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CASE REPORT

Bilateral Pneumothorax Following an Acupuncture

KHOR CC, TAN TL

Department of Emergency Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia.

ABSTRAK

Akupunktur adalah sejenis perubatan tradisional yang telah diamalkan di China selama beribu-ribu tahun. Kesan sampingan akupunktur jarang dilaporkan dalam jurnal perubatan tempatan. Ini adalah laporan kes seorang pesakit yang mendapat pneumothorak pada dua-dua belah paru-paru selepas sesi akupunktur. Seorang pesakit wanita berumur enam puluh tiga tahun tanpa sejarah penyakit datang ke hospital mengadu sesak nafas setengah jam selepas sesi akupunktur dan urutan oleh pengamal perubatan tradisional. Dalam pemeriksaan badan pesakit itu, didapati bahawa dia bernafas dengan cepat dan terdapat kekurangan pengaliran udara ke dua-dua belah paru-paru. X-ray dada yang dibuat dengan segera menunjukkan bahawa terdapat pneumothorak pada kedua-dua belah paru-parunya. Tiub dada telah dimasukan untuk merawat pneumothorak tersebut. Pesakit telah pulih dan didiscaj dari hospital selepas lima hari dirawat. Dengan peningkatan popularitи akupunktur di kalangan penduduk Malaysia, pengamal perubatan perlu meningkatkan kesedaran dan pengetahuan mereka mengenai kesan sampingan terhadap amalan alternatif perubatan tersebut.

Kata kunci: akupunktur, pneumothorak, trauma

ABSTRACT

Acupuncture is a form of complementary medicine that has been practiced in China for thousands of years. Adverse effect of acupuncture is rarely reported in local literature. This is a case of a patient who developed bilateral pneumothorax following an acupuncture session. A 63-year-old lady with no significant medical illness presented with sudden onset of shortness of breath half an hour following acupuncture and massage session by traditional medicine practitioner. On examination, she was tachypnoiec and there was reduced air entry bilaterally on lung auscultation. Urgent portable chest X-ray was done and it showed bilateral pneumothorax. Bilateral chest tubes were inserted. Patient was discharged well

Address for correspondence and reprint requests: Tan Toh Leong. Department of Emergency Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia. Tel: +603-91456482 E-mail: sebastianttl@yahoo.co.uk

following five days of hospitalization. As acupuncture is gaining popularity among Malaysian population, medical practitioners need to increase their awareness and knowledge regarding the adverse effect of such alternative practice.

Keywords: acupuncture, pneumothorax, trauma

INTRODUCTION

Acupuncture is a form of complementary medicine that has been practiced in China for thousands of years. Treatment with acupuncture consists of inserting hollow needles of 10-100 mm in length at various depths at muscular tissues (Grusche & Egerton-Warbuton 2017). In recent decades, it has gained popularity in Western medicine with its proven effectiveness in certain medical conditions such as chronic pain (Huisma et al. 2015). World Health Organization has published a report listing a number of diseases or conditions for which acupuncture is proven to be effective (World Health Organization 2002). The diseases include allergic rhinitis, headache, low back pain, sciatica, morning sickness and depression. However, this practice carries certain serious risks and complications. This is a case report of a patient who developed bilateral pneumothorax following an acupuncture session.

CASE REPORT

A 63-year-old lady with no significant medical illness presented with sudden onset of shortness of breath half an hour following acupuncture and massage session by traditional medical practitioner. The session lasted one hour. It included 30 minutes of acupuncture over posterior upper back, and 30 minutes of massage Guasa style and cupping (Figure 1). Patient was laid in prone position during the entire session. On further questioning, patient gave one-month history of intermittent productive cough. She had sought treatment in general practitioner and was given a course of antibiotic. She denied any fever, loss of weight, loss of appetite or

