Actas Dermo-Sifiliográficas xxx (xxxx) 104546

Contents lists available at ScienceDirect

Actas Dermo-Sifiliográficas

journal homepage: www.actasdermo.org

Research Letter

Postimplantation Breasts Erythema, Advancing in the Knowledge of Telangiectatic Reticular Erythema

C. Llamas-Segura, F.J. De La Torre-Gomar *, F.J. Navarro Triviño, R. Ruiz-Villaverde

Servicio de Dermatología, Hospital Clínico Universitario San Cecilio, Granada, Spain

To the Editor,

Post-implantation erythema (PIE) is a benign cutaneous entity that has been scarcely reported and is associated with the insertion of a foreign body in contact with the adjacent skin, traditionally electronic and metallic devices.[1–3] Its appearance on the breasts is uncommon, and no additional associated symptoms are usually present.[4,5]

A 47-year-old woman, with no relevant past medical history, and a 4-month history poorly defined erythematous macules located symmetrically over the inferior and outer-lateral aspects of both breasts (Fig. 1A–C). Directed history taking revealed that she had undergone breast implant surgery 12 years earlier. The patient did not identify any other potential trigger and denied pruritus or other accompanying symptoms. Histologic examination showed a nonspecific inflammatory dermal infiltrate composed of lymphocytes and histiocytes with superficial perivascular distribution, without eosinophils, along with lymphatic vascular ectasia (Fig. 1D, E). No spongiosis or parakeratosis was observed. Patch testing—including the extended European baseline series, plastic and adhesive series, and silicone from breast implants—revealed no relevant findings. The lesions were treated with clobetasol propionate 0.5 mg/g cream once daily, achieving complete resolution within two months (Fig. 2A–C).

Until several years ago, these eruptions were classified under the term *reticular telangiectatic erythema*, without a clearly established pathogenesis. It was suggested that heat generated by electronic devices, together with the electromagnetic fields they produce, could contribute to local changes in the microvasculature adjacent to the implant, leading to erythema.[1,2] Currently, the description of cases associated with non-electronic and non-metallic foreign bodies has led to the adoption of the broader term PIE. Our case supports a later etiologic theory proposing that lesions result from mechanical obstruction of local circulation due to pressure exerted by the foreign body on the skin.[3–5] Clinically, PIE presents as asymptomatic erythematous macules that blanch with pressure, located in areas adjacent to the prosthetic material.[4–6] It is a diagnosis of exclusion based on compatible clinical findings, histology showing a lymphohistiocytic inflammatory infiltrate with dermal vascular ectasia, negative patch testing, and a history of foreign-body implantation (with a temporal relationship that may extend several years after implantation).[4,5,7]

Table 1 illustrates the 12 published cases of PIE associated with non-electronic foreign bodies along with our own. PIE has been associated with knee, shoulder, and elbow joint prostheses; suture material; intrathecal drug delivery systems; hernia meshes; and breast implants. Analysis of the data shows a slight female predominance (7/13). Patient age ranged from 22 to 77 years, with most being older than 50 years (10/13). In 7 cases, PIE occurred within the first month after implantation, whereas in 3 cases it appeared > 1 year later (2 associated with breast implants). The present case displays the longest latency period reported, appearing 12 years after implant placement. Histologically, dilation of dermal capillaries was observed in 7/13 cases, with lymphatic vessel ectasia specified in 2 reports. Sporadically, reactive dermal vascular proliferation and erythrocyte extravasation have been described. These findings further support the theory of compression and mechanical obstruction as a likely etiopathogenic mechanism. Various therapeutic approaches have been described. In 4 cases, a watch-and-wait strategy with close follow-up was adopted, with spontaneous resolution in 2 cases.[1,4,5] Treatment with medium- to high-potency topical corticosteroids has also been used, achieving complete response in our patient. Pulsed dye laser therapy has been reported with good results after two sessions.[4,5] Removal of the prosthetic material is generally not required. It was performed only in 4 cases in which device accessibility facilitated removal (3 involving drug-delivery systems and 1 related to non-absorbable suture material).[8–10] All cases resolved completely, although only 2 reported the time to full resolution (2 weeks and 2 months).

