

## Pool Palms: A Case Report

Mario Cutrone<sup>1</sup>, Enrico Valerio<sup>2</sup> and Ramon Grimalt<sup>3\*</sup>

<sup>1</sup>Pediatrics Operating Unit, Ospedale Degli Angelo, Venice, Italy

<sup>2</sup>Neonatal Intensive Care Unit, San Bortolo Hospital, Vicenza, Italy

<sup>3</sup>UIC-Barcelona, Barcelona, Spain

\*Corresponding author: Ramon Grimalt, Faculty of Medicine and Health Sciences, International University of Catalonia, Barcelona, Spain, Tel: + 34617301661; E-mail: rgrimalt@uic.es

Received date: May 09, 2019; Accepted date: May 17, 2019; Published date: May 24, 2019

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### Abstract

Pool palms is a relatively unknown entity among doctor and this may lead to its misdiagnosis. While it might look like an allergic contact dermatitis it is more related to the friction of children's hands and feet while playing in swimming pools. A correct diagnosis can avoid expensively and potentially sensitizing diagnostic procedures such as patch testing. A new therapeutic approach is given with the idea of preventing the onset of the disease. With this report, we describe a clinical case and review the clinical data that can be useful to recognize and prevent the disease.

**Keywords:** Pool palms; Erythema; Dermatitis; Atopic pulpitis

### Introduction

This is a benign and unreported condition of the skin, affecting areas of the hands and feet exposed to repeated contact with the rough surfaces of the edges or bottoms of swimming pools. [1-5]. There have been many cases which have identified at some severe stage.

It has certain symptoms such as itch, burn, or develops bumps to cause your skin. While not often an indicator of a more serious condition, it can be a sign of an infection or. You can develop a rash all over the body, including the palms of your hands.

Hyperhydration of the corneal layer due to prolonged bathing appears to be the main factor, increasing fragility in the skin and thus leading to the disorder [5].

Its presence among children appears to result from their reduced skin thickness and a young child's increased propensity to play in the pool, rather than swim [1,2].

Diagnosis is simple and does not require additional tests. When pool activity is ceased for a few days, the process is usually corrected.

### Clinical case

Here we comment on the case of a 6-year-old boy whose mother was very concerned about persistent redness and soreness on her son's fingertips.

On examination, we could observe edema and erythema affecting the palmar part of the distal phalange on the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> fingers and toe pads.

On close examination, partial and superficial erosions were also visible in Figure 1.



**Figure 1:** Pool Palms: Redness, fissures, and edema on the palmar portion of the distal phalange related to continuous contact with the edge rough surfaces of the pool.

Clinical anamnesis revealed that this child was on a summer break at the grandparents' family house with his cousins and that they spent more than 2 hours a day playing in a deep swimming pool. As he was neither a good nor confident swimmer he mostly stayed on the side with his hands on the rough edge of the swimming pool.

We provided the child with a barrier dimethicone-based cream (Ducray, France Exomega A-derma barrier cream) to be applied before every pool session.

A telephone call from the mother 2 weeks later stated that the condition had immediately improved and had not occurred again.

### Discussion

Pool palms is a type of irritant contact dermatitis. The appearance of the lesions is related to the swelling of the skin due to persistent immersion and to the contact of the rough anti-slippery surfaces at the edges of the swimming pools.

Other similar occurrences of pool palms have been reported in the literature [1-5]. In most reports, authors state that it is due to repeated rubbing of the palms and soles on the rough pool surface. The condition usually disappears spontaneously when a break from the pool is taken.

This condition is predominant in the younger pediatric population because of their increased propensity to play games in the pool, rather than swim. Finally, we also believe, like other authors, that “pool palms” is frictional dermatitis rather than a “wet dermatitis” and the causative factor is contact with the pool’s rough surface [1].

On differential diagnosis, Allergic Contact Dermatitis (ACD) and atopic pulpitis should be included. ACD usually appear more on the dorsa of hands and is not related to the amount of exposure but to the sensitization. In atopic pulpitis patients have usually shown other atopic signs or symptoms before.

There is a difficult discussion about the differences between atopic pulpitis and irritant contact dermatitis. For some author atopic constitution would only be a type of skin more prone to develop irritant contact dermatitis. For others, irritant contact dermatitis is a more specific entity and atopic patients do not only have more sensitive skin but a complex immune-related alteration that makes them more reactive.

There is a variant of pool palms affecting the feet of the patient. In this occasion friction with the anti-slippery surfaces of the swing pool and the pushing at the bottom of the swing pool while diving might be the trigger.

It is also interesting to mention that in sport some athletes might develop calluses while others might develop blisters. Calluses usually occur on the hands when subjected to unusual increases of pressure or friction. Specifically, oarsmen, devotees of racquet sports, golfers and gymnasts are those more likely to get hand calluses.

It is one of the secrets of succeeding in training, to get the exact amount of progressive increase of exercise and friction to allow the

skin to react and develop calluses and not blisters. Some athletes would be more sensitive to the friction than others and we could include atopic patients in this group.

In the literature, we did not find any treatment options for this entity. Our case improved with the explanation given to the mother and with the preventive treatment provided by the barrier cream. It is hard to distinguish what helped more: knowing the problem and avoiding the cause or the chemical barrier.

Whatever the reason, we suggest that barrier creams containing dimethicone might be useful for the prevention of this entity. Further cases would help in finding the best preventive chemical option for this condition.

## Conclusion

Pool palm is benign and not severe entity. It is commonly misdiagnosed. We believe that this article may help on reaching the right diagnosis in the future patients the reader may see which can cause awareness in the people.

The swelling of the skin under the water and the friction of the skin to the pool rough surfaces is usually acting as a trigger to this type of localized irritant dermatitis.

## References

1. Wong LC, Rogers M (2007) Pool palms. *Pediatr Dermatol* 24: 95-96.
2. Martínez JM, Ricart JM (2009) Erythematous-violaceous lesions on the palms. *Actas Dermosifiliogr* 100: 507-508.
3. Blauvelt A, Duarte AM, Schachner LA (1992) Pool palms. *J Am Acad Dermatol* 1927: 111.
4. Lacour JP (1995) Palmar juvenile dermatitis from the pool (Dermatite palmaire juvenile des piscines). *Ann Dermatol Veneerol* 122: 695-696.
5. Novoa A, Klear S (2016) Pool Palms. *Arch Dis Child* 101: 41.