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Review Articles

British Thoracic Society Pleural Disease Guidelines - 2010 update

Authors: British Thoracic Society Pleural Disease Guideline Group

Reference: Thorax 2010; 65 Suppl. 2
URL: http://www.brit-thoracic.org.uk/Clinical-Information/Pleural-Disease/Pleural-Disease-Guidelines-2010.aspx

Comment: These updated evidence-based guidelines address the investigation and medical management of all aspects of pleural disease in adults, and are intended for use by all healthcare professionals involved in the management of pleural disease. Topics include: Investigation of a Unilateral Pleural Effusion in Adults, Management of Spontaneous Pneumothorax, Management of a Malignant Pleural Effusion, Management of Pleural Infection, Local Anaesthetic Thoracoscopy, Pleural Procedures and Thoracic Ultrasound. An e-learning module for pleural aspiration and insertion of a Seldinger chest drain is also available via the BTS Learning Hub.
Setting up a specialist pleural disease service

Authors: Hooper CE et al.

Comment: An excellent overview article detailing the need for and advantages of specialist pleural disease units, the essential elements required, common obstacles faced during establishment of the service and tips on how to address these. The paper also contains a helpful review of data on indwelling pleural catheters (spontaneous pleurodesis rates and major complications), as well as advice on compiling a successful business case and securing funding for a specialist pleural disease service.

Current Evidence Base of FDG-PET/CT Imaging in the Clinical Management of Malignant Pleural Mesothelioma: Emerging Significance of Image Segmentation and Global Disease Assessment

Authors: Basu S et al.
Reference: Mol Imaging Biol 2010; Dec 7. [Epub ahead of print], DOI: 10.1007/s11307-010-0426-6
URL: http://www.springerlink.com/content/n0065q271u445020/fulltext.html

Comment: FDG-PET/CT has become an area of significant research interest in malignant mesothelioma. This review article highlights areas of promise for this molecular tool, including differentiation of malignant from benign pleural disease, staging of mesothelioma, response to treatment, post-treatment surveillance and prognosis. The group also discusses their approach to calculating whole body disease burden by taking into consideration both volumetric and metabolic characteristics of the disease.

Guidelines of the European Respiratory Society and the European Society of Thoracic Surgeons for the management of malignant pleural mesothelioma

Authors: Scherpereel A et al.
URL: http://erj.ersjournals.com/content/35/3/479.long

Comment: Practical, concise, up-to-date guidelines on the management of malignant pleural mesothelioma, formulated by an expert group, through systematic analysis of the literature. This review is extremely clear and comprehensive, covering all areas from epidemiology to palliative care issues. Several pertinent questions are raised with corresponding recommendations.
Original Articles

The relationship between chest tube size and clinical outcome in pleural infection

Authors: Rahman NM et al.
URL: http://chestjournal.chestpubs.org/content/137/3/536.long

Comment: The lack of randomised controlled trials in this field fuels the ongoing debate on the optimum size of chest drain to use. This post-hoc analysis of the MIST-1 data (n = 405) provides a prospective comparison of the use of large and small (≤14F) drains in patients with pleural infections, with regard to efficacy and adverse events. There was no difference between the groups in the frequency with which patients either died and/or required thoracic surgery at 12 months ($P = 0.27$), nor was there any difference in secondary outcomes (length of hospital stay, change on chest X-ray, lung function at three months). Overall pain scores were higher in patients treated with large bore drains ($P = 0.008$) and in patients whose drains were inserted by blunt dissection. The size of the drain was highly correlated with insertion technique. These data support the argument that small size drains (with regular flushing) may be considered as first line therapy in patients with pleural infections.

Rapid pleurodesis for malignant pleural effusions: A pilot study

Authors: Reddy C et al.
URL: http://chestjournal.chestpubs.org/content/early/2010/10/06/chest.10-1868.long

Comment: The hypothesis of this study was that if thoracoscopy and talc poudrage were combined with simultaneous placement of a tunneled pleural catheter (TPC), it would decrease the length of hospitalization, reduce the number of days with a TPC and improve quality of life in patients with malignant pleural effusions, thereby achieving all the goals of pleural palliation. Thirty patients underwent the procedure over four years and were followed for up to six months. The results showed that length of hospital stay post procedure (median 1.79 days) and duration of TPC (median 7.54 days) were reduced, as compared with historical controls for either alone. Pleurodesis was successful in 92% of patients and dyspnoea/quality of life scores were improved in all patients. The limitations of this study are evident and the protocols used were not gold-standard, but the idea is interesting and randomised trials could be performed in future to further evaluate the feasibility, safety, effectiveness and costs associated with this technique.
Survey of major complications of intercostal chest drain insertion in the UK

Authors: Harris A et al.
URL: http://pmj.bmj.com/content/86/1012/68.long

Comment: This survey was conducted among chest physicians across multiple hospital trusts in the UK, looking at local chest drain practice and the incidence of related adverse events from 2003-2008. The results make for sober reading and re-confirm the fact that major complications, including fatalities, misplacement of intercostal chest drains and serious lung or chest wall injuries are under-reported. Training and consent are raised as the major concerns, and potential strategies are suggested, along with National Patient Safety Agency advice, on how we can best ensure patient safety.