In conclusion, PIE is a recently described entity and represents a therapeutic challenge. We present the third reported case of PIE due to breast implants and compile all cases attributed to non-electronic devices, along with the therapeutic strategies employed. Recognition and further study of this entity will provide a solid foundation for advancing understanding of its still-unclear etiopathogenesis and optimal management.

* Corresponding author.
E-mail address: fjtogo@gmail.com (F.J. De La Torre-Gomar).

https://doi.org/10.1016/j.ad.2025.104546

0001-7310/© 2025 AEDV. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Please cite this article as: C. Llamas-Segura, F.J. De La Torre-Gomar, F.J. Navarro Triviño et al., Postimplantation Breasts Erythema, Advancing in the Knowledge of Telangiectatic Reticular Erythema, ACTAS Dermo-Sifiliográficas, https://doi.org/10.1016/j.ad.2025.104546

Table 1
Published clinical cases of post-implantation erythema associated with non-electronic devices.

Author/Year	Age (years)/Sex	Implanted device (material)	Location	Time to onset after implantation	Cutaneous findings/associated symptoms	Histopathological features	Intervention performed	Implant removal	Outcome
Alegre-Sánchez et al., 2018[5]	31/Female	Silicone breast implants	Breasts	6 months	Erythematous patch with some associated telangiectasias/asymptomatic	Vascular dilation surrounded by mild lymphocytic infiltration	Two sessions of 595-nm pulsed dye laser	No	Marked clearing of erythema with no recurrence after 4-month follow-up
Segurado-Tostón et al., 2021[4]	52/Female	Breast implants (Allergan silicone anatomical implants 410 MX 370 g)	Breasts	5 years	2 erythematous plaques/asymptomatic	Mild superficial and mid-dermal perivascular lymphohistiocytic infiltrate with abundant vascularization	Expectant management and close follow-up	No	Not reported
Aneja et al., 2011[1]	76/Female	Titanium elbow prosthesis	Left elbow	Days	Erythematous macules/asymptomatic	Mild fibrosis, inflammatory infiltrate, and telangiectatic blood vessels	Joint fluid aspiration	No	Resolution of lesions with intermittent course
Aneja et al., 2011[1]	64/Female	Knee prosthesis (30% chrome-cobalt and 7% molybdenum)	Right knee	7 months	10-cm erythematous area with telangiectasias and mild edema/asymptomatic	Mild perivascular lymphocytic infiltrate with reactive vascular proliferation	Expectant management and close follow-up	No	Spontaneous resolution (time not specified)
Broekaert et al., 2012[3]	77/Female	Shoulder hemi-prosthesis	Right shoulder	Several weeks	Diffuse reticular erythema/asymptomatic	Mild fibrosis with telangiectasias and dilated lymphatic vessels with perivascular lymphocytic infiltrate in the dermis	Expectant management and close follow-up	No	Spontaneous resolution after one year
Mercader-García et al., 2005[8]	22/Male	Intrathecal drug delivery system	Left flank	2 weeks	Ill-defined erythematous macules with peripheral telangiectasias/mild pruritus	Telangiectatic vessels in papillary and reticular dermis with perivascular lymphohistiocytic infiltrate	Device removal	Yes	Complete resolution two months after pump extraction

Table 1 (*Continued*)

