Family Medicine & Medical Science Research

Tseng et al., Fam Med Med Sci Res 2014, 3:3
DOI: 10.4172/2327-4972.1000126

Case Report Open Access

# Pneumothorax and Subcutaneous Emphysema Caused by Intrathoracic Migration of aKirschner Wire

**Chi-Chou Tseng**[1], **Huan-Tee Chan**[1], **Kin-Weng Wong**[2], **Shih-Hau Fu**[3], **Wei-Ting Lin**[3,4*] **and Chung-Da Wu**[4]

[1]*Department of Orthopaedics, Chi-Mei Medical Center, Liouying. Tainan, Taiwan, Republic of China*

[2]*Department of Orthopaedics, Chi Mei Medical Center, Chiali, Tainan, Taiwan, Republic of China*

[3]*Department of Physical Therapy, Shu Zen College of Medicine and Management, Tainan, Taiwan, Republic of China*

[4]*Department of Orthopaedics, Chi Mei Medical Center, Tainan, Taiwan, Republic of China*

[*]**Correspondence author:** Dr. Wei-Ting Lin, Department of Orthopaedics, Chi Mei Medical Center, Tainan, Taiwan, Tel: +062812811; E-mail: aapriliaa@gmail.com

**Rec date:** Jun 19, 2014; **Acc date:** Jul 14, 2014; **Pub date:** Jul 17, 2014



## Case Report

An 84-year-old man presented to our emergent department with sudden onset of chest pain. He had the history of chronic dislocation of right shoulder and just received open reduction and Kirschner wire fixation two months before. Additionally, he had dementia and received long term care in the nursing home. On physical examinations, bilateral neck subcutaneous emphysema and decreasing breathing sound over right lung field were noted. The radiographic examination revealed subcutaneous emphysema, and pneumothorax was suspected (Figure 1). In addition, severe inward displacement of Kirschner wire was noted (Figure 1). Further computed tomography (CT) confirms the presence of right pneumothorax, pneumomediastinum, and diffuse neck and chest wall emphysema (Figure 2). Moreover, the intra-thoracic migration of wire was found. Therefore, the patient underwent chest tube thoracostomy and removal of Kirschner wire.The post-operative course was smoothly, and the patient was discharged uneventfully 1 week later.

**Figure 1:** The radiographic examination revealed subcutaneous emphysema, and severe inward displacement of Kirschner.

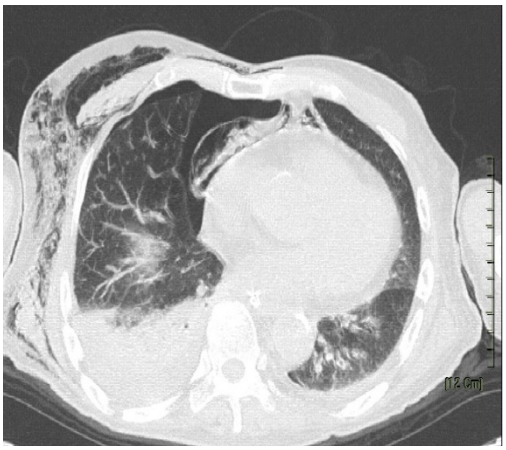

**Figure 2:** Computed tomography showed the presence of right pneumothorax, pneumomediastinum, and diffuse neck and chest wall emphysema.

Pins or wires are frequently used for the fixation of fracture or dislocation in the common orthopedic clinical practice. However, migration of these internal fixation devices can uncommonly develop, and timing of migration after internal fixation varies, and may range from the first day to 21 years [1]. Occasionally, the migration of the device can cause life-threatening complications, especial for migration into intra-thoracic space. Its associated complications include cardiac tamponade, pseudo-aneurysm, aortopulmonary fistula, pneumothorax, hemoptysis, and hem thorax [2,3]. In our case, his dislocation was fixed with three Kirschner wires initially. Because his caregiver provided the wrong information that one wire was dislodged, only two wires were removed during the follow-up. Therefore, one wire remained in his shoulder and physician did not take care about this. Finally, the migration of the missing wire caused this severe complication. Our case may suggest that follow-up of radiography after removal of the fixation wire should be important if the clinical information about whether all of the wires have been removed cannot be confirmed. Moreover, physicians should be keep alert this possible complications caused by intra-thoracic migration of Kirschner wire if wire was not removed. Early recognition by regular follow-up of radiography can prevent from the possible fatal events.

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