

Abstract P180 Table 1

		Post-operative histology		
		Epithelioid	Biphasic	Sarcomatoid
Pre-op histology	Epithelioid	243	49	0
	Biphasic	4	24	2
	Sarcomatoid	1	3	7
	Benign	1	0	1

outcome. This correlates with our existing knowledge of the heterogeneity of MPM and the difficulty of subtyping from small biopsies. A wide distribution of biopsy sites within the hemithorax is likely to be more significant in obtaining an accurate histological diagnosis than the mode of biopsy itself.

### P181 DOES THE DEGREE OF OCCUPATIONAL ASBESTOS EXPOSURE AFFECT THE OUTCOME OF RADICAL SURGERY FOR MALIGNANT PLEURAL MESOTHELIOMA?

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**Introduction** Malignant Pleural Mesothelioma (MPM) is associated with variable exposure to asbestos and a spectrum of prognosis which may be extended by radical surgery. Proportional mortality ratios have been used in the past to estimate the risk of developing mesothelioma, and more recently specific occupational risk groups have been described.<sup>1</sup>

We aimed to determine whether those at highest risk of developing mesothelioma by virtue of working in high exposure occupations also fared worse after radical surgery for mesothelioma.

**Methods** Case notes were reviewed for all patients undergoing radical surgery for MPM between 1999 and 2014. Prior asbestos exposure had been determined by histories taken by the multi-disciplinary team. Patients were separated into one of 8 groups, using modified versions of the categories proposed by Rake *et al.* in 2009.<sup>1</sup> Comparative outcome was assessed for each group.

**Results** History of asbestos exposure was available for 262 patients. Thirteen patients were excluded from further analysis having died in hospital.

Of the remaining 249 patients, 84.3% were male, and median age was 62 years (range 14–81 years). The only significant inter-group difference was gender, with more females in the low risk and no exposure groups ( $p = 0.021$ ). However, in our cohort of surgically treated patients, gender had no effect on survival ( $p = 0.476$ ).

There was a significant difference in survival between the low risk group and the high and medium risk groups combined (24.2 vs 14.5 months  $p = 0.031$ ).

Survival was similar between those with known asbestos exposure and those who reported no asbestos exposure; 14.7 vs 15.2 months  $p = 0.573$ .

**Conclusion** This is the first study to demonstrate that those patients who worked in occupations at highest risk of developing mesothelioma also have the worst comparative survival from radical surgery. The causation remains a topic for further research. It is also of note that patients with no reported asbestos exposure had an unexpectedly poor survival. The importance of a careful occupational history of asbestos exposure is emphasised.

### REFERENCE

- 1 Rake C, Gilham C, Hatch J, Darnton A, Hodgson J, Peto J. Occupational, domestic and environmental mesothelioma risks in the British population: a case-control study. *Br J Cancer*. 2009 Apr 7;100(7):1175–83

### P182 APPRAISAL OF AN INDWELLING PLEURAL CATHETER (IPC) SERVICE AT A LARGE ACUTE TRUST

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**Introduction** Data on indications, outcomes and complications of IPCs from clinical trials has been published.<sup>1</sup> This audit examined differences in practice and outcomes between clinical trials and day-to-day working which may influence the pleural service and provide information to other hospitals considering introducing this service.

**Method** We retrospectively reviewed patient-related data and outcomes for IPCs inserted at our hospital from February 2011 until December 2013. We compared the findings to secondary outcomes of the IPC arm of the TIME2 trial.<sup>1</sup>

**Results** 102 IPCs were placed into 93 patients: 43 as inpatients; 59 as outpatients. 20 inpatients and 23 outpatients had previous talc pleurodesis.

10 patients had microbiological isolation of pleural fluid throughout a total of 27.3 IPC years; not all were associated with clinical signs of a pleural infection. Only 12 (50%) patients with a C-reactive protein of  $>200$  mg/l had a sample of their pleural fluid sent for culture.

Drain removal occurred in 23% of the inpatient IPCs and 29% of the outpatient compared to 57% in the TIME2 trial.

The median inpatient stay after elective pleurodesis in an outpatient was 1.5 nights in 2011 (range 0–11), 1 night in 2012 (range 0–5) and 0 nights in 2013 (range 0–5).

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Exposure Group (Rake <i>et al.</i> )	Asbestos exposure	n	Median survival		Risk Group	Median survival	
			(months)	p		(months)	p
1	Any non-construction high-risk job	60	14.4				
2	Carpenter	34	15.8				
3	Plumber, electrician, painter or decorator	17	14.0				
4	Other construction	35	13.2		High Risk	14.4	
5	Any medium-risk industrial job	21	14.8		Medium risk	14.8	
6	Any low-risk industrial job	7	32.0				
7	Domestic exposure	12	24.2		Low risk	24.2	
8	None of the above	63	15.2	0.447	None	15.2	0.167

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	Inpatient	Elective outpatient	Missing data
Indication for IPC:			
Lung cancer	5	16	
Mesothelioma	7	14	
Other cancer	26	22	
Benign or unknown	1	6	1
Number of IPCs	43	59	3 drain still <i>in situ</i> ,
IPC: number removed	10 (23%)	17 (29%)	1 displaced
Removed due to spontaneous pleurodesis	3 (7%)	5 (8%)	
Median days <i>in situ</i> until removal (range)	97.5 (3–168)	92.5 (22–340)	1 unknown
IPC <i>in situ</i> at time of death	31 (72%)	35 (59%)	5 lost to follow up
Median days <i>in situ</i> until death (range)	22 (7–317)	79 (2–346)	

**Conclusion** The TIME2 cost analysis was based on a median stay of 0 nights which has been replicated in our hospital this year. The optimisation of community support and increasing confidence with the procedure led to reductions in inpatient stays.

