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LETTER TO THE EDITOR

RE: Prosthetic Breast Implant Rupture: Imaging—Pictorial Essay

Full Cooperation Between Surgeon and Radiologist: "The Best of Both Worlds"

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Abstract Cooperation between plastic surgeons and radiologists is fundamental when breast prosthesis rupture is suspected. We describe our experience managing the case of suspected implant rupture in a patient that underwent CT scan imaging for thoracic pain. Poor clinical information given to radiologists leads to wrong diagnosis: during surgery, both prostheses were checked revealing no signs of rupture. Full communication among different specialists involved in the multidisciplinary approach is always recommended, and an easy-to-use national breast implant register would allow a better management of patients' follow-up and eventual preoperative planning.

Level of evidence V This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Breast implant rupture · Multidisciplinary approach · CT scan · Volume-adjustable breast implant (Spectra^{TM} implant) · National breast implant register

Sir,

We read your article "Prosthetic Breast Implant Rupture: Imaging—Pictorial Essay" and we found really interesting your stressing on cooperation between plastic surgeons and radiologists when breast prosthesis rupture is suspected [1].

Since silicone breast prostheses were introduced, many types of devices were developed [2].

No official guidelines for follow-up after breast prosthesis implantation are currently available, though MR is considered the gold standard technique [1].

Nevertheless, MR can have prohibitive costs or can be contraindicated. In such selected patients, CT scan is proved to be a valid alternative technique [3].

A 26-year-old woman with thoracic pain was admitted to the emergency room and underwent CT scan for suspected pulmonary embolism.

Radiologists reported no signs of embolism or other pulmonary diseases, while the presence of bilateral breast implants was detected. Different densities of the two prostheses, with a clear hypodense zone inside the right breast, lead the radiologist to suspect rupture (Fig. 1).

Thus, the patient was addressed to our unit. We obtained more information about patient's breast prostheses: clinical history was positive for tuberous breasts with small volume asymmetry, corrected by insertion of a textured fixed-volume round cohesive I implant (Mentor Corporation, Johnson & Johnson Medical Ltd, Santa Barbara, CA, USA) in the left breast, while a volume-adjustable Spectra^{TM} implant (Mentor Corporation, Johnson & Johnson Medical Ltd, Santa Barbara, CA, USA) with textured surface was in the right side [4]. It consists in an external lumen with low bleed, filled with cohesive I silicone gel and an inner chamber filled intra-operatively via fill tube with saline. Without proper clinical data and knowledge of this specific breast implant characteristics, CT scan images could lead the radiologist to erroneously suspect implant rupture.

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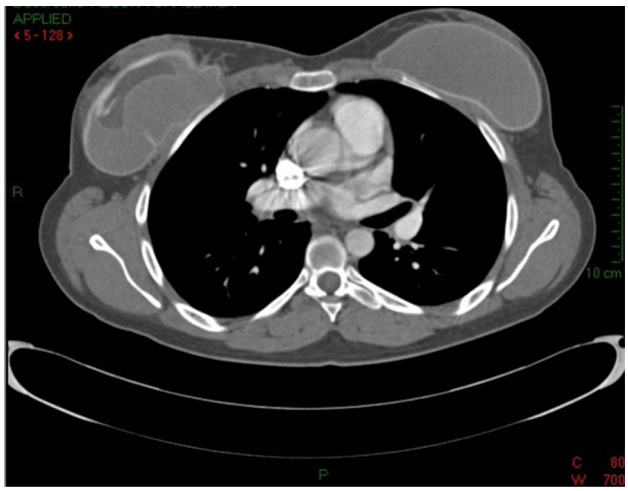

Fig. 1 TC imaging showing the presence of breast prostheses with a hypodense area in the *right* implant

The persistence of painful chest symptoms required a second radiological (RX) evaluation, evidencing signs of interstitial pneumonia.

After the pulmonary infection was treated, we decided to remove the breast implants because asymmetry and bilateral capsular contracture were present, as a consequence of pregnancy, breastfeeding and weight changes (Fig. 2). During surgery, both prostheses were checked revealing no signs of rupture, confirming that the difference between the two implants at the CT scan was wrongly interpreted as a result of limited clinical information available to the radiologists.

Full communication among different specialists involved in the multidisciplinary approach is always recommended, and cooperation between radiologists and plastic surgeons is mandatory. If it is true that radiologists should be aware of the existence of different types of prostheses, on the other hand, plastic surgeons should always recommend to patients the importance of keeping the leaflet with implant serial number and model, to easily track the features of the prostheses.

Several countries around the world are developing national breast device registers [5] that would be fundamental in such cases. In Italy, a national register was instituted in 2012 but is not easily available for daily practice. An easy-to-use national or international breast implant register would allow a better follow-up and eventual preoperative planning for patients undergoing prostheses revisions or secondary surgeries.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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Fig. 2 Breast implant removal. Preoperative and postoperative front view

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