Diagnostic accuracy, safety and utilisation of respiratory physician-delivered thoracic ultrasound

Authors: Rahman NM et al.
URL: http://thorax.bmj.com/content/65/5/449.long

Comment: This prospective study from Oxford, UK, assessed the number of respiratory physician-delivered thoracic ultrasound procedures performed in the unit since 2006, their diagnostic accuracy for the detection of pleural fluid, compared with a reference standard, the frequency of referral to radiology, and rates of adverse events if a procedure was performed. Nine hundred and sixty scans were performed and physicians correctly identified the presence/absence of fluid in 99.6% of cases. The rate of major complications was 3/558 (0.5%), which compared favourably with that reported in the published literature. It is important to note this is a specialist centre and examinations were conducted over a 3-year period by only three respiratory physicians, who were trained according to UK Royal College of Radiology level I standards. Nonetheless, it is reassuring that the data confirms the safety and efficacy of physician-delivered ultrasound for diagnosis and intervention in patients with pleural effusions.

Chemotherapy should not be withheld from patients with an indwelling pleural catheter for malignant pleural effusion

Authors: Morel A et al.
URL: http://thorax.bmj.com/content/66/5/448.long

Comment: This study looked to determine whether chemotherapy increased infection rates in patients with indwelling pleural catheters (IPC) for malignant pleural effusion. Data was collected from a prospectively maintained database at a tertiary centre. Twenty-three patients had an IPC during chemotherapy and three developed neutropaenia which lasted <1 week. None of these patients developed infections. There was no difference in infection rates between those who received chemotherapy while the IPC was present and those who did not ($P = 0.667$). Although this study was small and the findings need to be confirmed in larger patient cohorts, especially to encompass a wider range of (aggressive) chemotherapy regimes, it suggests that an IPC is not a contra-indication to chemotherapy.
**Prognostic factors for survival after surgical palliation of malignant pleural effusion**

**Authors:** Creaney J et al.


**URL:** [http://clincancerres.aacrjournals.org/content/17/5/1181.long](http://clincancerres.aacrjournals.org/content/17/5/1181.long)

**Comment:** Previous research has highlighted serum soluble mesothelin as a potential biomarker in mesothelioma. This study explored the clinical utility of mesothelin with regard to prognostication and monitoring of treatment response. Ninety-seven patients with malignant pleural mesothelioma were prospectively recruited over five years. Baseline mesothelin levels >5 nmol/L correlated with tumour stage and volume, and were a significant negative prognostic indicator. Changes in mesothelin levels correlated with objective response to chemotherapy and patients with reductions in mesothelin levels post-treatment had a significantly longer median survival than those whose mesothelin level increased (19 months vs. 5 months; \( P = 0.001 \)). These data suggest that soluble mesothelin may provide useful guidance for the clinician, although larger validation studies are needed before implementation in routine clinical practice.

**Serum soluble mesothelin concentrations in malignant pleural mesothelioma: relationship to tumor volume, clinical stage and changes in tumor burden**

**Authors:** Pilling JE et al.


**URL:** [http://journals.lww.com/jto/Abstract/2010/10000/Prognostic_Factors_for_Survival_after_Surgical.10.aspx](http://journals.lww.com/jto/Abstract/2010/10000/Prognostic_Factors_for_Survival_after_Surgical.10.aspx)

**Comment:** This study analysed the factors associated with long-term survival after palliation of malignant pleural effusion (MPE). Data are presented from a series of 278 patients referred to a UK thoracic surgical centre for management of MPE over 72 months. The method of palliation depended on patient fitness and intra-operative findings, and included video-assisted thoracoscopic surgery, talc poudrage, pleuroperitoneal shunt, talc pleurodesis via chest drain, surgically inserted long term drain and pleural biopsy only. Overall median post-operative survival was 211 days and there was no difference among procedures or types of cancer. On multivariate analysis, leucocytosis \( (P = <0.0001) \), hypoxia \( (P = 0.014) \) and hypoalbuminaemia \( (P = <0.0001) \) were associated with significantly reduced post-operative survival. Patients with all three adverse prognostic factors had a median survival of 42 days compared with 702 days for patients with none of these factors. These findings may assist in the choice of palliative technique to be used in patients with MPE.

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