

## CASE REPORTS

# Topical fig sap induced phytophotodermatitis to eradicate molluscum contagiosum and flat warts

**Robert Daniel Hoffman**

Departments of Family Medicine and Health Education, Tel Aviv University, Israel

**Correspondence:** Robert Daniel Hoffman. Address: 8 Gordon Street, Rehovot, Israel. Email: Hofman\_r@mac.org.il

**Received:** January 2, 2014

**Accepted:** February 17, 2014

**Online Published:** June 29, 2015

**DOI:** 10.5430/crim.v2n3p40

**URL:** <http://dx.doi.org/10.5430/crim.v2n3p40>

## Abstract

Folk medicine describes the use of figs to treat skin lesions. This therapeutic use of fig sap is even mentioned in the Bible. Fig sap can cause irritant or phototoxic reactions when combined with sun exposure termed Phytophotodermatitis. Contact with plant-derived phototoxic substances (furocoumarins or psoralens) followed by sunlight exposure produces clinical lesions that have therapeutic activity for small skin lesions. In children, conventional topical treatment of flat warts or Molluscum Contagiosum may be difficult because of poor compliance. Here, we present two cases of induced phytophotodermatitis by using fig sap over a period of 4-6 weeks to treat multiple flat warts in a 12-year-old boy, and a case of Molluscum Contagiosum in a 6-year-old girl. These cases suggest an alternative treatment for skin lesions.

## Keywords

Photodermatitis, Natural products, Fig, Ficus, Complimentary medicine, Molluscum contagiosum

## 1 Introduction

Molluscum Contagiosum is a common disease. An Australian population based study published in 1999 found an overall seropositivity rate of 23% <sup>[1]</sup>. Although self-limited, there is typically a lengthy period (up to two years) until resolution that is difficult for patients (and their parents), especially when lesions multiply from self inoculation. Like many other viruses in the poxvirus family Molluscum is spread by direct skin to skin contact. In adults Molluscum spread may be seen as a result of contact sports. Molluscum occurring in the genital region in sexually active individuals is classified as a sexually transmitted disease. Treatment may be difficult as caustic agents are painful, and patients are reluctant to undergo repeated treatments. Flat warts, although less common, may not be self limited in adults, and often require repeated local treatments to eradicate all of the lesions.

Phytophotodermatitis is a common cutaneous phototoxic reaction. Contact with plant-derived phototoxic substances (furocoumarins or psoralens) followed by sunlight exposure produces clinical lesions. These phototoxic substances are found in various vegetable families. The Fig genus *Ficus* belongs to the Moraceae (mulberry) family. The milky latex found in the leaves and stems contains the irritant and phototoxic chemicals that may produce a phototoxic reaction <sup>[2,3]</sup>. These reactions may occur in anyone following contact with fresh figs <sup>[4,5]</sup> (see Figure 1).



**Figure 1.** Fig sap on stem of freshly picked fig

These phototoxic reactions, caused by fig sap, can be used to treat skin disease: the use of fig sap to treat skin lesions was even mentioned in the Bible: The prophet Isaiah recommended using crushed figs to treat the biblical plague “Shchin”, a skin disease translated as “boils” or “Mange”. "For Isaiah had said, Let them take a lump of figs, and lay it as a plaster upon the boil, and he shall recover" (Isaiah 38:21). Folk medicine in many Middle Eastern countries includes the fig as a topical treatment. Moreover, a study from Iran<sup>[6]</sup> has shown that the efficacy of treating common warts with fig latex is similar to that achieved by cryotherapy.

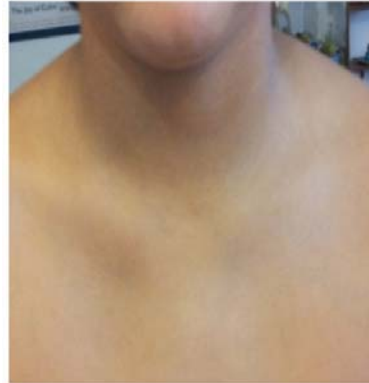
Here, we present two cases of topically induced phytophotodermatitis caused by exposure to *Ficus carica* sap from freshly picked unripe figs placed on skin lesions. These case reports suggest an efficient alternative for the treatment of *Molluscum Contagiosum* and flat warts that may be particularly beneficial to children (see Figures 2-4).



**Figure 2.** Molluscum Contagiosum on upper torso



**Figure 3.** Application of fig sap on Molluscum lesions



**Figure 4.** Resolution of Molluscum lesions on upper torso

## 2 Case reports

Case one: A 12-year-old boy presented to our primary care clinic with multiple flat warts on the dorsum of his hand and forearm. In the past, he had experienced a painful episode of phytophotodermatitis on his upper back after picking figs and touching his upper back. After describing the procedure and rationale, we obtained informed consent from the parent. We performed the local application after picking an unripe fig from the fig tree behind the clinic. The milky sap that immediately forms at the base of the stem was placed on each lesion. The boy then exposed his arm to the sunlight for ten minutes. He reported a burning sensation, itching and mild pain within two minutes. After ten minutes he washed off the sap and the symptoms promptly abated. We repeated this treatment on a weekly basis for 5 weeks and noted that the warts reduced in size after the second treatment and resolved completely within forty days.

