Author's response: spontaneously breathing patients get tension pneumothorax

In my brief letter I did not mean to imply that Leigh-Smith and Harris found the case reports they cited as unconvincing, merely that I did not find it convincing that supra-atmospheric pleural pressure was the main explanation for the clinical condition of these patients. The ill patients in the cases cited by Leigh-Smith and Harris and reported by others3–10 all have either serious underlying lung disease, significant trauma or other problems. The index case they refer to, for example, had fallen three storeys down a lift shaft and in addition to a large pneumothorax had a ruptured spleen, left pulmonary contusion and lumbar and pelvic fractures.3 Patients with such multiple problems are likely to tolerate a large pneumothorax and consequent hypoaemia badly by others3

We therefore therefore to highlight a clinical definition for tension pneumothorax as being a pneumothorax that results in significant respiratory or haemodynamic compromise (the latter especially in ventilated patients) that reverses on thoracic decompression alone.2

While acknowledging that ventilated patients usually present at the point of decompensation, in contrast to spontaneously breathing patients who normally present during a variable period of compensation, we believe that the term 'tension pneumothorax' should continue to be used for both conditions. The one word 'tension' immediately alerts the clinician to potential decompression and the need for expedient investigation (ie, radiography or ultrasound) and/or thoracic decompression.

Spontaneously breathing patients get tension pneumothoraces

The recently published correspondence by Simpson is welcomed in so far as it correctly misleads. The fact remains that intra-pleural pressure cannot exceed atmospheric pressure during inspiration and always does during expiration (or intercostal drainage of pneumothoraces would not work). There may be merit, as Leigh-Smith and Harris suggest, in retaining the expression tension pneumothorax to signify a large rapidly expanding pneumothorax causing severe physiological consequences but the risk is that retaining the word tension will perpetuate the misunderstanding that high pressures are the cause of this. We could of course retain the expression but use tension with one of its alternative meanings in that a tension pneumothorax would be one that can and should induce feelings of tenseness or anxiety in the medical attendants but this may not be a particularly productive way to approach medical terminology.

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We believe that previous definitions of tension pneumothorax are of limited use because measurement of IPP is impractical, the extent of radiological mediastinal shift is variable4 and hypotension occurs uncommonly in spontaneously breathing patients.2


REFERENCE