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## Case Report

# Babchi oil-induced phytophotodermatitis mimicking burn injury

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## ABSTRACT

Babchi (*Psoralea corylifolia*) is occasionally used by patients as a herbal treatment in conditions such as psoriasis and vitiligo, due to its anti-inflammatory, anti-oxidant and immune-modulatory properties (Shrestha et al., 2018; Chopra et al., 2013). Due to its psoralen containing furocoumarins, it has the potential to induce photosensitive reactions. We present the first reported case of Babchi-induced phytophotodermatitis in the UK, presenting as sunburn.

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## Case report

A 32-year-old female, with Fitzpatrick skin type II, presented to the regional burns unit with mixed depth (primarily superficial to superficial partial thickness) burns covering 4% of the total body surface area (TBSA), as a result of sunbathing.

She had a past history of vitiligo diagnosed over 10 years previously, treated unsuccessfully with topical corticosteroids at the time of diagnosis. She was otherwise fit and well, and took no regular prescribed medications. However, she had used herbal medications, including oral Herbal Aid Babchi capsules at fluctuating doses, in addition to topical Babchi oil. She had not taken any oral herbal

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**Fig. 1.** Photographs taken by the patient, of her axilla and groin, immediately before presentation to the emergency department.



**Fig. 2.** Photographs taken by the patient, of her axilla and groin, immediately before presentation to the emergency department.

medication since eight months pre-presentation, as the COVID19 pandemic had interrupted the supply chain.

On the day of presentation she had applied topical Bioline Babchi oil to the vitiliginous skin at her groins, axillae, wrists, chest, and popliteal areas, plus a small amount on her lips. She then sunbathed in 23° heat for approximately 1 h 45 min on a clear, sunny day in London, with no UV protection. Of note, she had used topical Babchi preparations in the past, but not this particular Bioline brand, which was of a stronger concentration.

Over the next few hours she began to develop severe pain and erythema of her chest, with blistering at the sites of Babchi oil application, predominantly affecting her groin and axillae.

On examination, she was systemically well but in severe pain. There were flaccid blisters of varying size, with underlying generalised erythema, in the axillae, inguinal region, and popliteal fossae (Figs. 1 and 2). There was sharp demarcation with sparing of the suprapubic area and genitals which had been covered by clothing during UV exposure.

Given her history and examination findings, following dermatology review, this led to a diagnosis of phytophotodermatitis, secondary to Babchi oil.



**Fig. 3.** Photographs taken by the nursing staff, of her axilla and groin, following deroofing and cleaning of the blistered areas.



**Fig. 4.** Photographs taken by the nursing staff, of her axilla and groin, following deroofing and cleaning of the blistered areas.

Following blister deroofing and wound cleaning (Figs. 3 and 4 below), the wounds were dressed using 1% Flamazine (silver sulphadiazine) cream and Acticoat silver-coated antimicrobial dressings. Topical 0.1% betnovate ointment was used to reduce surrounding inflammation. She was discharged after 48 h with outpatient dressing changes.

## Discussion

Contact with sensitising botanical substances followed by exposure to ultraviolet (UV) radiation can lead to a phototoxic reaction characterised by pain and erythema, and sometimes progression to

a bullous eruption.<sup>3</sup> This is termed ‘phytophotodermatitis’.<sup>3</sup> In the UK it is most commonly caused by furocoumarins, found in citrus fruits, parsnips, carrots and giant hogweed.<sup>4,5</sup>

There are case reports in the literature of phytophotodermatitis mimicking partial thickness burns, highlighting its importance in consideration as a differential diagnosis. Furniss and Adams described a case of erythema progressing to blistering on the hands, face and lower leg in a 2-year-old, following contact with the common Rue (*Ruta graveolens*).<sup>6</sup> In 2013, Sforza et al. reported on a significantly more severe case in Turkey, in which a 42-year-old female presented to a burns unit with 81% TBSA, partial thickness burns after using fig leaf tea as a tanning agent, requiring admission to burns intensive care unit (ICU).<sup>7</sup> There is only one case in the literature of phytophotodermatitis triggered by application of topical Babchi preparations, which occurred in India.<sup>8</sup> This patient was managed with further Ayurvedic preparations, rather than standardised burns unit protocols.<sup>8</sup>

Indigenous plants have been used in traditional medicine for centuries as remedies for various diseases. Babchi or Bakuchi (*Psoralea corylifolia*) is a plant found across India, China and Southern Africa, and is used in traditional Ayurvedic medicine for treatment of dermatological conditions such as psoriasis, vitiligo and leprosy, via oral or topical routes.<sup>1,2</sup> It is employed as such because it has anti-inflammatory, anti-oxidant and immune-modulatory properties.<sup>1,2</sup> The psoralen containing furocoumarins promote pigmentation.

To our knowledge, this is the first formally reported case of Babchi-induced phytophotodermatitis to occur in the UK, and highlights the potential risks of herbal treatments, in addition to considering differentials to common sunburn.

## Conclusion

This case is a reminder that sometimes there is more than meets the eye in burns and we must always be thorough in our history taking to uncover uncommon differentials, including phytophotodermatitis. With ever-increasing international trade, we will continue to experience unique hospital presentations that are out of the ordinary to the average UK clinician, and hence we must always emphasise to our patients the importance of consulting a healthcare professional before use of herbal remedies.

## Declaration of Competing Interest

The authors declare no conflict of interest and no financial gain.

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