

Thoracoscopic retrieval of an intrapulmonary sewing needle: A case report

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Abstract

The intrathoracic sewing needle is an exceedingly rare condition mildly documented in the literature. Given the needle's tendency to migrate, it must be removed as soon as possible, and the minimally invasive technique should be tried first.

KEYWORDS

sewing needle, thoracoscopy, thorax

1 | INTRODUCTION

The intrathoracic sewing needle is rarely encountered in clinical practice. Only a few case reports have documented this condition in adults.¹

Metallic foreign bodies retained in the chest are most of the time asymptomatic,² but they can occasionally lead to some complications such as haemothorax, pneumothorax, subcutaneous emphysema, thoracic wall laceration, pneumomediastinum, lung abscess, empyema, and tracheoesophageal fistula.³

The penetration of the sewing needle in the pleural space can occur accidentally or intentionally in patients with a history of mental illness.⁴

Currently, there is no consensus on the best treatment modality for such cases. Many surgeons do not recommend the removal of this aberrant needle in asymptomatic patients,⁵ and some others suggest surgical removal to prevent its migration into the vessels and the development of severe pulmonary complications.⁶

Traditionally, thoracotomy has been performed to locate and retrieve such foreign bodies. Recently, the efficiency of

thoracoscopy, as a well-established technique for the removal of retained foreign bodies from the pleural space, has been proved.⁵

We describe herein a successful surgical removal of an aberrant intrapulmonary needle.

2 | CASE PRESENTATION

A 23-year-old man, without any history of psychiatric illness, was referred to our department for the incidental discovery of a foreign body (sewing needle) in the laterobasal segment of the right lower lung lobe on CT urogram during a follow-up for nephrolithiasis.

The patient denied any knowledge of retained needles. Initially, he had no symptoms, and physical examination did not reveal any abnormality. A chest X-ray showed a linear opacity of thin metallic density about 40 mm long suggestive of a sewing needle in the right lower lobe (Figure 1). Chest computed tomography confirmed these findings (Figure 2).

Three months later, the patient became symptomatic and consulted the Department of Pneumology for several episodes

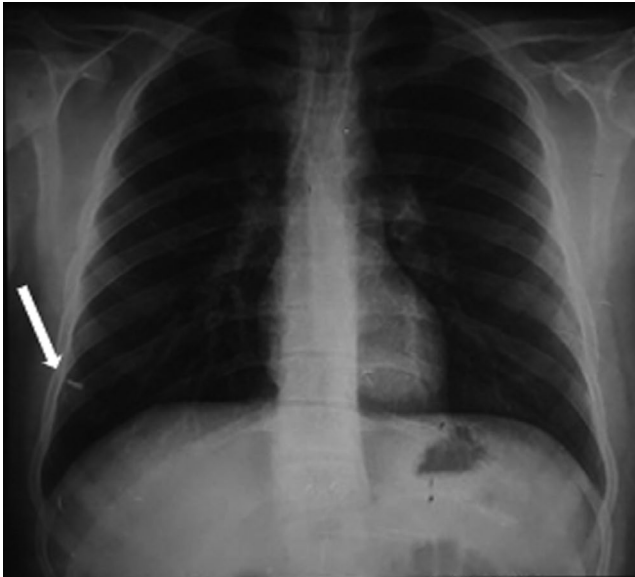


FIGURE 1 Chest X-ray view: intrathoracic needle (white arrow)

FIGURE 2 Chest computed tomography scan showing metallic needle in the pleural space. A: axial section. B: 3-dimensional reconstruction view

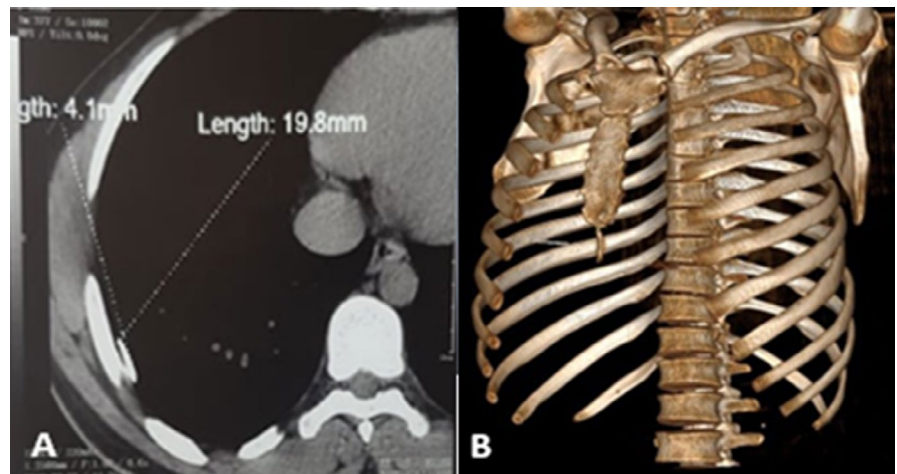
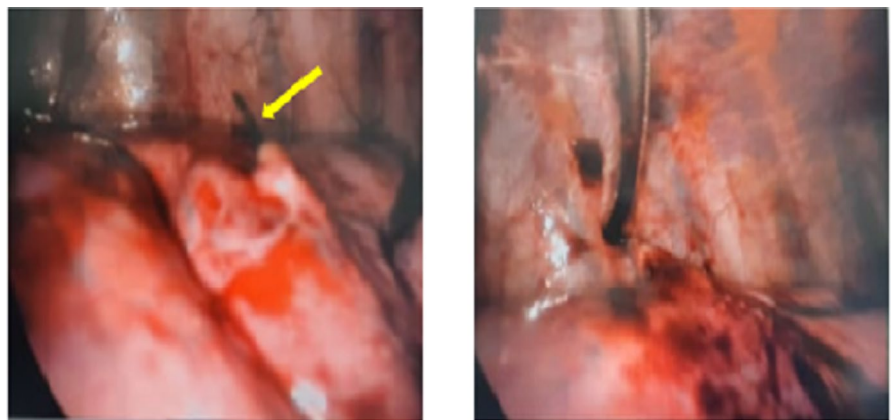