Author/Year	Age (years)/Sex	Implanted device (material)	Location	Time to onset after implantation	Cutaneous findings/associated symptoms	Histopathological features	Intervention performed	Implant removal	Outcome
Milpied-Homsi et al., 2008[9]	56/Male	Morphine pump (SynchroMed II, Medtronic)	Abdominal area	3 weeks	Erythematous plaques/mild pruritus	Not described	Device removal	Yes	Not reported
Broekaert et al., 2012[3]	66/Male	Drug delivery pump	Left flank	1 week	Brown U-shaped reticular erythema/mild pruritus	Dermal dilated blood and lymphatic vessels with sparse perivascular lymphocytic infiltrate	Device removal	Yes	Resolution (time not specified)
Goeller et al., 2014[6]	77/Male	Surgimesh XB polypropylene mesh (Aspide Medical, St. Etienne, France)	Mesogastrium	Days	Blanchable erythematous plaques/asymptomatic	Not described	IV antibiotics	No	Lesion persisted
Goeller et al., 2014[6]	69/Male	Surgimesh XB polypropylene mesh (Aspide Medical, St. Etienne, France)	Mesogastrium	14 months	Abdominal erythema/asymptomatic	Not described	Antibiotics	No	Lesion persisted
Goeller et al., 2014[6]	70/Male	Surgimesh XB polypropylene mesh (Aspide Medical, St. Etienne, France)	Mesogastrium	2 weeks	Erythematous patch/mild pruritus	Not described	Expectant management and close follow-up	No	Lesion persisted
Armengot-Carbo et al., 2016[10]	61/Female	Non-absorbable suture thread	Left breast	1 month	Erythema with reticular telangiectasias/asymptomatic	Dermal telangiectasias with intermediate lymphocytic infiltrate and epidermal atrophy	Material removal	Yes	Complete resolution 2 weeks after suture removal
Llamas-Segura et al.	47/Female	Breast implant (material if known)	Breasts	12 years	Symmetric erythematous macules	Perivascular lymphocytic infiltrate, vascular ectasia, and erythrocyte extravasation	Clobetasol propionate 0.5 mg/g cream	No	Resolution at 2 months