The rate of IPC removal was substantially less common in our cohort and the indication for removal was often not due to spontaneous pleurodesis alone unlike the TIME2 trial. Indications for removal included infection, pain and blockage as well as pleurodesis. The data from our centre did not exclude any patients, including those who died, and the follow up period often continued beyond 6 months.

Some large differences exist between the TIME2 trial data and our cohort. While this could reflect a different patient population and setting, it could also highlight differences in outcomes between controlled clinical trials and day-to-day practice.

#### REFERENCE

1. Davies HE *et al.* *JAMA* 2012;307(22):2383–9

## TB: non pulmonary and hepatotoxicity

### P183 ENDOBRONCHIAL ULTRASOUND AND TUBERCULOSIS: BEWARE THE NON-CASEATING GRANULOMA

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**Introduction** Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is now the standard of care for investigating intra-thoracic lymphadenopathy. Although well validated in malignancy and sarcoidosis, the literature for intra-thoracic tuberculous lymphadenitis is limited. Previous work from neighbouring London boroughs reported a sensitivity (histology or microbiology consistent with tuberculosis (TB)) for TB of 94% with positive TB culture in 47% of 156 patients

**Methods** We examined retrospectively all EBUS-TBNA procedures performed at a London district general hospital between April 2010 and January 2014. Patients were referred to our EBUS service from our own hospital and two local centres. All patients were assessed clinically prior to the procedure and

underwent a CT scan. Bronchoscopy reporting software was used to identify all EBUS procedures. Patient notes, clinic letters, electronic patient records and the London TB Register (LTBR) were used to obtain clinical information then matched with pathological and microbiological results. All patients were followed up for a minimum of 6 months.

**Results** 363 patients were included. The overall sample yield (either lymph node or tumour identified) was 94%. 63 cases of tuberculosis were identified and EBUS-TBNA had been diagnostic in 57 (90%). Pathological findings were consistent with TB in 84% of cases and culture was positive in 62%. Culture identified 5 cases of drug resistance. Where caseating granulomas were identified, 18/25 cases were culture positive and 15/23 where non-caseating granulomas were identified ( $p = 0.76$ ). In addition, where necrotic material was obtained 3/5 samples were culture positive and where reactive lymph nodes were identified 4/9 samples were culture positive.

**Conclusion** EBUS-TBNA is a useful tool in the investigation of intra-thoracic tuberculous lymphadenitis. We show the possibility of achieving higher culture positivity from that reported in the literature. It highlights the importance of the TB culture for definitive diagnosis and detecting drug resistance. It is important to examine these findings in the context of appropriate clinical information and investigations.

### P184 FEMALE GENITAL TUBERCULOSIS: THE LONG ROAD TO DIAGNOSIS

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**Introduction** Female genital tuberculosis (TB) is rarely encountered in the UK but early diagnosis and treatment can prevent significant morbidity.

**Methods** We conducted a retrospective study of all patients treated at our institution for female genital TB between 2004 and 2014. Data including demographics, symptoms, microbiological and histological diagnoses and treatment outcomes were recorded.

**Results** 10 cases of female genital TB were identified. These account for approximately 0.71% of our TB cases, giving a local incidence of female genital TB of approximately 0.5/100,000 population. Mean age was 37.9 +/-14.3. Five patients were from Bangladesh, two from India and one from Pakistan, Cyprus and Somalia. Mean duration of symptoms prior to diagnosis was 24.3 months, range: 0–84. Presenting symptoms included infertility (50%), menorrhagia (10%), amenorrhoea (20%), irregular menstrual bleeding (40%), dyspareunia (20%), vaginal discharge (10%), post coital bleeding (10%) and lower abdominal pain (50%). Patients also experienced fevers (30%), night sweats (10%) and weight loss (10%). All patients had either a laparoscopy or hysteroscopy with biopsy of the endometrium in nine cases and the ovary in one case. Seven cases were found to have necrotising granuloma on biopsy of which two were positive for Ziehl-Neelson (ZN) staining, two were negative and three were not performed. Non-necrotising granuloma was seen in one case and histology was unrecorded for two cases but PCR was positive in both these biopsies. Samples were sent for culture in three cases and all had fully sensitive TB. All cases were treated with standard TB treatment. In two cases treatment is ongoing. One patient died from a co-existing condition. Seven patients completed treatment, of which four had full symptom

## Corrections

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RM Mercer, S Gunatilake, LJ Bishop, *et al.* p182 Appraisal of an Indwelling Pleural Catheter (IPC) service at a large acute trust. *Thorax* 2014;69(Supp 2):A155. doi:10.1136/thoraxjnl-2014-206260.311

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