

for vitamin C levels, and therefore recognition and diagnosis is dependent on physicians identifying the clinical signs in patients at risk. Dermatologists may be asked to see these patients due to suspicion of cutaneous vasculitis and should be aware of this rare differential. One 49-year-old male presented to my health service with a history of easy bruising and dyspnea. He lived with his mother and travelled frequently to Thailand. Admission blood tests revealed an acute normocytic anemia of 69, with normal platelets. Leukemia, lymphoma, myeloma, HIV, and hepatitis were all excluded by the acute medical team, a CT showed no evidence of internal bleeding, and an endoscopy demonstrated gastritis with notable bleeding at biopsy sites. A dermatology review was requested. On examination the patient offered further history of a longstanding terrible diet, consisting of cheese pizza, chicken, Weetabix, and coke. He had seen his dentist frequently for problems with his teeth, who had advised antibiotics. Clinical examination revealed perifollicular hemorrhages and bruising at his lower legs, peridontal ecchymoses, loose teeth, and corkscrew arm hairs. A clinical diagnosis of scurvy was made and vitamin C treatment instituted at 100 mg five times daily for one week, then 100 mg daily. On review at 2 weeks, the patient felt fit and well, his bruises had resolved, and his gums were much improved. On further reading into this condition, our patient was presenting in the fourth stage of scurvy, suggested by the above signs plus his dyspnea and the rapid drop in hemoglobin. By this stage in the disease, collagen synthesis has been disrupted, leading to the easy bleeding<sup>2</sup> and also a drop in blood pressure, as patients cannot induce peripheral vasoconstriction in response to adrenergic stimuli.<sup>2</sup> The lack of an appropriate adrenergic response is felt to be the most common cause for sudden death in scurvy.<sup>2</sup> Ship physicians

in the 1700s described patients suddenly expiring on the smallest physical exertion or on standing up after a period of lying flat.<sup>2</sup> The entire scorbotic state can be reversed by instituting treatment with vitamin C, and until this treatment is underway, history advises us to avoid putting these patients under any sudden excessive physical or psychological strain.

Alexandra Bonsall, BSc (Hons) MBChB MRCP  
Aberdeen Royal Infirmary, Scotland UK  
E-mail: alexandrabonsall@nhs.net

Conflict of interest: I have no conflicts of interest to disclose.

#### References

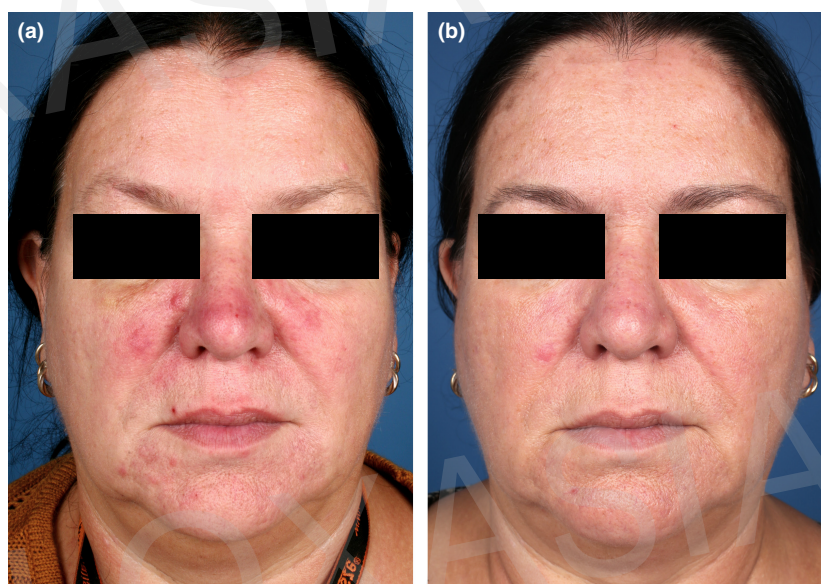
- 1 Magiorkinis E, Beloukas A, Diamantis A. Scurvy: past, present and future. *Eur J Int Med* 2011; **22**: 147–152.
- 2 Hirschmann JV, Raugi GJ. Adult scurvy. *J Am Acad Dermatol* 1999; **41**: 895–906.
- 3 Mayberry JA. Scurvy and vitamin C. *Food and Drug Law, Class and 3L paper*. Dash.harvard.edu, Winter 2004.

#### A photoconverter gel-assisted blue light therapy for the treatment of rosacea

Dear Editor,

With great interest we have read the article of Antoniou *et al.*<sup>1</sup> regarding the efficacy of a new photoconverter gel-assisted blue light therapy (PALT) for the treatment of acne. In this context, we have applied the PALT-system off-label to several rosacea patients.

Shown is one representative case of a 62-year-old woman with papulopustular rosacea. Treatments with topical metronidazole- and ivermectin-containing ointments did not lead to a satisfying control of the papulopustular inflammation within



**Figure 1** 62-year-old patient with papulopustular rosacea (a) 5 weeks after four treatments once weekly with a chromophore gel-assisted blue light phototherapy, the patient showed a marked reduction in the inflammatory reaction within the T zone (b).

the T zone (Fig. 1a). We applied the photoconverter chromophore gel (Kleresca® SKR-treatment) on the patient's face and subsequently treated with a blue light-emitting multi LED-lamp (447 nm) for nine minutes (Kleresca®, Balerup, Denmark). The treatment was repeated four times once weekly. No other medication was applied during and after treatment. The patient developed a mild erythema immediately after the first treatment, that regressed 1 week after the final session. After 5 weeks, the patient showed a marked reduction of the inflammatory reaction and an overall improvement of the large-pored skin type (Fig. 1b).

