Verruca Pen PEII® Case Study.

This case study was produced and written by:

- Debbie Delves MSc FCPodM FCPM FFPM RCPS(Glas) - Clinical Director at Dulwich Podiatry.
- Paul Savage BSc , MCPod - Clinical Director at North East Podiatry, Paul Savage Associates.

Patient Description

The patient presented in this case study is a healthy male, aged 58. He is in good general health with no relevant medical history. He presented with multiple lesions on his right foot which were causing him significant distress.

Case History

The patient presented at the practice in June 2019 with multiple verrucae on the right foot which had not responded to any self-treatment. They had been present for approximately three years. There was a history of non-specified self-treatment and in-clinic treatment for fourteen months prior to commencement of treatment with the Verruca Pen PEII® (Verruca Pen) with both cryosurgery (using liquid nitrogen) and 70% salicylic acid in conjunction with home treatment with Duofilm.

Physical Examination

There were multiple verrucae present on the right foot.

Under the right third metatarsophalangeal joint (MTPJ) area, there was single lesion measuring approximately 6mm x 5mm.

There were multiple mosaic type verrucae between the right third and fourth toes interdigitally and under the plantar proximal interphalangeal joint (IPJ) area of the fourth toe. The main lesion of this cluster measured approximately 4mm x 4mm.

There was a further verruca in the cleft under the right fifth toe measuring approximately 5mm diameter.

Treatment Plan

Alternative treatments were discussed and the Verruca Pen, with an air filtration unit, was chosen for its accuracy of application and the convenience of no dressings being required post-operatively on a difficult lesion site. Written consent was obtained for both treatment and for clinical photography to be taken and shared.

Treatment was applied monthly with application of the Verruca Pen occurring post-debridement of the verrucae. The viral tissue was sublimated using plasma generated by the Verruca Pen, with the resultant plume being removed by a High Efficiency Particulate Air (HEPA) extractor. No post-application dressings were required.

Outcome

The table below shows the improvement in the size of the verrucae after each application of the Verruca Pen:

	R3rd MTPJ	**R5th cleft**	**R4th main lesion**
1st review	5x6mm	5x5mm	4x4mm
2nd review	4x6mm	4x5mm	4x4mm
3rd review	4x6mm	4x4mm	3x3mm
4th review	4x5mm	2x2mm	3x3mm
5th review	2x2mm	2x2mm	2x2mm
6th review	2x1mm	2x2mm	2x2mm
7th review	Appears clear	1x1mm	Appears clear

At the final review, all lesions appeared clear.

Using a visual analogue scale from 0-4, the patient reported a level of discomfort of no more than 2 (ie, little to no discomfort) during the application of the Verruca Pen. The first two applications were reported as 0. The next four applications were felt slightly more with a score of 1. The final application was the most tender with a score of 2.

Discussion

The Verruca Pen is a plasma cosmetic device. The use of plasma technology in surgical application was first explored in the 1990s.

The Verruca Pen creates electrical energy which ionises atmospheric gases on contact, creating high energy plasma. This plasma is delivered in a concentrated dose using a sterile microprobe, effectively destroying the affected epidermal tissue by heating, fragmentation and vaporisation, resulting in trauma to the skin cells and theoretically stimulating the body's immune response[1]. The precision of the treatment ensures only tissue that is involved in the verruca is sublimated, leaving uninvolved tissue untouched.

Treatment is virtually painless although the patient may experience slightly more discomfort in the later stages of the course of treatment, which appears to be linked to a reduction in verruca size.

No dressings are required after treatment with the Verruca Pen, which is an important convenience factor for some patients.

[1] The EVerT2 (Effective Verruca Treatments 2) trial: a randomized controlled trial of needling vs. nonsurgical debridement for the treatment of plantar verrucae.
Hashmi F, Fairhurst C, Cockayne S, Cullen M, Bell K, Coleman E, Harrison-Blount M and
Torgerson D, British Journal of Dermatology (2017) 177: 1285–1292

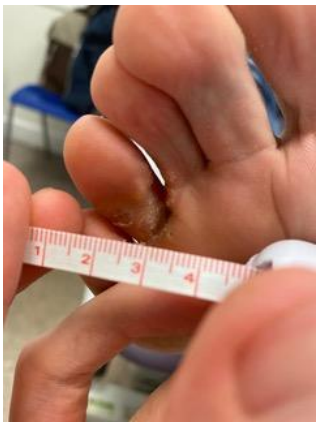
The Verruca Pen is ergonomically and aesthetically well designed for easy use and does not appear to intimidate even young patients. The single use microprobe enables the operator to apply the plasma with precision.

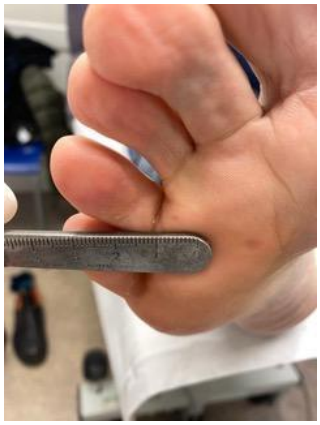
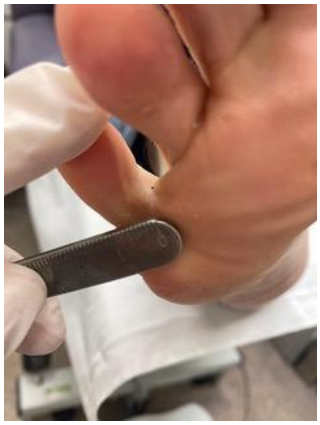
The use of plasma for the treatment of dermatological conditions, including viral infections, was postulated by Heinlin et al (2010)[2]

Verrucae are common skin infections caused by the human papilloma virus. Although many verrucae resolve naturally, patients find them distressing and want them treated. Cure rates of verrucae are generally low, with more aggressive regimes being more effective, but having worse side effects.[3]

The Verruca Pen is a relatively painless and acceptable option for patients of all ages. This treatment modality is well tolerated by patients and convenient in terms of only needing to return monthly. Patients report an appreciation for little or no need for dressings. They do not need to keep the area dry and there is little postoperative tenderness.

There is no written evidence to quantify the success rate of this treatment modality but anecdotally this treatment modality appears to tick lots of boxes in terms of an option for the treatment of verrucae.

[2] Plasma medicine: possible applications in dermatology.
Heinlin J, Morfill G, Landthaler M, Stolz W, Isbary G, Zimmermann JL, Shimizu T, Karrer S.J Dtsch Dermatol Ges. 2010 Dec;8(12):968-76.

[3] British Association of Dermatologists' guidelines for the management of cutaneous warts 2014
Sterling J C, Gibbs S, Haque Hussain S S, Mohd Mustapa M F and Handfield-Jones S E, British Journal of Dermatology. 2014 July 171: 696-712