Bilateral pneumothoraces following acupuncture

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SUMMARY

A 50-year-old woman was brought to the emergency department with shortness of breath and chest tightness following acupuncture to her upper back for a chronically painful left shoulder. She had symptoms of respiratory distress and chest X-ray revealed bilateral pneumothoraces. Symptoms resolved after insertion of bilateral Seldinger chest drains. She was admitted to the Cardiothoracic Surgery ward, chest drains were removed on the second and third days and the patient was discharged from hospital after 3 days. Clinicians and acupuncturists should be aware of this adverse event following acupuncture.

BACKGROUND

Acupuncture is an ancient Asian holistic treatment and enjoys great popularity worldwide. Each year 2.3 million traditional acupuncture treatments are carried out in the UK.¹ The process involves the insertion of very fine needles into specific points on the body. Acupuncturists are not considered healthcare workers in the UK and regulation is therefore not subject to statutory regulation. Registration with a regulatory body is on a voluntary basis.² It has been argued that stricter regulatory methods should be applied since acupuncture is an invasive procedure with potentially serious side effects. In this report, we describe one such potentially life-threatening complication of acupuncture.

CASE PRESENTATION

A 50-year-old woman with a body mass index (BMI) of 30 and a background of well-controlled asthma, hypertension and polycystic kidney disease was brought by ambulance to the emergency department with acute shortness of breath and tightness in the chest. She reported having had acupuncture to the upper part of her back and shoulders for the first time that morning. This was followed by a 'deep tissue back massage' which lasted 30 min. Before the end of the massage, she began feeling increasingly breathless. She felt minimally wheezy but tried using her Salbutamol inhaler; this did not improve her symptoms. She called 999 and when ambulance crew arrived she was mobile but gasping for breath. Oxygen saturations were 96% on room air but dropped to 84% during the short walk to the ambulance.

In the emergency department, she was clearly unwell, gasping for breath and very anxious. She could speak in short sentences. Oxygen saturation had improved to 98% on room air, respiratory rate 24/min, blood pressure 132/99 mm Hg, heart rate 117/min, temperature 35.6 °C. She had mild bilateral wheeze with reduced breath sounds in the upper zones.

INVESTIGATIONS

An ECG showed sinus tachycardia at 120/min but no other abnormalities. Chest X-ray is as shown in figure 1.

TREATMENT

Oxygen was applied at 15 L/min while bilateral Seldinger chest drains were inserted anteriorly under local anaesthetic into the second left and right intercostal spaces (the so-called 'safe triangle' was avoided since the lung edges were almost fully expanded at this point and the main bulk of the large pneumothoraces were in the apices). Her breathlessness improved markedly over the next 10 min and repeat chest X-ray confirmed reduction in the size of her pneumothoraces and adequate placement of the chest drains (figure 2).

She was admitted to hospital under the care of the cardiothoracic surgeons. The left and right chest drains were removed after 2 and 3 days, respectively, and she was discharged after 3 days in hospital.

DISCUSSION

Acupuncture is one of the most popular alternative therapies in the world and is widely considered to be relatively safe. A German study on 229 300 individuals receiving 2.2 million acupuncture treatments found the incidence of adverse events to be 8.6%. Of these, the common adverse events were minor bleeding and haematoma formation (6.1%) and pain (1.7%). Two

Figure 1 Chest radiograph at presentation, showing large bilateral pneumothoraces.

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Figure 2 Chest radiograph after insertion of bilateral Seldinger chest drains, showing adequate placement of drains and significant reduction in size of pneumothoraces.

cases of pneumothorax were reported.³ However, there are several case reports on adverse events, the most serious being injuries to thoracic organs, abdominal organs and central nervous system. Pneumothorax is the most common of these serious adverse events although it is likely to go unreported.⁴ The incidence of bilateral pneumothoraces after acupuncture is unknown. Clearly, the risk of pneumothorax when the needles are inserted into the chest wall is more relevant than when they are inserted into a limb.

Our patient had no previous hospitalisations for her asthma and no history of spontaneous pneumothoraces. That, combined with the temporal relation of the acupuncture to her symptom onset, leads us to believe that the bilateral pneumothoraces were due to the acupuncture. The British Acupuncture Council states that the depth of needle insertion depends both on the location of the point and also on the style of treatment. 'Most points are needled to a depth of between 3 mm and 5 mm, with some in quite bony places, like fingers and toes, slightly less, and some in the hip and buttock a considerable amount more, as much as 1–2 cm'.⁵

When we inserted the bilateral anterior chest drains, the needle had to be inserted 5 cm before reaching the parietal pleura. Given that the patient had a BMI of 30, it is likely that the needles

Learning points

- ▶ Acupuncture is in itself a surgical procedure and can have serious complications.
- ▶ Healthcare providers should consider the possibility of pneumothoraces in all patients presenting with acute shortness of breath following acupuncture in which needle insertion sites have included the thorax.
- ▶ Patients receiving acupuncture should be informed of possible complications and symptoms related to them.

would have needed to be inserted to at least this depth *on both sides* for the pneumothoraces to occur. We advised our patient to contact the relevant acupuncture regulatory authority given our concerns about the intervention performed.

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