Breast Calciphylaxis in a Patient with ESRD and Prior Radiation: A Diagnostic and Therapeutic Challenge

Nikki Verma, MD[1]; Radhamani Kannaiyan, MD[1]; Thuy Phung, MD, PhD[1]; Kate Lathrop, MD[1,]
[1]Mays Cancer Center, University of Texas Health Sciences Center San Antonio

Introduction

- Calciphylaxis is commonly associated with chronic kidney disease and results from calcium deposition in dermal and adipose vasculature[1].
- Diagnosis is often challenging and requires a multidisciplinary approach[2]. Lesions typically present on the lower extremities or abdomen; involvement of the breast is rare.
- This case describes a patient with breast calciphylaxis requiring multi-specialty management.

Case Presentation

- 69-year-old female with a history of grade 3 ER+/PR+/HER2− right breast intraductal carcinoma, status post partial mastectomy and axillary dissection, presented with progressive skin changes of the right breast.
- Prior treatments included two cycles of cyclophosphamide and docetaxel (discontinued due to rectal bleeding requiring exploratory laparotomy and partial colectomy), one year of hormonal therapy, and radiation. Medical history is also significant for end-stage renal disease (ESRD) on hemodialysis, congestive heart failure, and pulmonary hypertension.

Clinical Course

Initial Presentation	Surveillance since 2012	In 2022, patient first noted skin thickening with satellite lesions and areas of hyperpigmentation and hypopigmentation	Endorsing “new bumps” on the right side of her breast that are progressively thickening. Referred to dermatology for biopsy	
Preliminary workup	Biopsy: dermal sclerosis and minute calcifications. Limited depth to the sample due to dense nodules	Screening mammogram: negative for malignancy recurrence	Attempted barrier creams and symptomatic care. Unable to tolerate mammography	
Progression of symptoms	Development of skin breakdown and drainage in areas of calcification associated with significant pain	Nephrology trialed sodium thiosulfate and calcium binders without relief. Patient not a good candidate for bisphosphates or calcium channel blockers	Breast ultrasound: Multiple calcified areas, consistent with calcinosis cutis	Repeat biopsy 2024: dermal fibrosis, perivascular plasmacytic inflammation, vascular ectasia, without evidence of malignancy
Management modalities	Antifungals, barrier creams, calcium binders, sodium thiosulfate	Referred to surgery, however patient was too high risk for excisional procedure	Patient declined surgical intervention. Continued wound care and dermatology follow ups	



Figure 1. Progression of lesions at inframammary fold of right breast in 2024 (left) and 2025 (right)

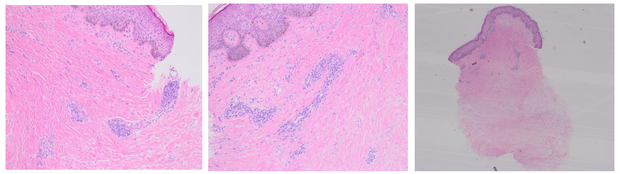


Figure 2. H&E stains of breast biopsy demonstrating dermal fibrosis, perivascular plasmacytic inflammation, and vascular ectasia without evidence of malignancy

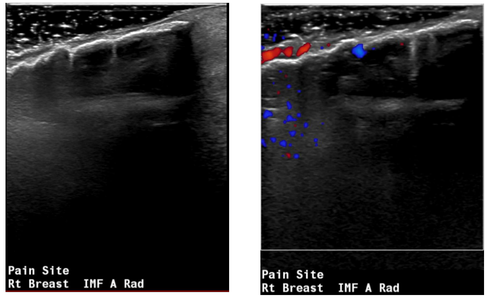


Figure 3. Ultrasound of right breast intramammary fold demonstrating diffuse calcifications with some posterior acoustic shadowing.

Conclusions

- Calciphylaxis is a serious condition, with wound-related infections contributing to mortality rates as high as 60% within one year of diagnosis.
- Diagnosis is complicated by inconclusive biopsy findings and overlapping features with radiation dermatitis or recurrent malignancy.
- Management is further complicated when conventional treatments, such as sodium thiosulfate and calcium binders, fail to alleviate symptoms, and when surgical intervention poses high risks.
- The patient's complex comorbidities and treatment history necessitated a multimodal approach involving dermatology, nephrology, and oncology to diagnose and co-manage

Contact
Nikki Verma, MD
UT Health Science Center San Antonio
Email: verman1@uthscsa.edu
Phone: (605)-759-5398

References

1. Gallo Marin B, Perazella MA, Goff SL, Machan JT, Kravetz JD. Calciphylaxis and kidney disease: a review. Am J Kidney Dis. 2023;81(2):232–239. doi:10.1053/j.ajkd.2022.06.012American Journal of Kidney Diseases, Volume 81, Issue 2, 232 - 239
2. Koratala A, Ejaz AA, Mohandas R. Calciphylaxis of the breast: a rare metabolic complication of kidney disease. BMJ Case Rep. 2016;2016:bcr2016216665. doi:10.1136/bcr-2016-216665
3. Jeong HS, Dominguez AR. Calciphylaxis: controversies in pathogenesis, diagnosis and treatment. Am J Med Sci. 2016;351(2):217–227. doi:10.1016/j.amjms.2015.11.011

This presentation is the intellectual property of the author/presenter. Contact them at <<your email address>> for permission to reprint and/or distribute.
© Poster Template by Genigraphics® 1.800.790.4001 www.genigraphics.com