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Commentary: pleural empyema and malignancy – another dimension

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Pleural empyema remains a significant cause of morbidity despite improvement in its management and the development of new antibiotic agents. In most series over 50% of empyemas occur following an episode of pneumonia, 20% occur after pneumonectomy, 10% are due to penetrating chest injuries, and 5% occur in patients with abdominal pathology. In 10% of cases the aetiology is unknown. The commonest causative organisms are *Streptococcus* and *Staphylococcus* species.

Two case reports in this month's issue of *Thorax* raise interesting points for discussion on the association between empyema and malignancy. Empyemas are known to occur in patients with underlying lung cancer, although the nature of the association is unclear. Immunosuppression and non-resolving pneumonia are likely to play a part in the pathogenesis of empyema in lung cancer. There was some debate in the 1970s when evidence was put forward suggesting an improved outcome following pneumonectomy for lung cancer in patients who developed a postoperative empyema. At one stage this led to a trial of postoperative intrapleural BCG therapy in an attempt to improve survival. The original theory was disproved in 1983.¹

In the context of lung cancer, empyema is usually encountered as a complication secondary to tube drainage of a malignant pleural effusion. This is an unsatisfactory complication to manage in the later stages of lung cancer, where a cavity fixed by pleuropulmonary tumour spread and reactive change is virtually impossible to obliterate. Definitive surgical procedures are often inappropriate or impossible, and the patient becomes consigned to persistent tube or bag drainage of pus for their remaining days. For this reason prevention is preferable, and we use caution in initiating tube drainage of pleural collections in the later stages of locally advanced lung malignancy, preferring needle aspiration if appropriate.

The development of pleural malignancy in patients with longstanding pyothorax is much rarer and, to our knowledge, is documented only in the Far East. Pleural non-Hodgkin's lymphoma arising in patients with chronic tuberculous pyothorax is well documented in Japan, but curiously nearly all case reports are confined to the Japanese literature.^{2,3} Cases tend to occur after at least a 20 year history of chronic tuberculous pyothorax and histories of up to 50 years have been reported. The lymphomas are usually of B cell origin, and an association with Epstein-Barr virus (EBV) infection has also been clearly documented.⁴ Only two cases have been reported outside Japan, both in Taiwan, of which the case reported by Hsu *et al* (pp 103-4) is the second. Their report is also of interest as they did not find evidence of tuberculosis in the aetiology of the pyothorax in their patient. There are also reports in the Japanese literature of other types of pleural malignancy arising in chronic tuberculous pyothorax. In one series of 17 cases of pleural soft tissue sarcoma, eight were found in patients with chronic pyothoraces.⁵

Chronic pyothorax is now very rare in western countries, which may account for the lack of similar cases in the West. There have, however, been a few documented cases of pleural mesothelioma in patients with a past history of extensive thoracic tuberculosis and no known exposure (direct or indirect) to asbestos.⁶

The pathophysiology of malignancy in chronic pyothorax is obscure. Hsu *et al* postulate that chronic inflammatory stimulation is the cause. In the case of pleural non-Hodgkin's lymphoma there is, however, evidence to support EBV as an aetiological factor. EBV gene products have been identified in B lymphocytes from pyothorax-associated pleural lymphomas.⁴ There are other better known associations between EBV and malignancy, such as that documented with Burkitt's lymphoma in East Africa and nasopharyngeal carcinoma in China.

Gill and Holden (pp 104-5) report a case of empyema due to *Salmonella enteritidis* in a patient with small cell lung cancer. Salmonellosis occurring in the context of malignancy is unusual but well described, arising mainly in patients who are immunocompromised through chemotherapy. Intrathoracic salmonella infections associated with lung cancer are, however, very rare. In a series of 100 patients with salmonellosis and malignancy collected over a 13 year period in the USA only seven were infected with *S enteritidis* and no patients had an empyema.⁷ The commonest isolates were *S typhimurium* and *S derby*, and

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the most frequent clinical manifestation was enteritis. As the authors point out, the subtype more commonly reported to be associated with empyema is *S typhi* which has been reported in case reports from India. The spectrum of salmonella infection in the UK is, however, changing, with an increasing incidence of *S enteritidis*.

Jeanfaivre *et al* (pp 106–7) document a case of bilateral eosinophilic pleural effusions due to infection with *Toxocara canis*. Eosinophilic effusions are exceedingly rare and this case demonstrates a most unusual manifestation of *Toxocara*. We found one other case in the literature of an eosinophilic effusion complicating recovery after acute hepatitis A infection.

These cases, although fascinating, will have little influence on clinical practice for most of us. There is, however, further fuel for debate

on the association between lung cancer and empyema which is as yet poorly understood.

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Myasthenia gravis presenting with stridor

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Abstract

The case is described of a 72 year old woman who presented with a two year history of exertional stridor in whom the diagnosis of myasthenia gravis was delayed. Although an uncommon cause, myasthenia gravis should be included in the differential diagnosis of stridor.

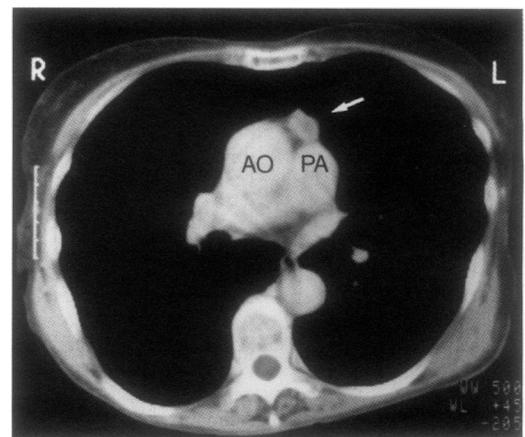
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Keywords: stridor, myasthenia gravis, malignant thymoma.

There is general awareness that myasthenia gravis causes respiratory complications, particularly ventilatory muscle weakness. However, extrathoracic airways obstruction due to vocal cord paresis is rarely reported and probably underrecognised.¹ Cases of mild laryngeal dysfunction may be completely overlooked without inspiratory lung function studies. We describe a patient who presented with exertional stridor in whom the diagnosis of myasthenia gravis was delayed by two years.

Case report

A 72 year old woman gave a two year history of exertional breathlessness accompanied by stridor. At rest her breathing was silent, but after starting to walk she developed noisy inspiration which limited her exercise tolerance to a few hundred yards. A year later she had developed chewing difficulties, with fatigue of the jaw muscles and slowness of swallowing.



Computed tomographic scan of superior mediastinum showing 2 cm thymoma lying anterior to main pulmonary artery (PA) and ascending aorta (AO).

These symptoms had caused a decline in her general state to the point where she had been admitted to a psychogeriatric unit where she was diagnosed as having depression. It was only when she developed slurring of speech, with the need to elevate her lower jaw manually when chewing, that she was referred to a neurologist. She had a past history of mild hypertension, smoked 20 cigarettes daily, and was taking nifedipine and paroxetine. On direct questioning she admitted to previous episodes of transient diplopia.

General and neurological examination at rest was normal. Shoulder girdle weakness developed with fatigue, and minimal exertion precipitated stridor. A Tensilon test showed that stridor improved, as did swallowing, following anticholinesterase administration. Electromyographic findings were suggestive of disordered neuromuscular transmission, particularly in the jaw muscles. Acetylcholine receptor antibodies were strongly positive at 136×10^{-10} mmol/l and striated muscle antibodies were positive. The results of lung function studies suggested extrathoracic airways obstruction with a reduced peak inspiratory

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