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Intrathoracic migration of a breast implant seven years after thoracotomy. A case report

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ABSTRACT

A 52-year-old woman, who had previous bilateral subpectoral breast augmentation, underwent thoracotomy for a right upper lobe pulmonary adenocarcinoma. Seven years after her thoracic surgery, the patient noticed a reduction in her right breast volume, with shortness of breath and cough. A computed tomography study of the chest revealed intrathoracic migration of her right breast implant with no sing of capsule rupture. Subsequent video-assisted thoracoscopy confirmed this diagnosis.

1. Introduction

Intrathoracic migration of silicone breast implants after augmentation mammoplasty has been described previously [1,2]. There is one reported case of intrapleural implant migration after thoracotomy [3], and two reported cases after thoracoscopy [4,5]. There is also one reported case of spontaneous intrathoracic implant migration after reconstruction mammoplasty for breast cancer [6].

We report a case of intrapleural implant migration seven years after the initial thoracotomy.

2. Case presentation

The patient is a 52 years old woman who underwent bilateral breast augmentation with silicone implants 23 years before the current admission.

In May 2012, the chest CT imaging of this patient demonstrated a >5 cm right upper lobe pulmonary tumor; the subsequent bronchoscopy with needle biopsy revealed an advanced adenocarcinoma of the lung with mediastinal lymph node metastasis.

In August 2012, the patient underwent mediastinal and hilar lymph node dissection via open surgery through right-sided muscle-sparing thoracotomy. The therapy after surgery was continued with chemotherapy and 70 Gy radiotherapy of primary lung tumor with mediastinal lymph nodes in 2012, 40.5 Gy in 2014 and radiotherapy of the right chest wall with 40 Gy in 2017 because of skin metastasis.

Upon awakening one morning in June 2019, the patient reported an inability to palpate her right breast implant. She also reported a visible asymmetry of her breasts that was new from the previous day. Even more, she experienced also exercise dependent shortness of breath and cough. A subsequent chest CT demonstrated the absence of the right breast implant from its expected location in the right anterior chest wall (Fig. 1) and reflected its intrathoracic migration, presumably through the thoracotomy chest wall defect from 7 years before. In the CT scan, there were no signs of the rupture of the silicone implant as there was a clear margin of it (Fig. 2).

In August 2019 the patient underwent VATS that revealed an unruptured silicone breast implant within the posterior area of the right pleural space (Fig. 3.). It was discovered at surgery a hole in the intercostal musculature that communicated with a defect in the breast implant cavity (Fig. 4). During the VATS, the surgeon removed the implant without its injury. The surgeon also repaired the communicating defects in the posterior implant capsule and intercostal musculature. For the symmetry of the breast, the left implant was also removed by the agreement of the patient. It was assumed that laceration must have occurred due to mediastinal and lung lesion radiotherapy from previous years.

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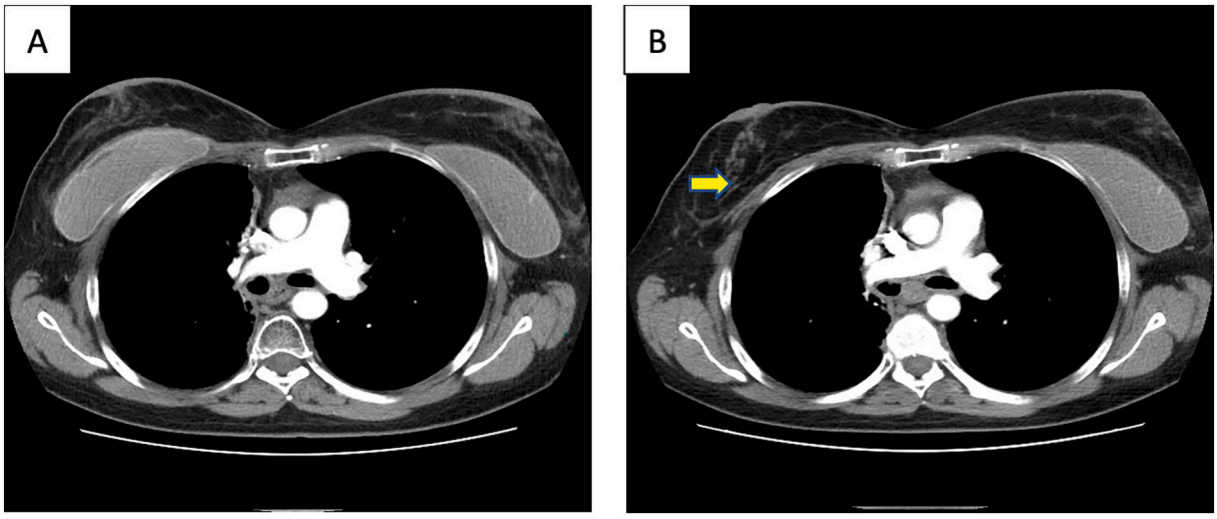

Fig. 1. Computed tomographic scans of the chest: A - presence of bilateral breast implants in previous imaging; B - absence of right- sided breast implant (indicated with an arrow).