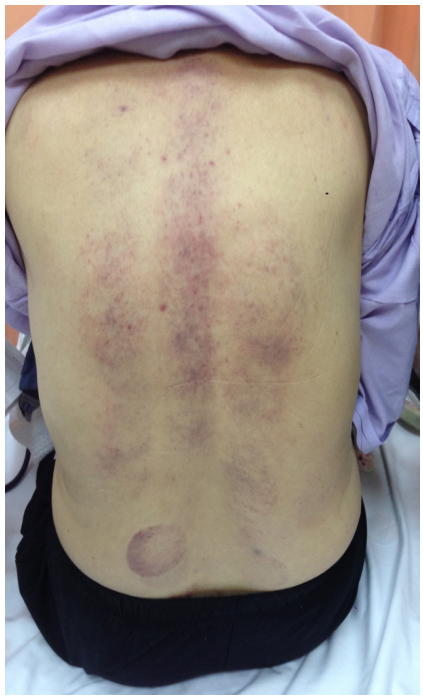

Figure 1: Patient's back after acupuncture and massage session

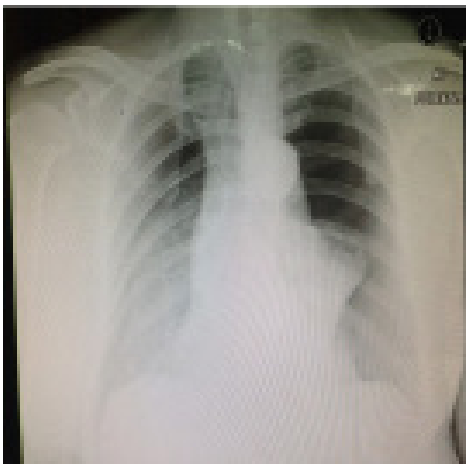

Figure 2: Chest X-ray showing bilateral pneumothorax

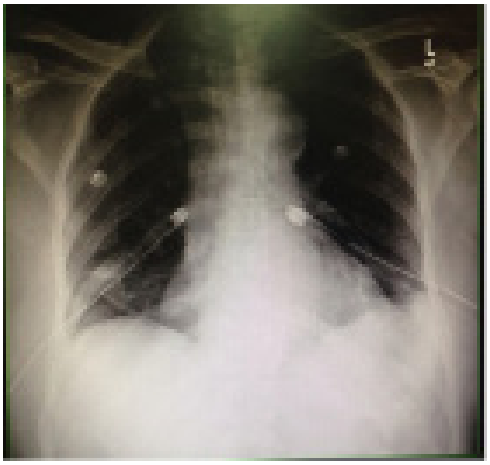

Figure 3: Chest X-ray post bilateral chest tubes insertion showing re-expansion of both lungs

haemoptysis. She denied chest pain or heart failure symptoms.

Upon arrival at Emergency Department, she was tachypnoiec. Her vital signs were respiratory rate 28/min, blood pressure 142/86 mmHg, pulse rate 79/min, temperature 37˚C and her oxygen saturation was 100% under high flow mask 15L/min. On examination, her trachea was central, and jugular venous pressure was not raised. On lung auscultation, there was reduced air entry bilaterally. There were no rhonchi or crepitation. Cardiovascular and gastrointestinal examinations were unremarkable. Urgent portable chest X-ray was done and showed bilateral pneumothorax (Figure 2).

Both left and right chest tubes were inserted (Figure 3). The chest drains were functioning and fluctuating. Her blood investigations showed total white cell count of 15.8 x 10^9/L predominately neutrophils, and C-reactive protein was 0.06 mg/L. She was started with empirical antibiotic (intravenous ceftriaxone and oral azithromycin) to cover for atypical community acquired pneumonia.

Unfortunately, patient developed complications from the chest tube insertion during hospitalization. She had right pericatheter haematoma and bilateral subcutaneous emphysema. CT thorax did not show any injury to major blood vessels. Cardiothoracic surgery team reviewed the patient and opted for expectant management. No surgical intervention was done.

Throughout admission, patient's condition improved. The pericatheter hematoma and subcutaneous emphysema resolved. Left chest tube was removed on day 4 of insertion while right chest tube was removed on day 5 of insertion. Patient was discharged well with oral antibiotics.

DISCUSSION

Pneumothorax is defined as the presence of air in the pleural cavity i.e. between lung and chest wall (MacDuff

et al. 2010). If the quantity of air is large, it can collapse the lung and cause respiratory failure. Pneumothorax can be broadly categorized into primary and secondary pneumothorax. It can also be categorized as spontaneous, traumatic or iatrogenic. Acupuncture is one of the iatrogenic causes of pneumothorax. More common iatrogenic causes of pneumothorax are transthoracic needle aspiration, subclavian vein catheterization, thoracentesis, transbronchial lung biopsy, pleural biopsy and mechanical ventilation (Choi 2014). Symptoms of pneumothorax include shortness of breath, chest pain, diaphoresis or cough. Physical examinations may reveal reduced breath sound and chest expansion. In severe cases such as tension pneumothorax, patients may present with respiratory distress, hypotension, tachycardia and deviated trachea.

