

Iatrogenic Pneumomastia: Postoperative Air Leak and Cosmetic Liposuction as Benign Causes of Breast Air Density

Hyunji Lee, MD¹, Minah Lee MD², Jung Hyun Yoon, MD, PhD¹, Min Jung Kim, MD, PhD¹,
Vivian Youngjean Park, MD, PhD¹

¹Department of Radiology and Research Institute of Radiological Science, Yonsei University College of Medicine, Korea

²Seoul Asan Internal Medicine Clinic, Korea

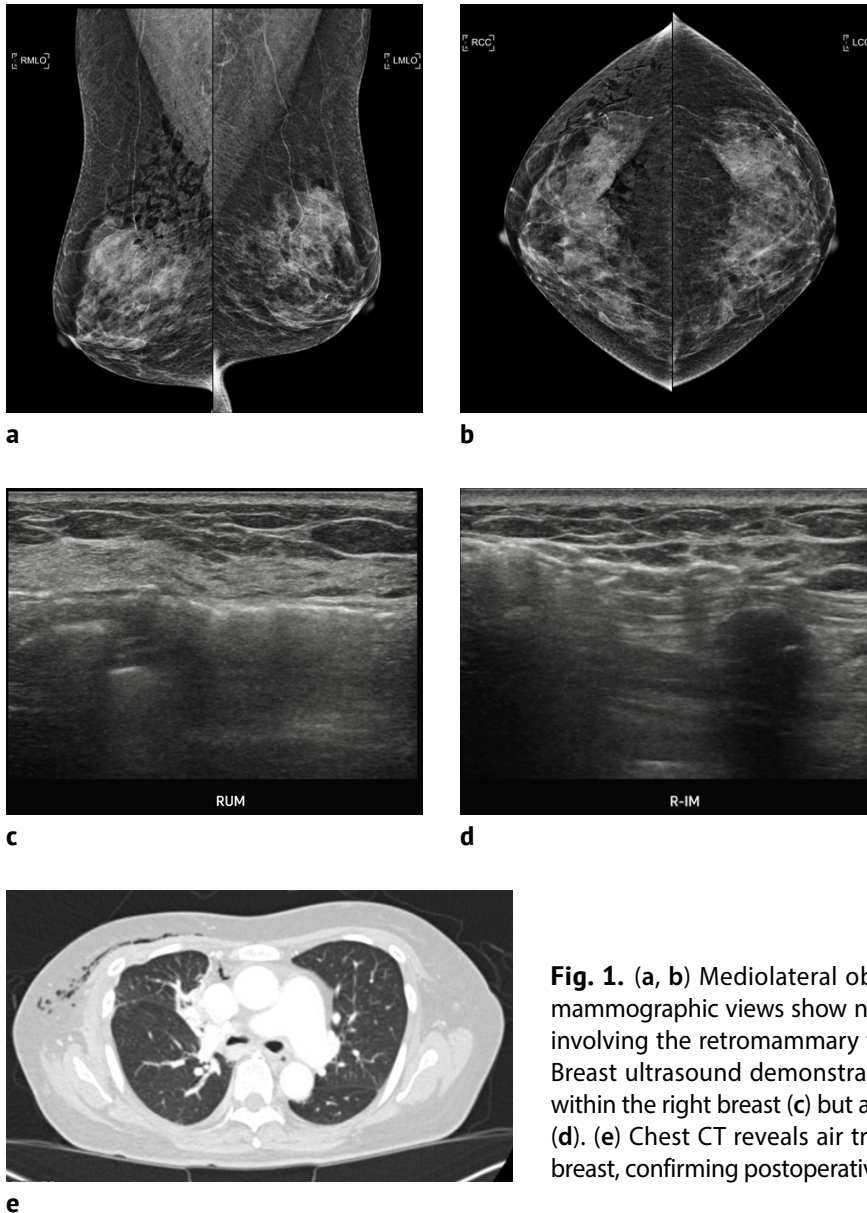


Fig. 1. (a, b) Mediolateral oblique (MLO) (a) and craniocaudal (CC) (b) mammographic views show newly developed air densities predominantly involving the retromammary fat area, especially in the right breast. (c, d) Breast ultrasound demonstrates multiple echogenic linear foci not only within the right breast (c) but also along the right internal mammary region (d). (e) Chest CT reveals air tracking from the right operative site to the breast, confirming postoperative air leakage as the cause of pneumomastia.