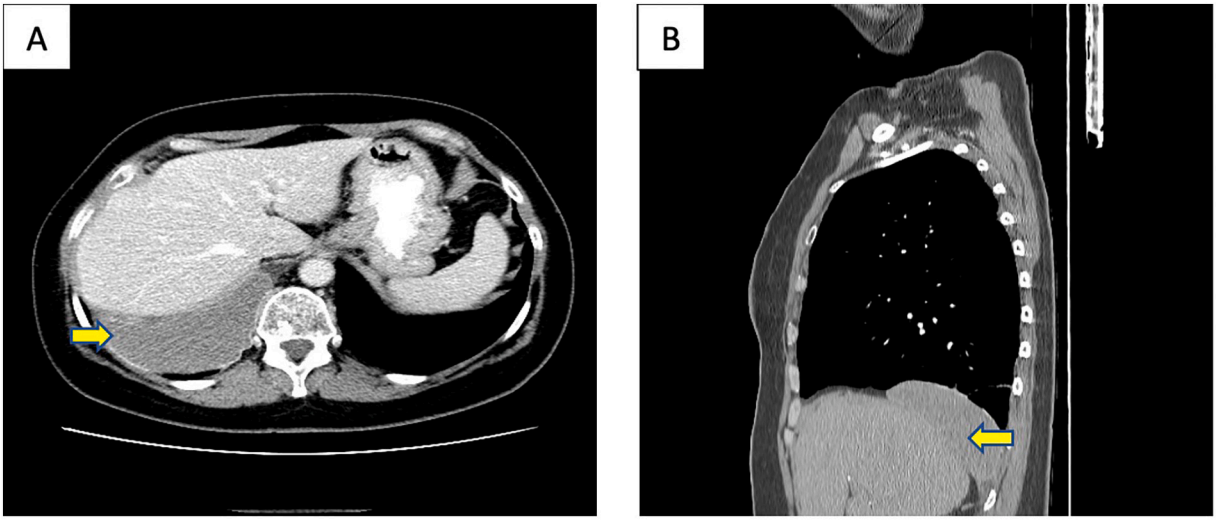

Fig. 2. Computed tomographic scans of the chest: A and B - the silicone implant (indicated with an arrow) is located dorsobasally in the right hemithorax, with a clear margin.

3. Discussion

In this described case, the posterior wall of the capsule of the silicone implant was partially opened during the initial thoracotomy and closed with specific attention. Another specific attention was paid to adequate closure of the chest wall. It is conceivable that a total of 150.5 Gy radiation of mediastinum and right-sided chest wall caused slow going wound healing disorder and the negative intrathoracic pressure led to the migration of the silicone breast prosthesis through a gap between two sutures of the thoracotomy. However, the 7 years interval from the initial thoracotomy to the implant migration is unique to this case because the previously reported intrathoracic implant migration occurred 12 days after thoracotomy [3] and five and six months respectively after VATS [4,5]. In our case, the implant was able to migrate despite having been in place for about 23 years. In previously reported cases implants migrated 14 [3], 22 [5] and 23 [4] years after being in place, during which time extensive fibrous capsular formation around the implant would be expected. In all cases reported above and in our case the implant migration occurred on the right side [1–6].

Unfortunately, due to the patient's migration background, no medical reports regarding the manufacturer and the type of breast implant from augmentation mammoplasty abroad could be identified.

4. Conclusion

This case underlines the necessity of performing thoracotomy if possible, in lower intercostal spaces to avoid the implant capsule and closure of the chest wall with specific attention in patients with breast implants.

This work has been reported in line with the SCARE 2020 criteria [7].

Author form

All authors certify that they have seen and approved the final version of the manuscript being submitted. They warrant that the article is an original work, hasn't received prior publication and isn't under consideration for publication elsewhere.

