

# Pneumothorax Following Acupuncture

*Oladele Olusanya, MD, and Irfan Mansuri, MD*

Acupuncture is an alternative medicine procedure that in recent years has achieved immense popularity with the public.<sup>1,2</sup> Several authors have voiced concerns, however, about the lack of regulations for acupuncture and the possibility of serious complications following the procedure.<sup>3-6</sup> We hereby report a case of unilateral pneumothorax occurring as a complication of acupuncture treatment.

## Case Report

A 39-year-old woman came to the emergency department of a local community hospital complaining of chest pain and shortness of breath of 6 hours' duration. Her symptoms started during an acupuncture session in which six 30-gauge 3/4-inch acupuncture needles were placed in the skin of the posterior chest wall. She had received this acupuncture treatment for chronic neck pain for the past 10 years but had switched to a different acupuncturist 2 weeks earlier. Her medical history was otherwise unremarkable. She did not smoke and had no history of pulmonary disease.

Her symptoms, which started almost immediately after insertion of the needles, were so severe that the acupuncture session was terminated within 15 minutes. She had then gone home to rest but had to come to the hospital when her shortness of breath became unbearable. During her physical examination she was in moderate respiratory distress. Her vital signs were stable: pulse 88 beats per minute, respirations 36 per minute, temperature 98°F, and blood pressure 180/72 mmHg. There was no evidence of cardiac failure, and findings on an electrocardiogram were normal. She had decreased breath sounds and hyperresonance of the right lung field. A di-

agnosis of a right-sided pneumothorax (35 percent) was confirmed by a chest radiograph. Her pneumothorax was treated with immediate placement of a thoracostomy tube with underwater seal drainage on the affected side. She made an uneventful recovery, findings on repeat radiographs confirmed that the pneumothorax had resolved, and she was discharged home after 3 days of hospitalization.

## Discussion

Acupuncture, a traditional procedure that has been practiced in China for 2000 years, has only recently become popular in Western countries. It has been used to treat medical conditions ranging from chronic pain and asthma to substance abuse and to promote the physical conditioning of athletes.<sup>7-9</sup> The scientific explanation for acupuncture remains obscure and controversial, although it has been shown to modulate not only pain perception and propagation but also cardiovascular, respiratory, and digestive functioning through various mechanisms including alteration of opioid and cholinergic pathways.<sup>8-12</sup>

Several complications following acupuncture treatment have been reported in the Western medical literature since the mid 1970s, when acupuncture came into vogue. These complications include transmission of hepatitis virus, human immunodeficiency virus, and other infectious agents; trauma from forgotten or fragmented needles; and penetration of vital internal organs.<sup>4-6</sup> The most important of these complications appears to be pneumothorax as a result of lung puncture by a thoracically placed needle.<sup>13,14</sup>

It might seem difficult to understand how such small, innocuous-looking, 3/4-inch acupuncture needles placed under the skin could puncture the lungs and produce a pneumothorax. It is possible that standard techniques using regulation-size needles are not always followed by practicing acupuncturists. What is known is that this development is well documented in the literature. In a

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From the Department of Family Medicine (OO, IM), Texas Tech University Health Sciences Center, El Paso. Address reprint requests to Oladele Olusanya, MD, Family Practice Center, 10060 Rushing #23, El Paso, TX 79924.

European series pneumothorax accounted for 12 percent of all reported acupuncture complications.<sup>15</sup> Acupuncture-related pneumothorax is similar to pneumothorax in other situations. It is diagnosed from the history, physical findings, and chest radiography. Treatment with chest tube placement is usually rapidly effective. Occasionally pneumothorax can take days rather than hours to develop<sup>13</sup>; and in rare cases the development of pneumothorax following acupuncture can be life-threatening, as in bilateral or tension pneumothorax.<sup>14</sup>

Many patients currently seen by physicians in the United States and other western countries seek out alternative health modalities such as acupuncture, often without their physician's knowledge.<sup>1,2</sup> It has been estimated that every year in the United States, patients spend more out-of-pocket health care dollars on alternative medical care than on conventional physician visits.<sup>1</sup> In parallel to its increasing popularity with the public, acupuncture has also begun to receive a measure of support and endorsement from many influential health agencies. Many insurance organizations are now modifying their regulations to allow reimbursement for such unconventional treatment modalities as acupuncture.<sup>1</sup>

It is important, therefore, that all physicians, especially primary care physicians, be aware of this trend and try to acquire as much knowledge as possible about acupuncture and other alternative therapies. We believe information about these procedures should be incorporated into training for medical students and primary care residents. Not only must physicians of the 1990s be able to recognize the effects and complications of alternative therapies when they occur, they should also be able to offer accurate information and guidance to patients regarding the desirability and efficacy of these procedures and the possibility of complications when they are used. To this end, it is hoped that this brief report will help increase awareness among all medical practition-

ers, especially family physicians, including those in training, of this growing health trend.

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