Corresponding Author: Vivian Youngjean Park, M.D., Ph.D

Department of Radiology and Research Institute of Radiological Science, Yonsei University College of Medicine, Breast Cancer Center, Yonsei Cancer Center, Severance Hospital, Korea

Tel. +82-2-2228-7400 Fax. +82-2-2227-8337

E-mail: VIVIANPARK0116@yuhs.ac

Case 1

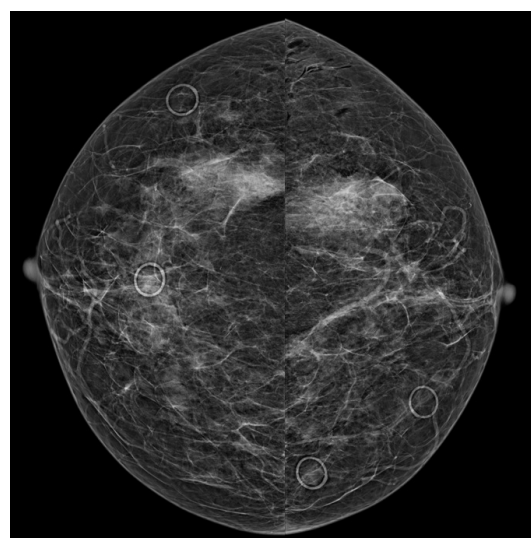
A 63-year-old woman with biopsy-proven invasive ductal carcinoma of the left breast underwent neoadjuvant chemotherapy in January 2025. In June 2025, preoperative mammography demonstrated newly developed air densities within the retromammary fat of the right breast. Ultrasound revealed multiple echogenic linear structures in the right breast and right axilla, predominantly in the retromammary fat area (Fig. 1). The previously proven malignant lesion in the left breast had

decreased in size on both mammography and ultrasound, consistent with treatment response.

The patient had a history of right upper lobectomy for lung cancer performed via video-assisted thoracoscopic surgery (VATS) in January 2025. Chest CT performed in June 2025 revealed air collections extending from the right operative site through the mediastinum to both breasts (predominantly the right) and the right axilla, compatible with postoperative air leakage (Fig. 1e). The patient reported chest discomfort after severe coughing episodes following an upper



a



b



c

Fig. 2. (a, b) MLO (a) and CC (b) mammographic views show air densities in both breasts, predominantly within the retromammary fat areas. (c) On the follow-up mammogram obtained three days later, the air had completely resolved.

respiratory infection one month earlier. The air leak was managed conservatively with antibiotics, and subsequent chest radiographs and CT scans demonstrated resolution of the air collections.

Case 2

A 66-year-old asymptomatic woman presented for evaluation of abnormalities detected on screening mammography in July 2025. The mammogram revealed multiple air densities in both breasts without other abnormalities (Fig. 2). Repeat mammography and ultrasound performed three days later showed complete resolution of the findings (Fig. 2c). The patient reported a history of high-frequency liposuction involving the back, abdomen, and bilateral chest walls performed ten days before the initial mammogram.

Pneumomastia refers to the presence of air within the breast parenchyma, subcutaneous tissue, or retromammary space. Although rare, it has a wide range of causes, most cases are benign or iatrogenic in origin. Reported etiologies include postoperative air leak after thoracic surgery, direct injury, biopsy, and cosmetic procedures such as liposuction or augmentation. Less commonly, pneumomastia may result from infection with gas-forming organisms or penetrating trauma.

Air may enter the breast directly through tissue disruption or indirectly through dissecting along

fascial planes from the chest wall or mediastinum. The retromammary space provides a potential route for air migration due to its loose connective tissue continuity with the thoracic wall.

On imaging, mammography typically shows radiolucent areas or linear air densities without associated soft-tissue masses. Ultrasound reveals echogenic lines or foci with reverberation artifacts and no posterior shadowing, while CT best delineates the extent and distribution of air. MRI may incidentally demonstrate signal voids.

The main differential diagnoses include gas-forming infection, abscess, or traumatic emphysema. Infections are usually accompanied by clinical symptoms and inflammatory changes, whereas benign or iatrogenic pneumomastia is often asymptomatic and self-limited. Recognition of these imaging characteristics, combined with clinical history, prevents misinterpretation as malignancy or abscess and avoids unnecessary intervention.

References

1. Paulraj S, Ashok Kumar P, Sekhon N, Gambhir HSS. Air in the Breast: A Rare Cause of Iatrogenic Pneumomastia. *Cureus* 2020;12:e8447.
2. Styslinger K, Cinelli C. Pneumomastia: A Rare but Benign Mammographic Finding. *J Belg Soc Radiol* 2025;109:23.
3. Bortz JH, Lebovic J. Pneumomastia following subdermal upper arm helium contouring treatment. *SA J Radiol* 2024;28:2899.