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Treatment of Cutaneous Warts With Multiple Puncture Technique

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Abstract

Background: Despite a multitude of treatment options, cutaneous warts on the hands can be a recalcitrant clinical problem. **Methods:** Based on *Current Procedural Terminology* (*CPT*) billing codes, the office database was searched for a 10-year period of warts treated with a puncture technique after institutional review board approval. Office notes were examined, and patients were contacted to assess wart resolution or the need for further treatment as well as any complications. **Results:** Of 16 patients who were identified with the treatment and diagnosis, 13 were able to be contacted. Median time to resolution was 22 days with a range of 10 to 30 days. Median size was 10 mm, range of 6 to 20 mm. Patients ages ranged from 7 to 88 years. Symptom duration prior to treatment was a median of 16 months, range of 5 to 48 months. Follow-up median was 6 years, range of 2 to 156 months. Three patients were less than 1 year from treatment, all others had follow-up more than 4 years. Complete resolution was seen in 11 patients (85%). Four patients had resolution of other warts in the local area who were not treated with puncture. Three patients had resolution of untreated warts at distant sites. Other than local tenderness, there were no complications. **Conclusions:** Barbotage, the multiple puncture of cutaneous warts, may be a reasonable treatment with minimal morbidity.

Keywords: barbotage, verruca, warts

Introduction

Multiple treatment paradigms exist for cutaneous warts from the standard of salicylic acid, to cryotherapy, to South American blistering beetle juice among others. Efficacy is highly variable, and recalcitrant lesions are common.

Due to their clever biology, cutaneous warts are difficult to eradicate. Human papillomavirus (HPV) local invasion of epidermal keratinocytes, the etiology of cutaneous warts, evades cell-mediated immune response by not expressing antigens on the deep surface of the keratinocyte. Antigens are expressed on the superficial surface, away from immune mediators. Early during infection, HPV releases a series of proteins some of which reduce the number of Langerhans cells surrounding the infection. HPV proteins also suppress immune cytokines like interleukin-8 (IL-8).

Barbotage, or multiple puncture (10+ passes) of needle through the wart into the subcutaneous tissues, is theorized to open an immune pathway by pushing antigens from the superficial to the deep surface. This creates a pathway for immune cells to access the lesion, and increases blood flow to the lesion, all of which may lead to an immune-mediated destruction of the wart.

Materials and Methods

After institutional review board approval, based on *Current Procedural Terminology* (*CPT*) billing codes and *International Classification of Diseases, Ninth Revision* (*ICD-9*) diagnosis codes, the office database was searched for a 10-year period for warts treated with a puncture technique (2000-2010). Office notes were examined, and patients were contacted to assess wart resolution or the need for further treatment as well as any complications.

The technique involves a field block or digital block, followed by at least 10 passes through the top of the lesion into the base/subcutaneous tissues with a needle (ranging from an 18 gauge to a 25 gauge in this series), followed by a soft dressing. No specific additional aftercare was requested. The procedure was performed in the office by 2 experienced fellowship-trained hand surgeons.

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Results

Of 16 patients who were identified with the treatment and diagnosis, 13 were able to be contacted. Patients ages ranged from 7 to 88 years, median 33 years. Median wart size was 10 mm, range of 6 to 20 mm. Eight were on the fingers, 2 on the palm, and 3 were on the feet. Diagnosis was based on visual inspection. Median symptom duration prior to treatment was 16 months, range of 5 to 48 months. Treatments prior to barbotage comprised a variety of interventions including cautery, laser, salicylic acid, excision, cryotherapy, steroids, antibiotics, cantharidin, antivirals, and duct tape. Indications were the failure of other conservative treatments and a desire by the patient to undergo this procedure. Follow-up median was 6 years, range of 2 months to 156 months. Three patients were less than 1 year from treatment (2 months, 5 months, and 10 months, respectively) and all others were more than 4 years from treatment. Average time to resolution was 22 days with a range of 10 to 30 days. Complete resolution was seen in 11 patients (85%). The patient with only 2-months follow-up noted the lesion was smaller, but had not yet resolved. Four patients had resolution of other warts in the local area that were not treated with puncture. Three patients had resolution of untreated warts at distant sites (feet). Other than local tenderness, there were no complications. There were no recurrences within the follow-up period of patients who had successful resolution.

Discussion

An excellent recent review analyzed the efficacy of multiple treatments (barbotage was not addressed in this review due to lack of clinical reports of this treatment modality).[1] Intralesional bleomycin in one study of 50 patients had the best overall rate of resolution at 96% in the studies assessed in this review.[2] Topical dinitrochlorobenzene was also promising with clearance rates of approximately 80%.[3]

Barbotage, the multiple puncture of cutaneous warts, may be a reasonable treatment with minimal morbidity based on this small series, which demonstrated 85% resolution of the lesions treated. The spontaneous resolution of untreated warts on the same patient that resolved within 30 days of the barbotage treatment suggests a possible immune system activation for the presence of HPV antigens.

Spontaneous resolution has been reported, so it is certainly possible that some of the patients in this series would have experienced resolution of the warts without treatment. However, given the duration of the lesions prior to treatment, this is perhaps unlikely.

Ethical Approval

This study was approved by St Vincent Hospital Indianapolis institutional review board (IRB R2011-145).

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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