FIGURE 3 Intraoperative images showing intraparenchymal sewing needle



ventilation. At intraoperative exploration, the metallic sewing needle was visualized impregnated in the lung parenchyma of the right lower lobe, and the visceral pleura surrounding the foreign body had granulomatous changes due to inflammation (Figure 3). The needle was successfully grasped within a forceps and taken out (Figure 4). No further lung repair was needed. An intercostal drain was placed for two days after the procedure. The postoperative course was uneventful, and the patient was discharged on the 4th postoperative day.

3 | DISCUSSION

Intrapulmonary sewing needles are relatively rare in clinical practice. They may enter the body via four routes: transcutaneous, transbronchial, transesophageal, or hematogenous.⁷ The clinical history often gives clues about the etiology. In our case, the entranceway of the needle was challenging to

of hemoptysis. The extraction of the needle turns out to be mandatory. The thoracoscopic approach was decided. The patient was operated on under general anesthesia with one-lung

determine.

Generally, aberrant needles in the thorax do not produce significant symptoms since they are relatively inert



FIGURE 4 The removed needle

and do not trigger any inflammatory changes in the lung.⁸ Furthermore, they may produce nonspecific features like coughing, dyspnea, chest pain, and hemoptysis.⁹ Our patient was initially asymptomatic and unaware of the presence of the needle until its incidental discovery during a follow-up for urolithiasis.

Pneumothorax, haemothorax, empyema, lung abscess, and broncho-esophageal fistula have been reported in cases in which the aberrant intrapulmonary needle was left for a long time.⁹ That is why many surgeons suggest that aberrant intrathoracic needle should always be removed as early as possible, even in asymptomatic patients.⁶

The current treatment alternatives are rigid and flexible bronchoscopy, video-assisted thoracoscopy, and thoracotomy.

Bronchoscopic removal may be attempted, but, in cases where the needle penetrates the lungs parenchyma (as in our case), the surgical approach became mandatory.⁹

VATS (video-assisted thoracoscopy) is a minimally invasive technique adopted by many thoracic surgeons for the removal of intrathoracic foreign bodies.¹⁰ This technique yields better cosmetic results with less postoperative pain and earlier recovery. Furthermore, it reduced morbidity and length of hospital stay.¹¹

If the needle is visible, as in our case, it may be easily removed using a forceps during thoracoscopy. Given the needle's tendency to migrate, the latter could be invisible in the lung parenchyma. In these cases, perioperative fluoroscopy is recommended by several authors since it facilitates the localization and successful retrieval of the foreign body.² Furthermore, other techniques could be useful like CT-guided methylene blue staining and CT-guided hook wire localization.¹²

There are two different techniques for thoracoscopy: VATS and MT (medical thoracoscopy). Chest physicians perform the latter with rigid thoracoscope with one entry in the chest under local anesthesia.⁵ Tie et al published the first report of medical thoracoscopic removal of a sewing needle from the pleural cavity under conscious sedation.¹³ Open

surgery must be saved for foreign bodies that could not be removed by thoracoscopic attempts. Our patient underwent a right thoracoscopy for the removal of the sewing needle.

4 | CONCLUSION

The intrathoracic sewing needle is a rare condition. If it is left untreated, it may lead to infectious complications or migrate in the pleural space with the risk of life-threatening injuries of the intrathoracic structures. The needle must be removed as soon as possible, and the minimally invasive technique should be tried first.

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CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

IBI: wrote the manuscript; HM: conceived the study; HL: helped in data interpretation and manuscript evaluation; WR: acquired the data; SH and SC: critically revised the manuscript.

ETHICAL APPROVAL

Ethical approval was not required, and patient identifying knowledge was not presented in the report.

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