Current Treatment of Verruca

Mickey D. Stapp, DPM
Evans, GA
Etiology

- Infection of the epithelium with HPV
- Affects 7-10 percent of population
- Plantar verruca caused by HPV 1,2,4,60 or 63
  - Andrews’ Diseases of the Skin: Clinical Dermatology
- Theoretically, break in stratum corneum
- More advanced in children and immunocompromised
- Mosaic- multiple, shallow, widespread
- Myrmecia- deep lesions below skin surface, painful
Treatment Options

- Ablative (salicylic acid, debridement, cantharone)
- Topical medications
- Oral medications
- Intrallesional injections
- Surgical excision
- Cryotherapy
- Laser
- Combinations
Topical medications

- **Imiquimod**
  - Immunomodulatory agent
  - Approved for BSC, SCC, and anogenital warts
  - May be useful in immunocompromised patients
  - 4 months therapy

- **5-fluorouracil**
  - Antineoplastic agent interfering with DNA replication
  - Combined with 10% salicylic acid increases cure rate
  - 12 week therapy
Oral medications

- Retinoids
  - Chemically related to vitamin A
  - Alter keratinization
  - No more than 3 months
  - Topically under occlusion also effective

- Cimetidine
  - H2-receptor antagonist
  - Inhibits stomach acid production
  - Inhibits T-cell function at histamine receptor sites
  - May be effective in children
Intralesional injections

- **Bleomycin sulphate**
  - Antiviral and antineoplastic actions
  - Effective in 2/3 of cases reported
  - Injections every 2-4 weeks

- **Candida antigen**
  - Uses immune system to recognize fungal antigen
  - Delayed type hypersensitivity reaction to clear HPV
  - Injection every 3-4 weeks
  - May clear other lesions not injected
Surgical excision

- PT nerve or local block
- Sharp excision with curettage of base
- Cauterization of base
- Scarring if violate dermis
Cryotherapy

- Cold causes necrosis of tissue containing the virus
- Can be painful
- Multiple treatment esp for plantar verruca
- Preferred in children with digital or dorsal lesions
- Other uses: AK, SK, premalignant lesions
- No tissue for biopsy
Pulsed Dye Laser

- Targets hemoglobin and dermal blood vessels
- Local anesthesia may be needed
- Multiple treatments
- For recalcitrant lesions
My Preferences

• One or several small digital or dorsal lesions

***CRYOTHERAPY***

• Mosaic- combination topical therapy

Compounded Wart Gel

Cimetidine 2%
Deoxy-D-Glucose 0.2%
5-FU 3%
Salicylic acid 15%
My Preferences

- Isolated or multiple deep plantar verruca

  Cantharidin in combination with podophyllin and salicylic acid.

  - Salicylic acid 30%
  - Podophyllin 2%
  - Cantharidin 1%
History of Cantharidin

- More than 2000 years
- In China, used for furuncles, TB, rabies, cancer
- In Europe, appeared in *Materia Medica* in 50 to 100 AD
- Hippocrates prescribed for dropsy
History

- Known as Spanish fly, an aphrodisiac
- Based on observation of pelvic congestion in woman and priapism in men after ingestion
- Not a true aphrodisiac, can cause fatal poisonings
- Has been used as a homicidal agent in South Africa
History

- Used as a blistering agent since 1950s
- Satisfied all the safety requirements of the Food, Drug, and Cosmetic Act of 1938
- In 1962, FDA required manufacturers to submit efficacy data, and none was submitted
- Removed from the market in 1962
FDA Modernization Act of 1997

- Certain substances may be compounded by a physician or a pharmacist on a customized basis for individual patients

- Substances cannot be part of USP or NF monograph nor a component of an FDA-approved drug

- Known as the “Bulk Substance List”

- FDA proposed that cantharidin should be limited to “topical use in the professional office setting”
Beetlejuice
Beetlejuice

- Beetles from the order Coleoptera and family Meloidae
- From genera *Mylabris* and *Lytta*, especially *Lytta vesicatoria*, better known as “Spanish Fly”
- Male beetle produces the substance and transfers the substance to the female during mating
- The female beetle covers its eggs with the chemical as a defense against predators
Mechanism of Action

- Cantharidin acts as a blistering agent or acantholytic
- Absorbed by the lipid layers of the epidermis
- Causes release of proteases that cause degeneration of the desmosomal plaque, leading to detachment
- Leads to intraepidermal blistering causing the tissues with the virus to separate from the surrounding skin
Advantages

- No scarring since blistering is intraepidermal
- Other destructive methods, cryotherapy, excision, laser and electrical cautery, can produce scarring
- No cases of systemic intoxication or scarring reported with proper use of cantharidin by a physician
Literature

- Cantharidin has been used successfully for more than 60 years

- Epstein and Epstein, *California Medicine*, 1960
  - 56% of digital and 33% of periungual warts cleared in a single application
  - Others required 1 or 2 additional treatments
  - Long-term cure rate of 70%

- Ormond CS, *JAPMA*, 1962
  - Treatment for intractable plantar lesions
Literature

• Beccerro de Bengoa Vallerio, et al, JAPMA, 2008
  • Retrospective study of 144 patients with simple or mosaic plantar warts tx with cantharidin compound
  • Complete eradication in 138 of 144 patients (95.8%)
  • Of these, 125 (86.8%) required a single application
  • 13 (9.0%) needed two or more applications
Treatment

- The compound is applied to the lesion or lesions after debridement
- No local anesthesia is required
- Leave area dry and covered for 4 hours for digital and dorsal verruca
- Leave area dry and covered for one day for plantar verruca
What the Patient Can Expect

- Tingling or burning sensation within a few hours of application
- Blister formation within 24 to 48 hours
- Pain and tenderness associated with blister can last 2 to 4 days
- Pain meds may be required or patient seen earlier to drain the sterile abscess of the blister
Follow-up

- F/U visits usually at 2-3 weeks
  - Healing is complete, area is free of blisters, and hyperkeratosis is more easily debrided
- If no obvious verruca, no further tx
- If verruca still noted, reapplication of cantharidin and f/u again in 2-3 weeks
Conclusion

- Many different treatment options
- Plantar verruca most common and most difficult
- Cryotherapy good choice for thin skinned areas
- Topical meds good for peds and mosaic verruca
- Laser for recalcitrant verruca
- Bettle juice my mainstay
Conclusion - Cantharidin

- Safe and effective
- Easy to use
- Local anesthetic not required
- No risk of scarring
- Porokeratomas and IPKs
- ICD-10  B07.0
- CPT  17110 for 1st lesion and up to 14 lesions
  17111 for more than 15th lesions
Where to Order

Dormer Labs, Inc.
91 Kelfield Street
Unit 5
Toronto, Ontario
(866) 976-7637
info@dormer.ca