As acupuncture is becoming more popular, there are more reports on its complications or adverse effects. Unskilled practitioners who lack anatomical knowledge may cause complications of acupuncture from incorrect needling angle or depth (Peuker et al. 1999). Most of the reported data are from case reports or case series. According to systematic review done by Ying et al. (2016) there are 128 cases and 51 cases of pneumothorax induced by acupuncture in Chinese articles and other language articles respectively. In the paper, five mortalities were reported. There was even a case report of hemothorax following an acupuncture session (Karavis et al. 2015). In another systematic review, common adverse effects of acupuncture in China from 1980 to 2013 were pneumothorax, central nervous system injury and solid organ injury (Wu et al. 2015).

To date, the association of pneumothorax following acupuncture is solely based on case reports. Thus, the true incidence may be under reported. There was no well-designed prospective study to analyze the adverse effect of acupuncture. As acupuncture is more widely available for treatment, there is a need to ascertain the risk of developing pneumothorax in acupuncture.

We hope that this case report can highlight the adverse effect of acupuncture practice in Malaysia. To the best of our knowledge, there was no case report which mentioned the complications of pneumothorax following acupuncture in Malaysia, presumably due to under reporting. In Emergency Department, if a patient develops shortness of breath or chest pain following acupuncture session, medical officers need to think at the back of their minds that pneumothorax could be one of the differential diagnosis. Likewise, in a patient with so-called spontaneous pneumothorax, detailed history and thorough physical examination may reveal that acupuncture is the iatrogenic cause.

Essentially, treatment of pneumothorax in this case would be the same as other causes of pneumothorax with immediate attention to ABC (airway, breathing and circulation). Tension pneumothorax, a life threatening condition, needs to be ruled out, where emergency needle

thoracotomy need to be performed. Supplemental oxygen, 100% oxygen via high flow mask, should be given to all patients. Ward observation, simple aspiration or chest tube thoracotomy are treatment options based on the size of pneumothorax and severity.

CONCLUSION

With the wide usage of complementary medicine among Malaysian population, medical practitioners need to increase their awareness and knowledge regarding the adverse effect of such alternative practice. More data is needed regarding the incidence of adverse effects of complementary medicine such as acupuncture in medical literature. Traditional medicine practitioner should adopt modern medicine approach in developing evidence based protocol for safety precaution in acupuncture practice.

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REFERENCES

Choi, W.I. 2014. Pneumothorax. *Tuberc Respir Dis (Seoul)* **76**(3): 99-104.

Grusche, F., Egerton-Warbuton, D. 2017. Traumatic pneumothorax following acupuncture: A case series. *Clin Pract Cases Emerg Med* **1**(1): 31–2.

Huisma, F., Konrad, G., Thomas, S. 2015. Pneumothorax after acupuncture. *Can Fam Physician* **61**(12): 1071-3.

Karavis, M.Y., Argyra, E., Segredos, V., Yiallouroy, A., Giokas, G., Theodosopoulos, T. 2015. Acupuncture-induced haemothorax: A rare iatrogenic complication of acupuncture. *Acupunct Med* **33**(3): 237-41.

MacDuff, A., Arnold, A., Harvey, J. 2010. Management of spontaneous pneumothorax: British Thoracic Society pleural disease guideline. *Thorax* **65**(Suppl 2): ii18-31.

Peuker, E.T., White, A., Ernst, E., Pera, F., Filler, T.J. 1999. Traumatic complications of acupuncture. Therapists need to know human anatomy. *Arch Fam Med* **8**(6): 553-8.

World Health Organization. 2002. *Acupuncture: Review and analysis of reports on controlled clinical trial.* Geneva: World Health Organization.

Wu, J., Hu, Y., Zhu, Y., Yin, P., Litscher, G., Xu, S. 2015. Systematic review of adverse effects: A further step towards modernization of acupuncture in China. *Evid Based Complement Alternat Med* **2015**: 432467.

Ying, X., Wang, P., Xu, P., Zhu, B. 2016. Pneumothorax associated with acupuncture: A systematic review and analysis. *Acupuncture and Related Therapies* **4**(4): 17-25.

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