Rosacea is a very common, often underdiagnosed, chronic inflammatory skin disease, which usually manifests in middle-aged women. Long-term treatment with a combination of both topical and systemic therapeutics is often necessary to control the disease, but not all patients do tolerate or do accept systemic treatment. The PALT-system has the CE mark for the treatment of acne and skin rejuvenation. A "biophotonic" mode of action via the induction of photomodulation to the skin by the transfer of energy has been described,<sup>2</sup> but the exact underlying mechanism is still not fully understood. Our observations suggest that PALT may also function as a new topical, nonsystemic option for the treatment of papulopustular rosacea.

Stephan A. Braun, MD

Peter A. Gerber, MD

Department of Dermatology, Medical Faculty, Heinrich Heine University, Düsseldorf, Germany

E-mail: peterarne.gerber@med.uni-duesseldorf.de

Funding sources: None.

Conflicts of interest: S. A. Braun and P. A. Gerber have served as investigators, consultants, and speakers for Leo Pharma. They have received honoraria for advisory boards, travel, and research funding.

## References

- 1 Antoniou C, Dessinioti C, Sotiriadis D, *et al.* A multicenter, randomized, split-face clinical trial evaluating the efficacy and safety of chromophore gel-assisted blue light phototherapy for the treatment of acne. *Int J Dermatol* 2016; **55**: 1321–1328.
- 2 Nielsen ME, Devemy E, Jaworska J, *et al.* Introducing: photobiomodulation by low energy chromophore-induced fluorescent light. Mechanisms of Photobiomodulation. Poster session presented at: SPIE Photonics West BIOS conference, 2017 January 28 –February2, San Francisco, CA.

## Antineoplastic therapy-associated flagellate dermatoses

To the Editor:

I read with interest the paper by Mendonca *et al.* in which individuals who developed either flagellate dermatitis (in a woman 2 days after eating Shiitake mushrooms) or flagellate

erythema (in three oncology patients who received bleomycin as part of their Hodgkin's lymphoma treatment) were described.<sup>1</sup> In addition, the authors reviewed the salient features of bleomycin-induced flagellate erythema. I have also recently described an oncology patient who developed flagellate erythema while receiving trastuzumab for the treatment of her metastatic breast cancer.<sup>2</sup>

Moulin *et al.* are credited with the initial description of bleomycin-induced flagellate erythema in oncology patients.<sup>3</sup> This unique reaction to bleomycin may be observed in patients with germ cell tumors or Hodgkin's lymphoma who are treated with 5–465 IU of the drug.<sup>2,4,5</sup> The lesions are often pruritic and appear within less than 1 day to 9 weeks after initiating therapy.<sup>1–6</sup>

In addition to bleomycin, antineoplastic therapy-induced flagellate dermatoses (presenting as erythema or dermatitis) have also been described in oncology patients who have received other agents (Table 1).<sup>1–10</sup> Flagellate dermatitis was observed in several individuals who received intravenous peplomycin (a bleomycin analog) as part of combination chemotherapy for various neoplasms.<sup>9,10</sup> Flagellate dermatoses were also reported, albeit only in single case reports, in patients who were treated with bendamustine (for chronic lymphocytic leukemia),<sup>7</sup> docetaxel (for breast cancer),<sup>8</sup> and trastuzumab (for breast cancer).<sup>2</sup>

Similar to bleomycin-induced flagellate erythema, pruritus is typically associated with flagellate dermatoses secondary to other antineoplastic agents.<sup>2,7,8</sup> The appearance of the condition also varied. The onset of the flagellate dermatosis occurred from the second cycle (bendamustine and docetaxel)<sup>7,8</sup> to the fifth cycle (trastuzumab)<sup>2</sup> of therapy.

Most patients with bleomycin-induced flagellate erythema stop the drug—especially if they develop severe rash;<sup>5</sup> the man with bendamustine-induced flagellate dermatitis discontinued treatment with rapid improvement of his symptoms and skin lesions.<sup>7</sup> However, similar to Mendonca *et al.*'s patient, the development of antineoplastic agent-induced flagellate dermatosis is not an absolute contraindication to continuing the drug.<sup>1</sup> Indeed, other patients receiving either bleomycin,<sup>6</sup> docetaxel,<sup>8</sup> or trastuzumab<sup>2</sup> were able to continue their treatment; however, the latter patient received intravenous dexamethasone prior to each subsequent

**Table 1** Antineoplastic therapy-associated flagellate dermatoses

| Antineoplastic agent | Flagellate dermatosis | Reference |
|----------------------|-----------------------|-----------|
| Bendamustine         | Dermatitis            | 7         |
| Bleomycin            | Erythema              | 1,3–6     |
| Docetaxel            | Erythema              | 8         |
| Peplomycin           | Dermatitis            | 9,10      |
| Trastuzumab          | Erythema              | 2         |