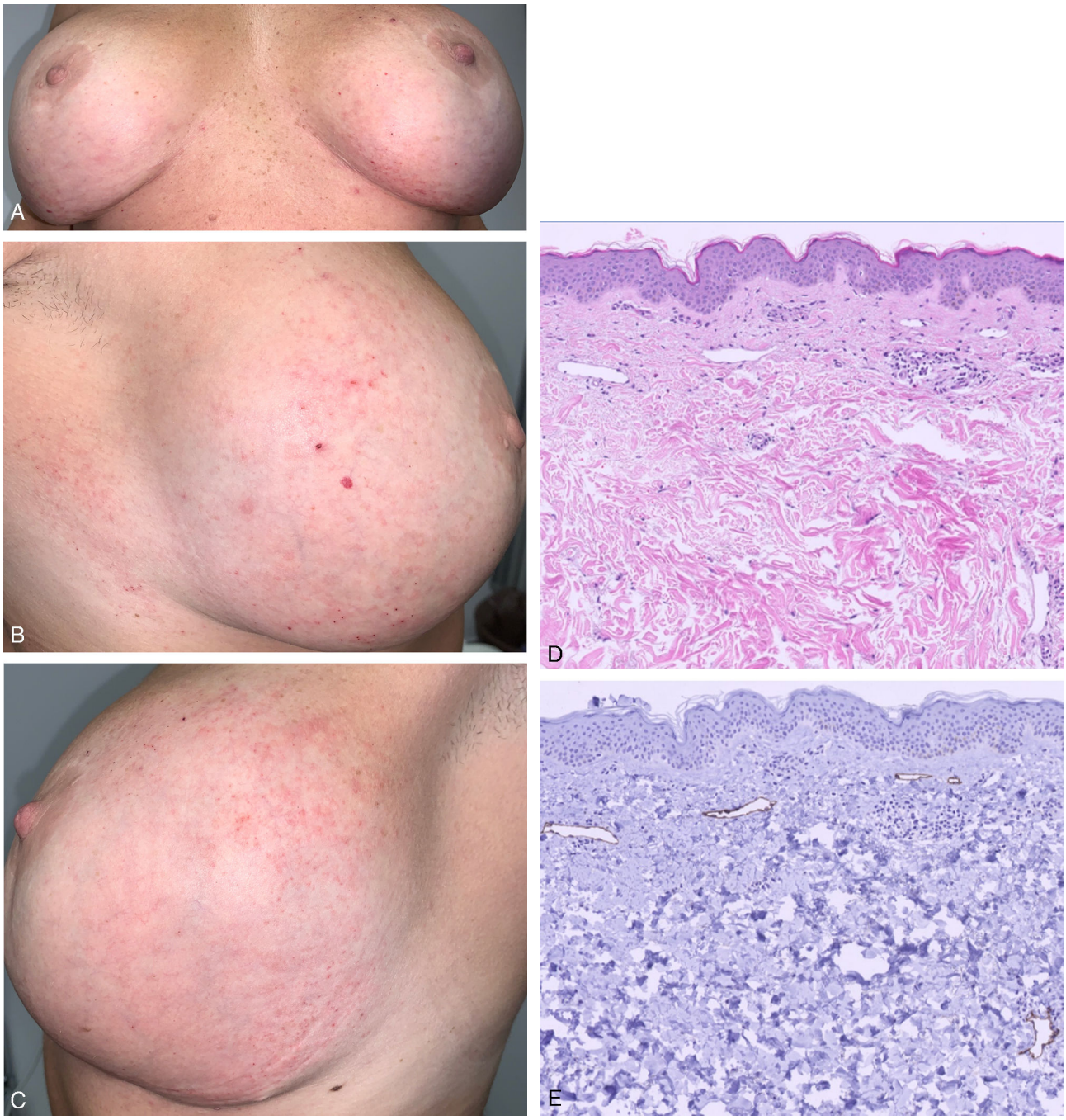

Fig. 1. (A–C) Initial clinical presentation: Diffuse erythematous macules located on the inferior and outer lateral regions of both breasts. Clinical images. (D) Superficial perivascular dermatitis with predominant lymphohistiocytic inflammatory infiltrate and lymphatic vascular ectasia with prominent endothelial cells (Hematoxylin–Eosin ×400). (E) Ectatic lymphatic vessels demonstrated by immunohistochemical staining (D2-40 ×200).