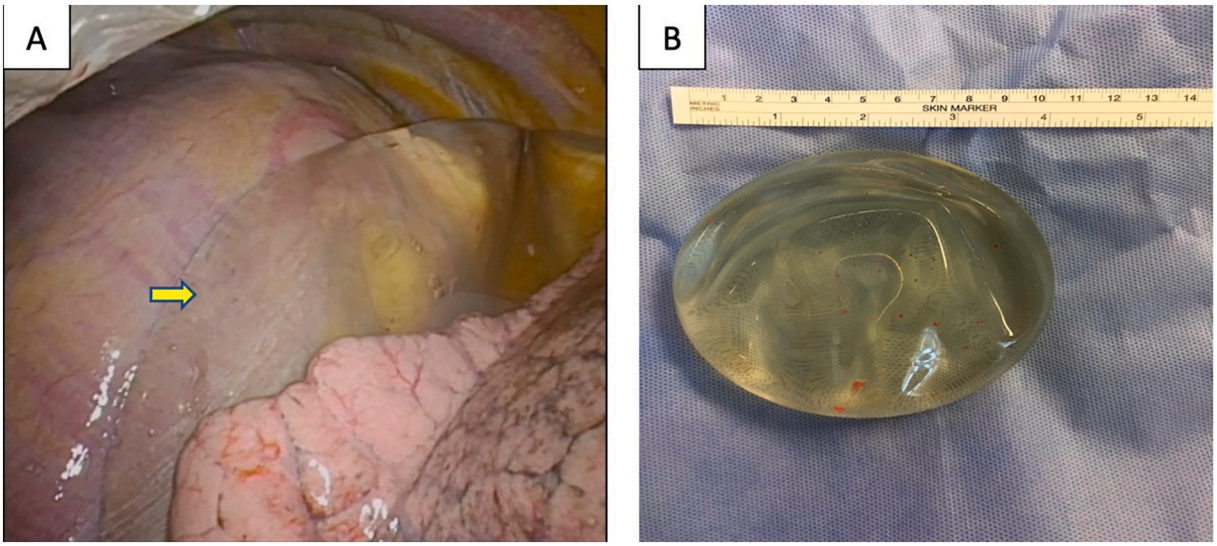

Fig. 3. A - intraoperative photo showing intrathoracic location of the breast silicone implant above the diaphragm (indicated with an arrow); B - removed unruptured silicone implant.

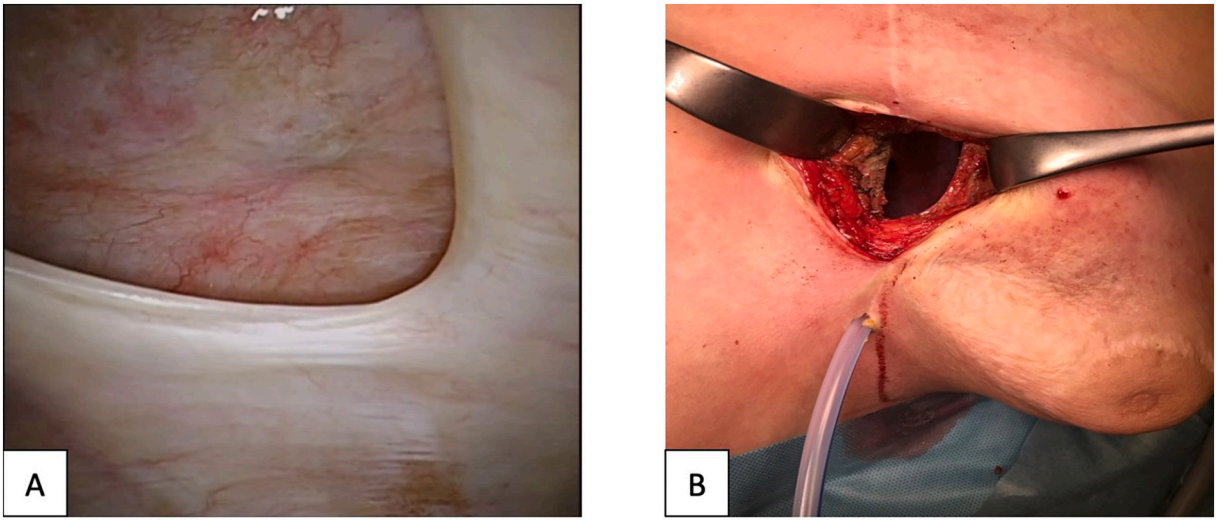

Fig. 4. Intraoperative photo: A - defect in 5th intercostal space, view from inside; B - defect in 5th intercostal space, view from outside.

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Ethical approval

Our institution does not require ethics approval for case reports.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Registration of research studies

Not Applicable.

Guarantor

Fuad Damirov, MD
Michael Lindner, MD

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CRediT authorship contribution statement

Fuad Damirov, MD: Writing - original draft preparation, Data Collection.
Julia Zimmermann, MD: Data curation, Software.
Christian Ketscher, MD: Visualisation.
Rudolf Hatz, MD, PhD: Supervision, Validation.
Farkhad Manapov, MD, PhD: Resources.
Michael Lindner, MD: Writing – Reviewing and Editing, Methodology.

Declaration of competing interest

No conflicts of interest to be declared.

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