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Bamboo vinegar for seborrheic keratosis: A case report

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Abstract

Although it is unclear what causes seborrheic keratosis, infection with *Malassezia furfur* (*pityrosporum ovale*) could be involved in the pathogenesis. Thus, manipulation of *Malassezia furfur* could be therapeutic for some patients with seborrheic keratosis. Because bamboo vinegar reportedly has fungicidal activity, it is possible that bamboo vinegar could have beneficial effects. Here we report a case of a 52 year old woman who administered topical bamboo vinegar for aggravation of seborrheic keratosis on her cheek. Aggravation stopped immediately and lesions flaked off and became less pigmented in months. Recurrence was not noticed after cessation of the treatment.

Introduction

Seborrheic keratosis is a benign epidermal skin tumor. Although seborrheic keratosis is often called senile wart, it is prevalent across ages in adulthood. Common therapies for seborrheic keratosis include cryotherapy and laser therapy but recurrence in other places is common. It is not yet clear what causes seborrheic keratosis but infection with *Malassezia furfur* (*pityrosporum ovale*) could contribute. In a prior study, *Malassezia* was detected in 36.3 % of male seborrheic keratosis patients and 13.0% of female seborrheic keratosis patients (Noma et al., 1996). *Pityrosporum* organisms were also identified in 61 of 100 (61%) of patients with Seborrheic keratosis on Periodic acid–Schiff stained sections (Borenstein, Mirzabeigi, and Vincek 2005). Thus, manipulation of *Malassezia furfur* could be therapeutic for some patients with seborrheic keratosis. Because Bamboo vinegar has been reported to have fungicidal activity (Lee et al. 2010), it is possible that this agent could have beneficial effects. Here we report the case of a woman who administered topical bamboo vinegar for aggravation of seborrheic keratosis on her cheek.

Case

A 52-year-old Japanese woman who was known to one of the authors (YI) contacted him about worsening Seborrheic keratosis lesions and asked about potential alternatives for treatment. In her late twenties, she had one flat Seborrheic keratosis lesion on her left cheek, which remained without expansion. The seborrheic keratosis lesion became pigmented during summer months in her mid-thirties. A new 3 x 3 mm lesion appeared 4 mm above the original lesion two years prior to contact but the lesion was not pigmented. Otherwise she was in good general health with no personal or family history of skin cancer, and no history of dandruff. General blood tests including Vitamin D levels performed one year prior were within normal limits. In May 2022, both the original 8 x 12 mm lesion and newer 3 x 3 mm lesion above the original region on her left cheek started to expand in height and became remarkably pigmented. Both lesions were clearly circumscribed, dark brown and nodular with rough projections (first photo). On palpation, the lesion was dry and firm without pain or itchiness.

Because a fungal infection could contribute to the worsening of her

seborrheic keratosis, she was told about bamboo vinegar as a possible alternative treatment. Distilled bamboo vinegar (KOUSUKE SAN Bamboo Chikusaku Vinegar Liquid 60ml) was purchased from Kyoto, Japan. One drop of bamboo vinegar per lesion was applied twice a day without dilution starting on 7/6/2022. After application she did not experience irregular sensitivity but noted a unique odor of this vinegar. Keratosis was apparent in the first week of treatment (second photo). Within two weeks, shrinkage and flaking of nodules from the upper lesion were noticed (third photo). Four weeks later the upper satellite lesion flattened and became less pigmented (fourth photo). Apparent flattening was also observed in the original lesion with flaking of nodules subsequently (fifth photo). Slight pigmentation remained in both lesions but continuously became less pigmented and almost unnoticeable in the upper lesion (sixth photo). Both lesions are reportedly improved compared to before the recent exacerbation. Treatment was stopped in December, 2022. Recurrence was not noticed over the ensuing four months.

Discussion

The cause of Seborrheic keratosis is not yet fully elucidated but infection with *Malassezia furfur* (*pityrosporum ovale*) could be a contributing factor in some patients (Noma et al., Borenstein et al., 2006). This fungus has variable response to treatment and has high minimal inhibitory concentration (MIC) values against various azole drugs commonly used (Miranda et al. 2007). Although *Malassezia furfur* is also believed to be a major cause of seborrheic dermatitis, it has been reported that that oral fluconazole is not effective (Cömert et al. 2007). Thus, skin disorders caused by *Malassezia furfur*, if they appear, may require prolonged and high dose treatment with antifungal agents. Topical treatment with bamboo products may be an alternative to these agents in terms of efficacy and fewer adverse effects. A prior study indicates that bamboo essential oil is superior to ketoconazole for treating *Malassezia furfur* dermatitis (Lee et al. 2010). Bamboo vinegar is used as a folk medicine to remove warts in Japan and the present case indicates it may have



Figure 1: Photos show two skin lesions on the left cheek. The upper left is before treatment. The others are during treatment. Dates below the photos are the dates photos were taken.

efficacy in treating some cases of seborrheic keratosis. Although we hypothesize that its antifungal activity plays the major role in controlling seborrheic keratosis, it has also reported that bamboo vinegar eliminates NLRP3-mediated inflammation (Ho et al. 2013). Thus, it is also plausible that bamboo extracts prevent the fungus from inducing excessive keratinization via inflammatory responses. The main antifungal compound in bamboo extract is presently unclear. Liao et al., isolated 4-hydroxycinnamic acid from bamboo extract and speculated that this was the main antifungal compound (Liao et al. 2021). Because bamboo extract is also rich in Crude *Dittrichia viscosa* (L.) Greuter leaf (Rhimi et al. 2017), this might also be useful for treating *Malassezia*-associated skin disorders including seborrheic keratosis.

Conclusion

We observed a case of seborrheic keratosis, which expanded rapidly with a satellite lesion. Topical application of distilled bamboo vinegar repaired the lesions in weeks. No adverse effects were reported. Use of bamboo vinegar or related compounds could have potential to treat certain forms of Seborrheic keratosis.

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