Commentary: pleural empyema and malignancy — another dimension

P H Johnson, J T Macfarlane

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.

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. 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. 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.

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.

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. 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. Intra-thoracic 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. The commonest isolates were S typhimurium and S derby, and
the most frequent clinical manifestation was
eretinitis. As the authors point out, the subtype
can be either idiopathic or hypogammaglobulinemic.

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 litera-
ture 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.

1. Wiz J, Roeslin N. Postpneumonectomy empyema does not
improve survival in bronchogenic carcinoma. Ann Thorac
et al. A clinical study on intrathoracic malignant lymph-
oma with chronic tuberculous pyothorax. Jpn J Thor Dis
3. Ichiba S, Shimizu N, Kawai K, Aoe M, Kajitani N, Hara
et al. A case of malignant lymphoma arising from the
44:739–42.
4. Fukuyma M, Ibuka T, Hayashi Y, Ooba T, Koike M,
Mizutani S. Epstein-Barr virus in pyothorax-associated
et al. Soft tissue sarcoma of the pleural cavity. Cancer
6. Roviaro G, Bartron F, Calabro F, Varoli F. The association of
pleural mesothelioma and tuberculosis. Am Rev Respir Dis
1982;126:569–71.
7. Wolfe M, Armstrong D, Lours D, Blevins A. Salmonellosis

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, my-
asthenia gravis should be included in the
differential diagnosis of stridor.
(Thorax 1996;51:108–109)

Keywords: stridor, myasthenia gravis, malignant
thymoma.

There is general awareness that myasthenia
gravis causes respiratory complications, par-
ticularly ventilatory muscle weakness. How-
ever, extrathoracic airways obstruction due to
vocal cord paresis is rarely reported and prob-
able underecognised. Cases of mild laryngeal
dysfunction may be completely overlooked
without inspiratory lung function studies. We
describe a patient who presented with ex-
ertional stridor in whom the diagnosis of my-
asthenia 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 in-
spiration 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.

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 neu-
rologist. She had a past history of mild hyper-
tension, 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 de-
veloped with fatigue, and minimal exertion
precipitated stridor. A Tensilon test showed
that stridor improved, as did swallowing, fol-
lowing anticholinesterase administration. ELEC-
 tromyographic findings were suggestive of
disordered neuromuscular transmission, par-
 ticularly in the jaw muscles. Acetylcholine re-
ceptor antibodies were strongly positive at
136 × 10−10 mmol/l and striated muscle anti-
bodies were positive. The results of lung func-
tion studies suggested extrathoracic airways
obstruction with a reduced peak inspiratory

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