

## CASE REPORT

# Intralesional bleomycin for treatment of a recalcitrant wart in an immunocompromised patient: A safe, effective, and underutilized therapy

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## Abstract

Injectable bleomycin is infrequently used for recalcitrant warts despite its efficacy, acceptable safety profile, and high patient satisfaction compared with other treatment modalities. We present an immunocompromised patient with a large recalcitrant wart successfully treated with intralesional bleomycin to provide greater clinical exposure, training, and practice with intralesional bleomycin.

## KEYWORDS

bleomycin, human immunodeficiency virus, immunocompromised, verruca vulgaris, wart

## 1 | INTRODUCTION

Warts are common benign lesions caused by the human papillomavirus, which affect approximately 10% of the global population.<sup>1</sup> In high-risk populations such as children or immunocompromised individuals, the prevalence may be as high as 20% percent.<sup>1</sup> Despite the expanding arsenal of wart therapies, recalcitrant verrucae are quite common not only in those with predisposing risk factors but also in many otherwise healthy persons. Intralesional bleomycin is a well-tolerated remedy with proven safety and satisfaction, as well as a track record of high efficacy.<sup>2-4</sup> Despite decades of experience and data supporting injectable bleomycin for recalcitrant warts, this treatment remains uncommon in clinical practice. We present an immunocompromised patient with a large recalcitrant wart successfully treated with intralesional bleomycin, underscoring the ease and efficacy of this modality, while

encouraging its use for verrucae unresponsive to other modalities.

## 2 | CASE REPORT

A 71-year-old man with human immunodeficiency virus (HIV) infection on highly active antiretroviral therapy (HAART) with a CD4 count of 534 and an undetectable viral load was referred to dermatology for evaluation of a painful lesion on the left buttock of one-year duration. The lesion had steadily enlarged for six months before growth halted and crusting ensued. On examination, a solitary, firm verrucous plaque on the left buttock measured 1.6 cm by 2.0 cm (Figure 1A). A slice biopsy specimen demonstrated histologic features of verruca vulgaris. The lack of a response topical imiquimod cream, 3.75%, for two months led to curettage surgery (Figure 1B).

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**FIGURE 1** Verruca vulgaris treated with bleomycin. (A) Verruca on left buttock at initial presentation. (B) Recurrence of verruca status post-slice biopsy and persistence after two months of treatment with imiquimod 3.75% cream. (C) No residual or recurrence of warty activity 5 weeks after treatment with intralesional bleomycin

Recurrence of the verruca within 4 weeks of curettage led to treatment with intralesional bleomycin. The affected area was anesthetized with lidocaine HCL, 2% plus epinephrine (1:100,000). Verrucous tissue was pared flat with a #15 blade, and 0.5 ml of bleomycin sulfate (3 U/ml) was injected directly into verrucous foci at a depth of 1–1.5 mm. Injection site healed with residual hypopigmentation, no recurrence at 10 weeks (Figure 1C).

### 3 | DISCUSSION

Bleomycin sulfate is a water-soluble compound composed of cytotoxic glycopeptide antibiotics isolated from a strain of *Streptomyces verticillus*.<sup>5</sup> Use of intralesional bleomycin for treatment of recalcitrant warts has been reported since the late 1970s, with multiple studies showing 59%–100% efficacy with an acceptable safety profile. Transient pain is the most frequent side effect.<sup>2</sup> Cure rates are lowest for plantar warts (approximately 60%), but can be reliably high for periungual and other extremity locations (94% and 95%, respectively).<sup>6</sup> It is postulated that keratinocyte apoptosis induced by bleomycin leads to elimination of virus.<sup>7</sup> Aside from pain, local (e.g., Raynaud's phenomenon) and systemic (e.g., flagellate hyperpigmentation) side effects are rare.<sup>2,6</sup> Because intralesional bleomycin can lead to increased serum drug levels, a thorough history and counseling are required, especially for people with childbearing potential.<sup>2,6,7</sup> Plasma bleomycin concentrations may be reduced by using doses as low as 0.25 U/ml with reported efficacy.<sup>8</sup>

Despite the ease of administration along with decades of documented efficacy and safety, intralesional bleomycin remains a last-resort treatment for warts.<sup>3</sup> A study by Kruter et al.<sup>2</sup> showed that 78% of patients reported satisfaction with intralesional bleomycin. The treatment was recommended by 97% of those who attained complete remission (74%). Given the high efficacy and high rate of satisfaction compared with other destructive modalities,

bleomycin is likely underused in clinical practice due to provider inexperience.<sup>2,6</sup> Following proper injection technique neutralizes risks of transient, Raynaud phenomenon when treating warts on digits and/or ulceration from an excessive volume of bleomycin per injection site.<sup>2</sup>

With increased exposure, training, and experience, providers will feel more confident about offering intralesional bleomycin as second- or third-line treatment of warts. Our case underscores that bleomycin is a simple, safe, and effective therapy for recalcitrant warts in non-pregnant or lactating patients.

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None.

#### CONFLICTS OF INTEREST

The authors have no conflict of interest to declare.

#### AUTHOR CONTRIBUTION

All authors made substantial contributions to the writing and editing of the manuscript and approved the final version. T. Ngo and S. Cohen prepared the manuscript. H. Hwang and S. Cohen were involved in patient care and provided critical feedback during the preparation of the manuscript. B. Amin performed the histological analyses and wrote the histological descriptions.

#### PRIOR PRESENTATION

This article has no prior presentation or publication.

#### CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

#### DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

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