

Transparenchymal thoracoscopic retrieval of a contraceptive implant pulmonary embolism



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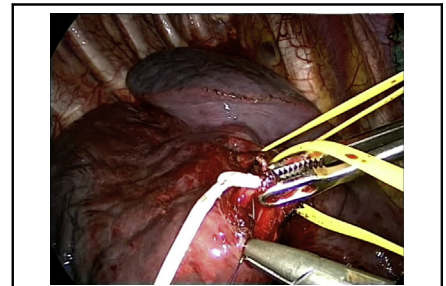
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CENTRAL MESSAGE

Thoracoscopic lung-sparing approach through the parenchyma for retrieval of lung contraceptive implant emboli is effective for distal migration in vasculature and if upstream thrombosis exists.

See Commentary on page 242.

Video clip is available online.

Migration of subdermal contraceptive implant into a pulmonary artery could become a more common problem.^{1,2} The strategy should weigh the need to extract this foreign body that is potentially responsible for symptoms or complications, and the necessity to favor a minimally invasive approach.

We report a thoracoscopic retrieval procedure of this device through the parenchyma after failure of endovascular strategy. Informed written consent was obtained from the patient for the publication of her study data. Our ethical review board (517-2021-173) approved the study (09-15-2021).

A 21-year woman requested Nexplanon (MSD) removal because she desired pregnancy. The patient had never been able to feel the implant and was asymptomatic. Computed tomography scan showed the implant in a subsegmental artery of S8 (Figure 1). Pulmonary angiography showed that the artery was occluded near its origin, so no retrieval with loop was attempted (Figure 2). Catheterization should be the first strategy to attempt, with several successes in literature.^{1,2} However, a long delay between migration and endovascular retrieval attempt is suspected to be a risk factor of failure because of adherences with the endothelium. We proposed surgical retrieval 4 years after implantation. Thomas and colleagues³ reported the thoracoscopic retrieval of this foreign body with a short arteriotomy in the fissure, with downstream and upstream clamping. In

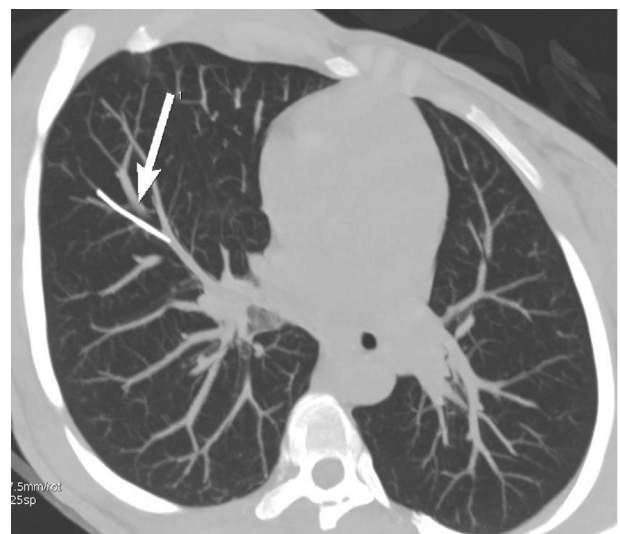


FIGURE 1. Nexplanon (MSD) (arrow) in subsegmental artery of S8 at computed tomography scan.

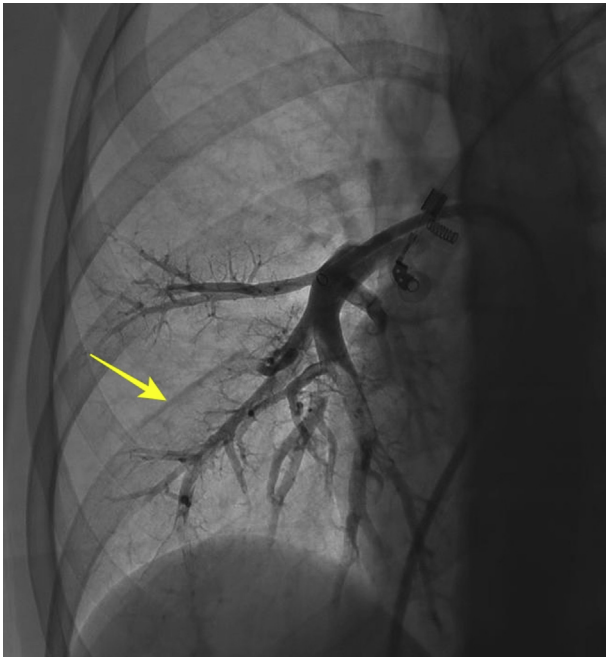
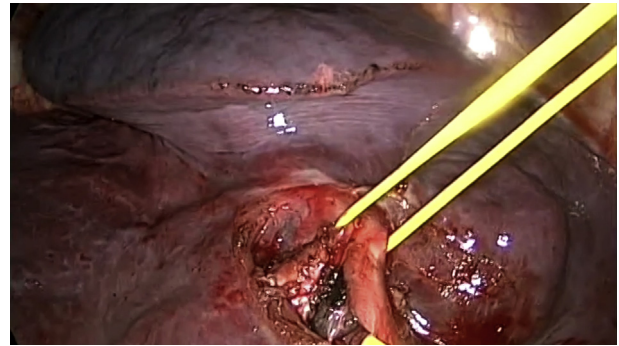


FIGURE 2. Pulmonary angiography: No opacification of artery branch containing the Nexplanon (MSD) implant (*arrow*).

our case, because the proximal end of the device was deep into the lung vasculature with artery thrombosis, arteriotomy in the fissure could not be performed.³⁻⁵ We decided on a transparenchymal approach (**Video 1**). Blood loss was 30 mL. Postoperative course was uneventful with discharge at day 3. The patient was still asymptomatic 6 months following surgery with normal chest radiographs.



VIDEO 1. Three-port anterior thoracoscopy for lung-sparing retrieval of contraceptive implant through the parenchyma. Video available at: [https://www.jtcvs.org/article/S2666-2507\(22\)00112-2/fulltext](https://www.jtcvs.org/article/S2666-2507(22)00112-2/fulltext).

Minimally invasive surgery is an option to consider among different efficient surgical approaches according to the position of the implant in the pulmonary vasculature.

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