests of SLP values performed.

Results Fifteen patients were recruited with a median age 71 (23–93 range), 90% were male. Patients subsequently diagnosed with mesothelioma (n = 4) had significantly different values in three measurements: the inspiratory to expiratory time ratio (Ti/Te, p = 0.009), breath phase between ribcage and abdomen (breath phase RC2AB, p = 0.013) and the variation in ratio of inspiratory flow at 50% of tidal motion to expiratory flow at 50% of tidal motion (IE50 IQR, p = 0.004). Median and interquartile ranges for breath phase (a measure of CWM synchrony) are shown in Figure 1. The recording process was highly acceptable to patients.

Conclusions Mesothelioma affects the ratio of time for inspiration and expiration as well as synchrony in CWM and variability of the breathing pattern. SLP is rapid, portable, non-invasive, requires minimal operator training and involves no radiation. The differences found indicate that CWM measurement is a promising tool to diagnose or exclude mesothelioma and potentially to monitor patients at risk of mesothelioma, further studies using SLP in this context are indicated.



Abstract P10 Figure 1 Difference in ribcage to abdomen movement synchrony between benign pleural disease and mesothelioma