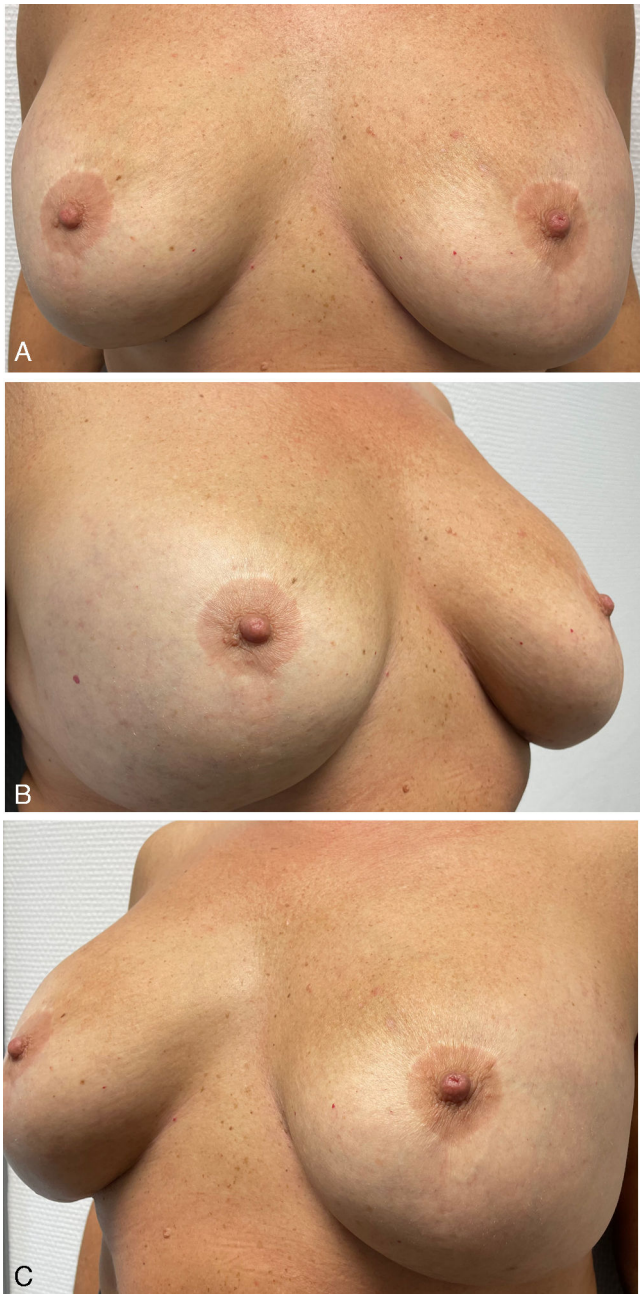

Fig. 2. (A–C) Clinical response after treatment. Complete resolution of the lesions is observed.

Conflict of interest

The authors declare that they have no conflict of interest. Q3

Acknowledgments

To María Narváez Simón, staff physician in the Department of Pathology at *Hospital Universitario Clínico San Cecilio* (Granada, Spain) for describing the histologic images of the case.

References

1. Aneja S, Taylor JS, Billings SD, Honari G, Sood A. Post-implantation erythema in 3 patients and a review of reticular telangiectatic erythema. *Contact Dermatitis*. 2011;64:280–288.
2. Beutler B, Cohen Sabban P. Reticular telangiectatic erythema: case report and literature review. *Dermatol Pract Concept*. 2015;5:71–75.
3. Broekaert SMC, Brehler R, Metze D. Post-implantation erythema. *J Ger Soc Dermatol*. 2012;10:839–841.
4. Segurado-Tostón N, Medina-Migueláñez M, Puebla-Tornero L, Del Carmen-Martínez S, Santos-Briz A, Román-Curto C. Reticular telangiectatic erythema by breast implants. *JPRAS Open*. 2021;27:7–11.
5. Alegre-Sánchez A, Buendía-Castaño D, Fernández-González P, Pérez-García B. Post-implantation erythema associated to a breast implant treated with pulsed-dye laser. *Actas Dermosifiliogr*. 2018;109:557–558.
6. Goeller K, Do HK, Linos K, Mousdicas N. Benign reactive "'reticular telangiectatic erythema"' mistaken for cellulitis after ventral hernia repair: a report of 3 cases in which mesh was used. *Dermatitis*. 2014;25:98–99.
7. Rolph RC, Macmillan RD, Nestle-Kraemling C, Scheflan M, Farhadi J. Delayed erythematous skin reaction with SERI(R)-assisted direct to implant breast reconstruction. *J Plast Reconstr Aesthetic Surg*. 2018;71:29–31.
8. Mercader-García P, Torrijos-Aguilar A, de La Cuadra-Oyanguren J, Vilata-Corell JJ, Fortea-Baixauli JM. Telangiectatic reticular erythema unrelated to cardiac devices. *Arch Dermatol*. 2005;141:106–107.
9. Milpied-Homsi B, Bernier C, Meignier M, Stalder JF. Reticulated telangiectasic erythema following morphine pump implantation. *Ann Dermatol Venereol*. 2008;135:116–118.
10. Armengot-Carbo M, Sabater V, Botella-Estrada R. Reticular telangiectatic erythema: a reactive clinicopathological entity related to the presence of foreign body. *J Eur Acad Dermatol Venereol*. 2016;30:194–195.