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# An Unexpected Finding During a Breast Excisional Biopsy: A Case Report

Emily Forester  
*Rowan University*

Anjeanette Brown  
*Premier Surgical Network*

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# An unexpected finding during a breast excisional biopsy: A case report

Emily Forester OMS-III and Anjeanette Brown, MD, FACS

## Background

- The presence of pacemaker leads within the breast is rare
- Although it is infrequent, there are some reports of implanted cardiac devices or wires migrating into breast tissue or through the chest wall [1,2,3]
  - One report described a patient with cardiac device migration mimicking breast cancer on clinical exam [1]
- To the best of our knowledge, there are no current reports of pacemaker leads within the breast tissue of a patient with concurrent breast cancer

**This case report details a rare phenomena observed regarding the presence of pacemaker leads within the breast tissue of a patient with breast cancer**

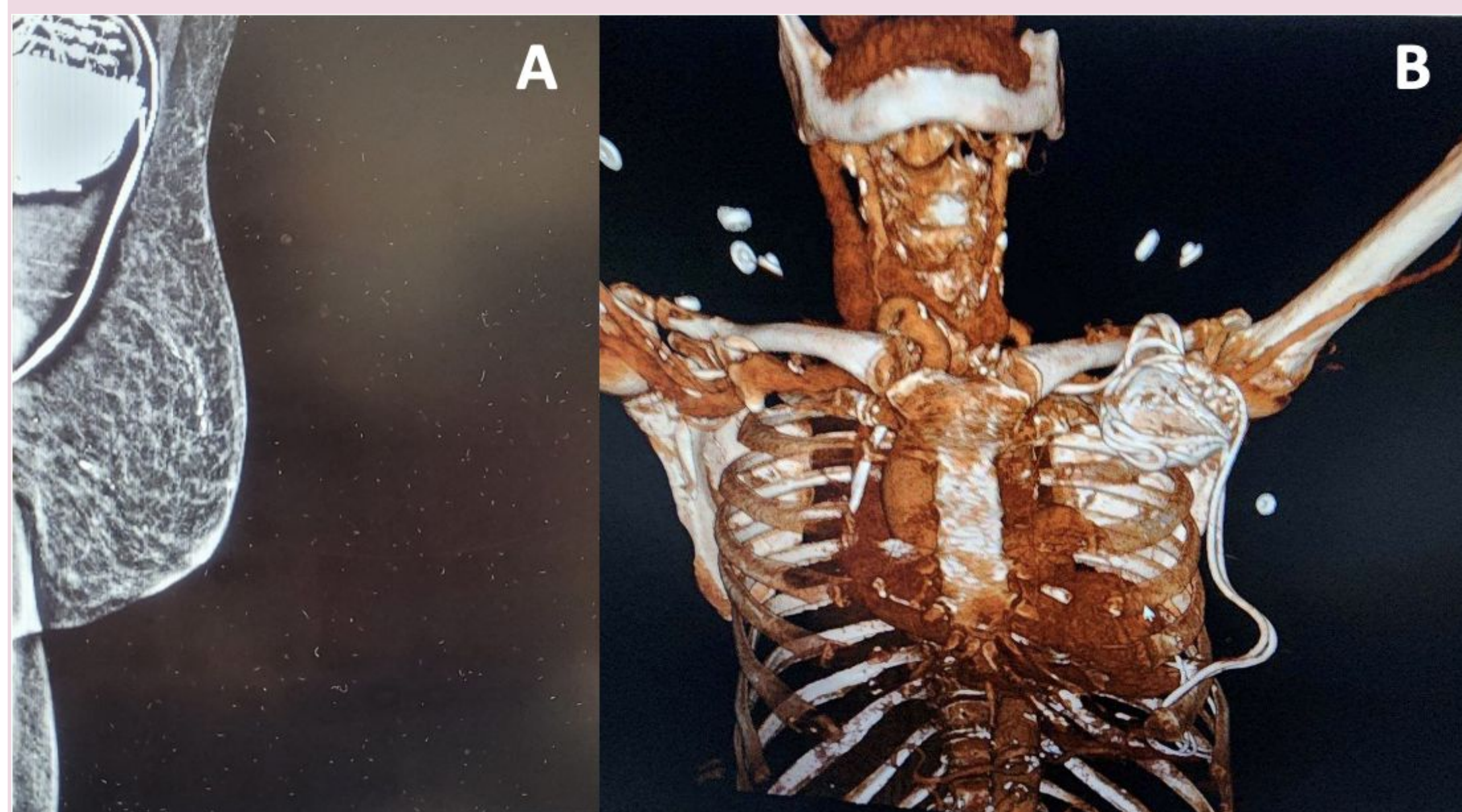


Figure 3: A) Preoperative mediolateral oblique (MLO) view diagnostic mammography B) Postoperative CT angiography confirming presence of the two epicardial pacemaker leads within the left breast

## Case Presentation

- 76 year old female who is pacemaker dependent due to a previous hx of complete heart block on long term anticoagulation with warfarin due to a hx of atrial fibrillation
- Initial US-guided left breast biopsy = sclerosing papilloma with superimposed ductal hyperplasia and apocrine metaplasia
  - During the left breast excisional biopsy, two epicardial leads were unexpectedly found within the center of the patient's breast tissue (Figure 1 & Figure 2)
- Preoperative mammography demonstrated the presence of epicardial leads on the left side of the chest, but it appeared that the leads were closer to the pectoralis muscle (Figure 3A). Subsequently, this was not the case in real-time.
- Following the intraoperative discovery, the presence of the pacemaker leads within the breast tissue was confirmed postoperatively using CT angiography (Figure 3B)
- Mass was removed in pieces using gentle dissection with scissors, as the use of cautery was now contraindicated
  - Postoperative pathology revealed a 2.2 cm invasive papillary carcinoma
    - Raises concern for unclear margin status



