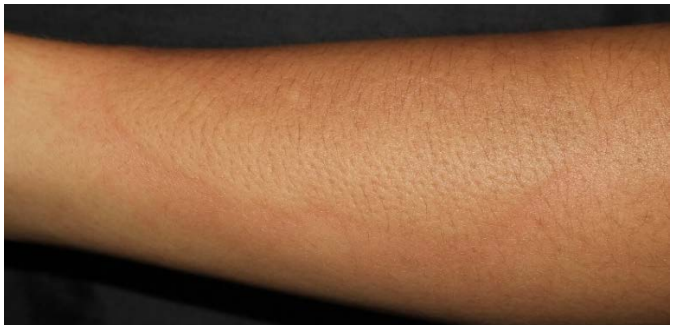
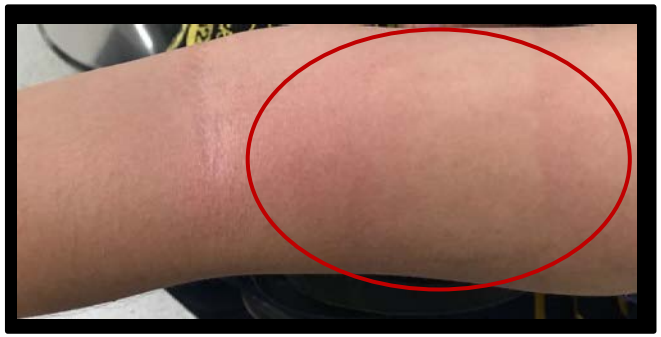
Case 1.1
A 15-year-old Thai male
Chief complaint: wheal and flare on photo-exposed areas for 9 months.



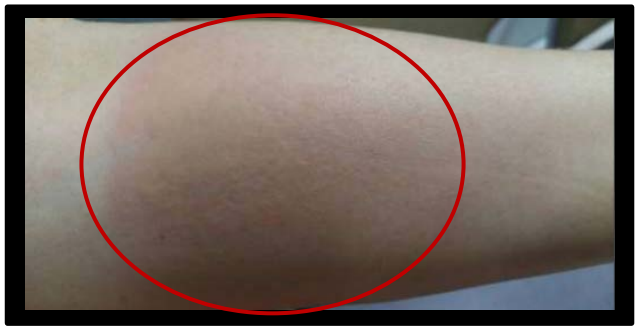
Present illness: he presented with 9-month history of wheal and flare on photo-exposed skin after sun exposure for 1 hour, which resolved within a few hours without scar, pigmentation and systemic symptom.

Case 1.2
A 19-year-old Thai female
Chief complaint: erythema and wheal on photo-exposed skin for 1 year.



Present illness: she presented with 1-year history of erythema and wheal on sun-exposed skin after sun exposure for 10-30 minutes, which disappeared within an hour without scar, pigmentation and systemic symptom.

Case 1.3
A 62-year-old Thai female
Chief complaint: hive-like lesions on photo-exposed areas for 4 years.



Present illness: she presented with 4-year history of hive-like lesions on sun-exposed areas after sun exposure for 10 minutes, which disappeared within 30 minutes without scar, pigmentation and systemic symptom.

Past history:

Case 1.1, 1.2

- Allergic rhinitis and no current medication

Case 1.3

- Hypertension
- Current medications: aspirin 81 mg, atenolol 50 mg and omeprazole 20 mg daily
- Drug allergy: tetracycline

Family history (3 cases)**:** no history of similar symptoms.

Dermatological examination:

- Large wheal and flare on left arm

Physical examination: systemic examination not remarkable in all three cases

Lab investigations:

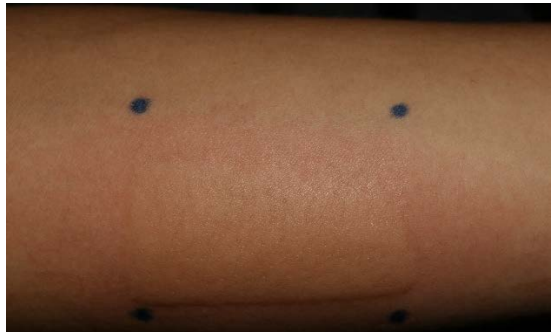
- **ANA:** negative in all patients

Phototesting

Light source:

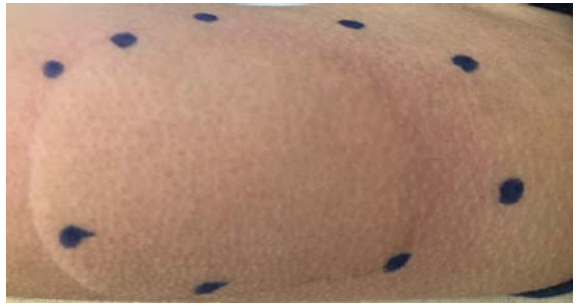
- UVA: UVA lamp (Waldmann UVA 700L)
- UVB: NBUVB lamp (Philips UVB Narrowband TL 20W/12 RS)
- Visible light: Slide projector (Halogen-Lampe 24 V 150 W)

Case 1.1



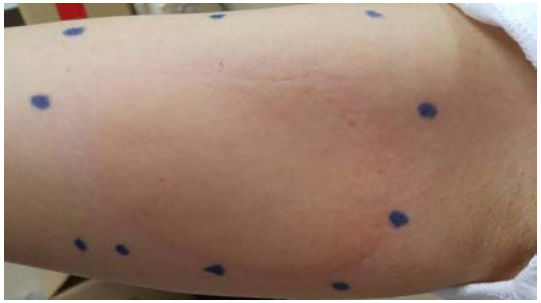
- UVA: MED > 18 J/cm^2
- UVB: MED > 70 mJ/cm^2
- Visible light: wheal and flare within 19 minutes

Case 1.2



- UVA: MED > 18 J/cm^2
- UVB: MED > 90 mJ/cm^2
- Visible light: wheal and flare within 30 minutes

Case 1.3



- UVA: MED > 18 J/cm^2
- UVB: MED > 90 mJ/cm^2
- Visible light: wheal and flare within 30 minutes

Diagnosis: solar urticaria triggered by visible light

Treatment:

- non-sedating antihistamine, sun avoidance, physical sun protection and vitamin D supplement

Presenter: Ittipon Tubtieng, MD.

Consultant: Natta Rajatanavin, MD.

Discussion:

Solar urticaria (SU) is a rare photosensitivity disorder which was first described in 1905.[1] A study of 1200 cases with chronic urticaria in Thailand reported a prevalence of 0.3% for SU.[2,3] Demographic data showed female predominant (86.7%) and mean age of onset in the third decade of life (29 years). The most common site is upper extremity follow by head and neck.[4]

Diagnosis of SU should be confirmed by phototesting which determine the eliciting action spectrum and the minimal urticarial dose (MUD) necessary to evoke lesions.

Mast cells play a major role in pathogenesis of SU, however, the exact mechanism has not been fully understood. Mast cell degranulation mediated by IgE response to photoinduced endogenous cutaneous antigen is the most likely mechanism. [5,6]

Patients present with wheal and flare limit to sun-exposed areas within 5 to 10 minutes after sun-exposed and then resolve within 1-2 hours. Co-existing with pruritus is common but burning sensation or rarely pain can present. Severe symptoms such as malaise, headache, nausea, bronchospasm and syncope can also present after severe attack. Common action spectrum is visible light, UVA, less frequently by UVB and rarely infrared.[7]
The main differential diagnosis of SU include other forms of urticaria, particularly heat urticaria, polymorphous light eruption (PMLE), cutaneous lupus erythematosus (LE) and very rarely erythropoietic protoporphyria (EPP). The detail of patient history can help for differential diagnosis from other forms of urticaria. Time course of onset can exclude PMLE and laboratory investigation can separate LE and EPP. Drug-induced solar urticaria such as tetracyclines[8], fluoroquinolones, chlorpromazine, benoxaprofen[9], topical tar, pitch, repirinast and some sunscreen such as the benzophenones should be evaluated.

The histopathology are similar to other urticaria. There is mild dermal edema with sparse perivascular mixed neutrophilic and eosinophilic infiltrate.[10]

The main treatment for SU is non-sedating antihistamine, sun avoidance, physical sun protection, vitamin D supplement and discontinue medication in case of drug-induced solar urticaria.[11] In recalcitrant cases, phototherapy[12], Omalizumab, plasmapheresis or IVIg are treatment of choice.

Our cases present with history of wheal and flare after less than an hour of sunlight exposure and resolved within a few hours without scar or pigmentation. From the timing of onset, clinical courses and clinical presentations, we can exclude other photodermatoses diseases. There is no history of drug-induced urticaria. LE was ruled out by negative ANA. The diagnosis was confirmed by phototesting with visible light but negative results after UVA or UVB exposure.

Treatment in all cases are non-sedating antihistamines, sun avoidance, physical sun protection and vitamin D supplement.

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