

*BREAST IMPLANT RUPTURE AS A COMPLICATION OF HEART SURGERY
IN MEDIAN STERNOTOMY*

*Giuseppe Nisi, Matteo Campana, Luca Grimaldi, Cesare Brandi, Roberto Cuomo,
Carlo D'Aniello*

Department of General and Specialistic Surgery; Plastic Surgery Unit, "Santa Maria alle Scotte"
Hospital, University of Siena, Italy

Abstract. The authors report a case of a woman who underwent heart surgery in median sternotomy after breast reconstruction using prosthesis in 1984. After this open heart surgery in 2008, she developed an injury at right breast implant with intra and extra capsular silicone gel spread out the prosthesis.

Key words: Breast implant; median sternotomy; breast reconstruction; breast augmentation.

CASE REPORT

A 64 years old women suffered from breast implant rupture after cardiac surgery in full median sternotomy.

She underwent right madden mastectomy in 1981; three years later she received a secondary reconstruction using prosthesis.

In 2001 a stenting of right coronary artery was performed for an inferior myocardial infarction; in 2008 for heart valves incompetence a mitral and tricuspid valve anuloplasty were performed in full longitudinal median sternotomy.

Few weeks later she start complain about a flogistic process at the right breast and, subsequently, she noticed a right paramedian region swelling but no further clinical investigation was made.

In April 2009, she was admitted in hospital with severe pyrexia associated to an important nodular inflammatory process, a cutaneous presternal fistula with mixed jelly and pus like secretion with oedema of implanted region (Figure 1); marked sign of periferical legs stasis was present as well.

In emergency she removed injured right breast implant and intra and extra capsular silicone gel spread out the prosthesis (Figure 2).

Histology revealed granuloma-like chronic inflammation; this process developed around a fatty paraffinoma-like secretion and, for *Staphylococcus aureus* positivity of this material, Teicoplanin 400 mg, Ampicillin/Sulbactam 3 g and Ciprofloxacin 200 mg was started.

At post operative day 8 (POD) she was discharged with no fever, with twice weekly wound control fol-

low up and the decision to use VAC therapy to improve healing process.

Despite re-epithalization at POD 50, general clinical condition worsening in terms of dyspnoea and heart failure.

Again at POD 65 scar dehiscence and a percutaneous fistula producing jelly and pus-like material was present.

Critical general condition discouraged any treatment more than daily wound medication. Three weeks later patients died for severe unresponsive heart failure.

DISCUSSION

In 2011, more than 85,000 breast implant procedures were performed in Italy, including breast reconstruction, augmentation mammoplasty and men pectoral implants. The safety of breast implants has been highlighted by numerous studies in both reconstructive and aesthetic surgery. However specific issues such as implant risks and follow up after cardiac surgery in full median sternotomy are not well established.

Taupmann *et al.* describe the presence of silicon in the chest cavity due to iatrogenic breast implant rupture [1].

Rice *et al.* report the treatment of a post-traumatic migration of silicon into the pleural space in a patient who underwent breast augmentation ten years before [2].

Chen *et al.* describe a prosthesis in the chest as a complication of breast augmentation [3]. Levine *et al.* report intrathoracic silicone associated to bilateral implant rup-

Correspondence to:

Roberto Cuomo

Department of General and Specialistic Surgery, Plastic Surgery Unit, "Santa Maria alle Scotte" Hospital, University of Siena Viale Bracci n.1, 53100 Siena, Italy.

Tel./Fax: +39.0577.585158

E-mail: robertocuomo@outlook.com



Figure 1. The important nodular inflammatory process associated to a cutaneous presternal fistula with mixed jelly and pus like secretion with oedema of implanted region.



Figure 2. Right breast implant presented an intra and extra capsular rupture.

ture one year after atrial septal closure surgery after previous radical mastectomy and breast reconstruction [4].

Mehta *et al.* described the migration of a intact breast implant inside the chest cavity after thoracotomy surgery [5].

In our case a twenty years old breast prosthesis has been damaged during open heart surgical procedure.

Management of this kind of complications is one of the most difficult problems in secondary procedures, due to the characteristics of silicon and its reaction with the surrounding tissues.

Although a clear causal link between the patient's general condition and the implant rupture is not well established, surgical options were clearly limited by systemic clinical condition. Perhaps, early diagnosis would have changed the course of events.

Growing practice in utilizing breast implants is increasing the possibilities years later, of surgical procedures years later that increase risk of complications. A correct early diagnosis through both the exactly understandings of clinical signs and the use of imaging techniques, would reduce this kind of complications.

CONCLUSIONS

In conclusion, it could be important proper updates training for cardiac surgeons in perioperative management of this kind of patients as well as a dedicated chapter in informed consent for breast implanted subjects underline particular surgical risks.

REFERENCES

1. Taupmann RE, Adler S. Silicone pleural effusion due to iatrogenic breast implant rupture. *South Med J* 1993;86:570-1.
2. Levine RL, Allen TC, Cartwright J Jr, Cagle PT. Silicone thorax due to a ruptured breast implant. *Chest* 2005;127:1854-7.
3. Chen ZY, Wang ZG, Kuang RX, et al. Implant found in thoracic cavity after breast augmentation. *Plast Reconstr Surg* 2005;116:1826-7.
4. Mehta AM, Bard MP, van Straten A, et al. Intrathoracic migration of a breast prosthesis after thoracotomy. *J Thorac Cardiovasc Surg* 2008;135:206-7.
5. Rice DC, Agasthian T, Clay RP, Deschamps C. Silicone thorax: a complication of tube thoracostomy in the presence of mammary implants. *Ann Thorac Surg* 1995;60:1417-9.