Figure 1

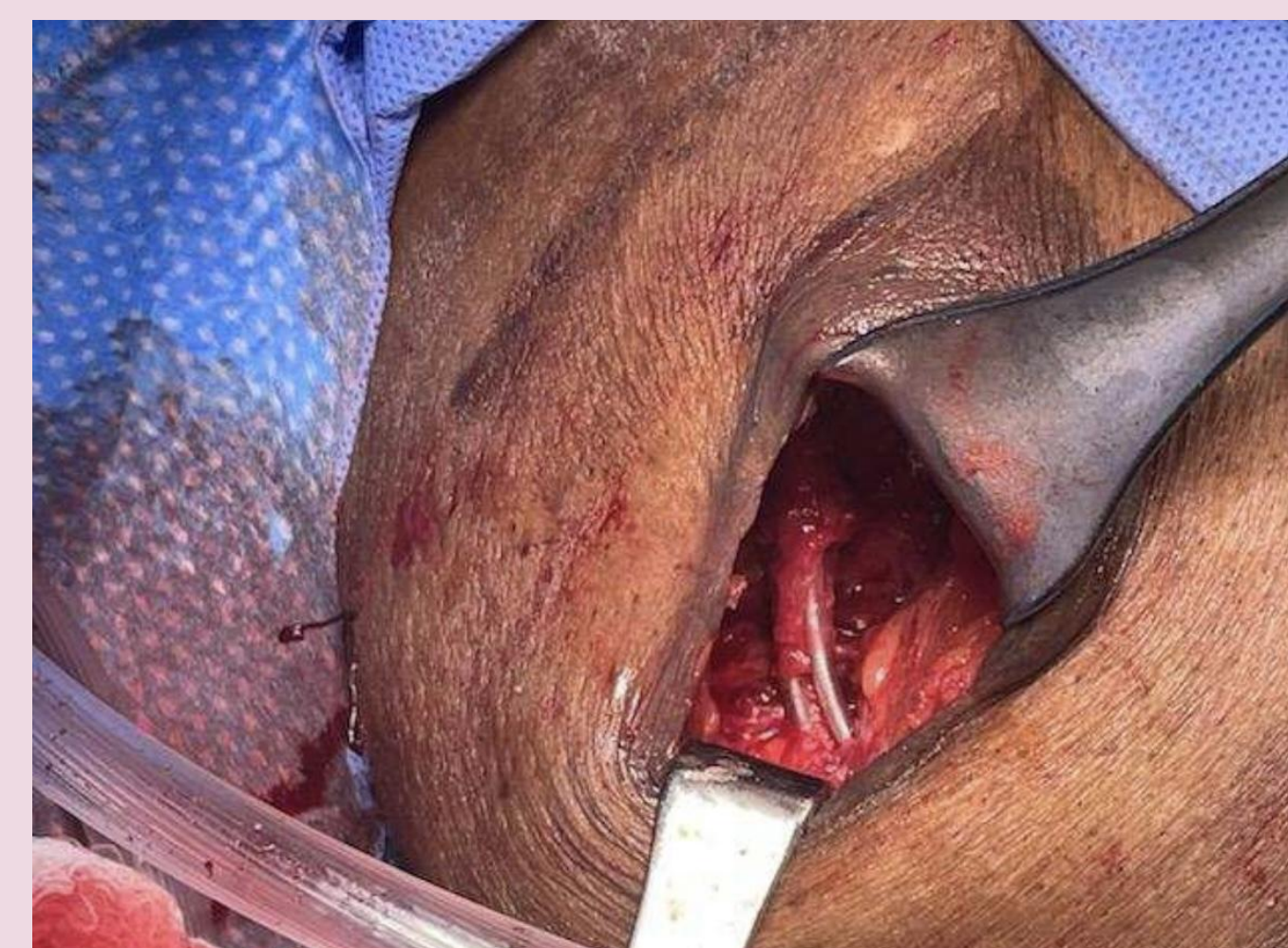


Figure 2



Figure 4

- New plan = Left modified radical mastectomy and SLNB following the implantation of a new pacemaker lateralized to the right side
- 2 month waiting period for pacemaker relocation -> Left breast hematoma (likely predisposed by long term anticoagulation w/ warfarin)
  - I&D of the hematoma then cavity packed with surgical and foam
- Once pacemaker was relocated, the patient underwent a left modified radical mastectomy and SLNB
  - Left breast tissue was gently transected away from the retained epicardial leads before it was removed from the field (Figure 4)
  - The cardiothoracic surgeon then took the exposed epicardial leads, cut them to the level of the rib, tunneled the remaining wires beneath the fascia, and stitched the area w/ 3.0 vicryl running suture for coverage
- Final pathology was negative for residual cancer. SLNB was also negative
- At 2 week f/u, patient was healing well with no pacemaker complications

## Discussion

### Relevant Concerns:

1. Difficulty of achieving clear margins
  2. Local spread of cancer along leads
  3. Pacemaker device complications
- Pacemakers may interfere with breast cancer diagnosis and treatment [4]
    - ↓ in compression of the breast by mammogram radiographers
    - Possible breast obstruction and interference with mammogram image quality
    - Radiation tx can cause device malfunction

## Conclusions

- 1st documented case of pacemaker leads transecting a malignant breast mass
- Intradisciplinary approach to clinical treatment
- If a similar case is encountered, treatment will likely require an individualized management strategy. Therefore, collaboration between cardiologists and surgeons is vital to successful clinical management of this phenomenon

## References

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