Case two: A 6-year-old girl presented to our clinic with multiple Molluscum Contagiosum over both legs. After obtaining informed consent from the parent we applied a freshly picked unripe fig, using the milky sap forming at the base of the stem, on each lesion. The girl then exposed her lesions to the sunlight for ten minutes. She reported a burning sensation and itching within minutes. After ten minutes she washed off the sap and the symptoms abated. We repeated this treatment on a weekly basis for 3 weeks and noted that the vesicles became inflamed and then dried up in the days following the treatment and resolved completely within thirty days.

## 3 Discussion

Furocoumarins, plant-derived phototoxic substances, have been detected in parts of the *Ficus carica*, the common fig tree [2, 7]. Phytophotodermatitis is a well-known phenomenon caused by sequential exposure to certain species of plants containing furocoumarins and then to sunlight [2, 3, 7]. Indeed, fig sap can cause irritant or phototoxic reactions, as reported by Ippen, who demonstrated clinical phytophotodermatitis following contact with fresh figs [3]. However, this phytophototoxic reaction can be therapeutic in treating skin lesions.

Here, we showed two cases in which Molluscum Contagiosum was treated weekly for 3-5 weeks with fig sap and eventually resolved. Human Papilloma Virus (HPV) has been isolated in many types of warts [8]. Whereas these lesions are often self limited, sometimes a local inflammatory reaction is observed before these warts stop being viable and disappear. Thus, it is possible that the induction of a local inflammation with the phytophotodermatitis effects of fig sap recruits an immune reaction that eradicates the HPV virus. Therefore, instigation of local inflammation by the phototoxic reaction may be the underlying mechanism of action for this treatment, as shown with cryotherapy of viral warts [9, 10].

Here we report that fig sap can be efficiently used to treat Molluscum Contagiosum and flat warts. Although self limited, the treatment of these skin lesions in pediatric patients is challenging due to low compliance with conventional topical treatments.

Conventional topical treatment with Liquid Nitrogen or other caustic agents may be difficult because of poor compliance with potentially painful treatment. This difficulty is compounded by treatment regimens requiring repeated visits. We suggest that phytophotodermatitis may be a popular treatment option for patients. This also serves as an ancient and effective “folk” treatment that may be popular with many parents preferring “natural” cures.

## References

- [1] Konya J, Thompson CH. Molluscum contagiosum virus: antibody responses in persons with clinical lesions and seroepidemiology in a representative Australian population. *J Infect Dis.* 1999; 179: 701-704. PMID:9952381 <http://dx.doi.org/10.1086/314620>
- [2] Zaynoun ST, Aftimos BG, Abi Ali L, *et al.* Ficus carica; isolation and quantification of the photoactive components. *Contact Dermatitis.* 1984; 11: 21-25. PMID:6744838 <http://dx.doi.org/10.1111/j.1600-0536.1984.tb00164.x>
- [3] Ippen H. Phototoxic reactions to figs. *Hautarzt.* 1982; 33: 337-339. PMID:7107277
- [4] McGovern TW. The fig-Ficus carica L. *Cutis.* 2002; 69: 339-340. PMID:12041811
- [5] Polat M, Oztas P, Dikilitas MC, *et al.* Phytophotodermatitis due to Ficus carica. *Dermatol Online J.* 2008; 14: 9. PMID:19265622
- [6] Bohlooli S, Mohebipoor A, Mohammadi S, *et al.* Comparative study of fig tree efficacy in the treatment of common warts (*Verruca vulgaris*) vs. cryotherapy. *Int J Dermatol.* 2007; 46: 524-526. PMID:17472688 <http://dx.doi.org/10.1111/j.1365-4632.2007.03159.x>
- [7] Innocenti G, Bettero A, Caporale G. Determination of the coumarinic constituents of Ficus carica leaves by HPLC. *Farmaco Sci.* 1982; 37: 475-485. PMID:7128806
- [8] Al-Mutairi N, AlKhalaf M. Mucocutaneous warts in children: clinical presentations, risk factors, and response to treatment. *Acta Dermatovenerol Alp Panonica Adriat.* 2012; 21: 69-72.
- [9] Dawber R. Cold kills. *Clin Exp Dermatol.* 1988; 13: 137-150. PMID:3073026 <http://dx.doi.org/10.1111/j.1365-2230.1988.tb01958.x>
- [10] Kwon IH, Lee JH, Kim JA, *et al.* Study of the ideal method in cryotherapy of wart. *Korean J Dermatol.* 2003; 41: 1193-1197.