

described,⁷ although the pneumoperitoneum was not under tension in either case. In both, lung disease was present and the patients required mechanical ventilation with high inspiratory pressures. Tension pneumoperitoneum can also develop without positive pressure ventilation from perforation of abdominal viscera.⁸⁻¹⁰

Possible mechanisms for air entering the peritoneal space from the pleural space have been described previously.^{11,12} Air may leak through the alveolar walls during high pressure ventilation and thence along the perivascular sheaths to the mediastinum and by the diaphragmatic openings to the retroperitoneal space and the peritoneum. This theory is supported by a recent report of pneumoretroperitoneum in a low birthweight infant associated with tension pneumothorax.¹³ There may alternatively be direct communication between the peritoneal and pleural spaces through diaphragmatic defects, which may be congenital or traumatic. A large increase in the intra-abdominal pressure, caused by tension pneumoperitoneum, as well as raising the diaphragm and causing respiratory embarrassment, can compress the inferior vena cava, causing diminished venous return, reduced cardiac output, and lowered mean arterial blood pressure. This increase in intra-abdominal pressure can high enough to compress the aorta.⁸ The clinical signs of respiratory embarrassment, abdominal distension, and possibly cyanosis in a patient with high ventilatory pressures may be an indication of raised intra-abdominal pressure. In an emergency situation, consideration should be given to decompression of the peritoneal cavity by large bore needle, as in the treatment of tension pneumothorax.

Tension pneumoperitoneum occurring in a resuscitation setting, as opposed to that associated with mechanical ventilation on the intensive care unit, has not to our knowledge been described before. Reports confirm that pneumoperitoneum under tension is very rare and appears to require a combination of lung

disease and mechanical ventilation with high inspiratory pressures. Most cases of pneumoperitoneum are secondary to anastomatic leakage or previous bowel injury. This may cause a rise in intra-abdominal pressure, especially in the presence of mechanical ventilation.

Tension pneumothorax is a well recognised complication of mechanical ventilation, especially in the presence of pre-existing lung disease. Rapid relief of the raised intrapleural pressure by needle thoracocentesis or tube thoracostomy is life saving. In the case presented, bilateral needle decompression of the chest only partially relieved the respiratory embarrassment. When a needle was inserted into the peritoneal cavity, the ventilatory pressures were markedly reduced.

Patients who develop acute respiratory distress during artificial ventilation should be assessed for signs of air under tension in the chest cavity, but may also have raised intraperitoneal pressure from tension pneumoperitoneum.

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Dystonic reactions: two case reports

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Abstract

Case reports of dystonic reactions to metoclopramide are presented. Dystonic reactions may occur after ingestion of many drugs and should be considered by accident and emergency staff in patients with a suggestive clinical presentation.

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Key terms: dystonic reactions; drug side effects

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Dystonic reactions are a well recognised complication of many drugs,^{1,2} commonly the antipsychotics and antiemetics. Acute dystonias most commonly affect children and young adults,³ with the muscles of the head and neck mainly affected. Opisthotonus and torticollis are classical, as are oculogyric crises with painful lateral or vertical deviation of the eyes. Bizarre grimaces, blepharospasm, tongue protrusion, and a subjective feeling of swelling

of the tongue may occur. Rarely spasm of laryngeal and pharyngeal muscles cause choking and respiratory distress. There is no mental impairment, although some patients may initially be considered hysterical due to the unusual appearance of some reactions.⁴ Reactions usually occur within a couple of days of starting treatment, but can also present on drug withdrawal.³ Once recognised they should be treated with an anticholinergic such as benztropine or procyclidine, which normally leads to prompt resolution.

A clear history and classical presentation may make the diagnosis evident but the following two clinical histories show that this is not always the case. In both these cases the initial lack of a history of drug ingestion delayed the correct diagnosis, the first being treated as a cervical spine injury and the other as meningitis, with inappropriate and potentially harmful drugs being given.

Accident and emergency (A&E) staff should consider drug induced dystonic reactions in patients with an appropriate clinical presentation and press for any history of drug ingestion. Many patients are often unaware of the medication they are taking, especially elderly people. Patients who abuse drugs recreationally may deny ingestion because of fear that this information will be passed to police; they should be reassured of the confidential nature of their history. In these cases treatment for possible drug induced dystonic reaction may be diagnostic as well as therapeutic.

Case reports

CASE 1

A schoolboy of 14 years presented by emergency ambulance to the A&E department. He had fallen after slipping on ice in the playground and was complaining of neck pain. The ambulancemen had fitted a cervical collar and placed him on a spinal board. On arrival he was treated as a potential cervical spine injury and standard x rays taken. These were normal, and immobilisation measures were discontinued. A torticollis was evident and over the next few minutes he developed a marked extensor spasm of his cervical spine and a fixed upward gaze. He denied taking any drugs but in view of his presentation he was given intravenous benztropine and there was a

full resolution of his symptoms and signs. Despite further questioning he maintained that he had not taken any drugs, only a drink of lemonade given to him by a friend at school.

CASE 2

On the same day a general practitioner in the city was called to see another 14 year old boy at his grandmother's house. He had come home from school early, complaining of a sore neck. There was no history of trauma and he had been perfectly well on leaving home earlier. He was afebrile and apart from "holding his head to the left side" examination was unremarkable. In view of the boy's distress he was sent to the on call paediatric team for their opinion. Initial assessment noted that he complained of sore neck, feeling numb around the mouth, difficulty in swallowing saliva, and episodes where he was unable to see. While being examined in the admissions unit he developed extensor spasm of his upper body and a fixed upward gaze. He was conscious and noted to have a "grinning" appearance. He was thought to be generally hyperreflexic and possibly to have bilateral papilloedema. Blood was taken for full blood count, C-reactive protein, blood cultures, urea and electrolytes, calcium, magnesium, and blood gases. Urine was sent for toxicology and culture. He was given intravenous dexamethasone, mannitol (300 ml of 20%), and cefotaxime. As spasms continued, after one hour he was given intravenous diazepam, then 15 minutes later procyclidine. Shortly after this the spasms settled but he continued to receive intravenous dexamethasone and cefotaxime until the next day, after which he was observed for a further 24 hours before being discharged. He denied any drug ingestion but it transpired that he had put some of his grandmother's metoclopramide in a bottle of lemonade from which he and his friend (case 1) had drunk. Diagnoses initially considered on presentation had included meningitis and tetanus.

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Missed cervical spine injury following barflying

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Abstract

The case is reported of a young woman who suffered a wedge fracture of C7 due to axial loading with a flexed spine, in an

injury caused by barfly jumping. The fracture was unstable and required surgical stabilisation. In this case the seriousness of the injury was not realised at first

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