

Unconventional Treatment of Seborrheic Keratosis Using a Glycol-Ether Based Chemical Mixture (Brake Fluid): A Case Report

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Abstract

Seborrheic keratosis (SK) or senile wart is a common benign epidermal tumor with predominance in elderly persons. Treatment is mainly by minor surgery, including cryosurgery with liquid Nitrogen, shave excisions, and laser-assisted removal. Medical approaches have had limited success. In this case report we treated a 58 years old Negro male patient who presented with an inflamed SK lesion on the right upper eyelid with a commonly available Glycol-ether based chemical mixture (available as brake fluid DOT4+) topically. The KS lesion regressed completely by the end of four days treatment period. We recommend use of Glycol-ether based chemical mixture (available as brake fluid) for the treatment of SK.

Keywords: Seborrheic, Keratosis, Inflamed, Glycol, Ether, Brake, Fluid, Treatment.

1. INTRODUCTION

Seborrheic Keratosis (SK) are very common benign epithelial skin tumors[1]. Many terms have been applied for these tumors such as senile wart, melanoacanthoma, basal cell papilloma, senile keratosis, and Seborrheic wart, but the most widely accepted term is Seborrheic keratosis. They are found in the elderly population and show an increasing incidence with age, reaching a peak at 60 years [2]. SK are harmless and not contagious. They have a predilection for the trunk, neck, and forehead, and arms [3]. The tumors are not seen on mucous membrane [4]. SK usually looks like a waxy or wart-like growth. It typically appears on the face, chest, shoulders, or back. It may be a single growth, although multiple growths are more common [5]. Skin lesion ranges in color from light tan to brown or black, is round or oval shaped, has a characteristic pasted on appearance, is flat or slightly raised with a scaly surface. It ranges in size from very small to more than 2.5 cm in diameter and may itch. Etiology of SK is not well known. Risk factors for SK include advanced age of greater than 50 years, prolonged exposure to sunlight,

hereditary, and Human papilloma virus infection. Diagnosis of SK is mainly by mere appearance of the growth on physical examination. This, however, can be confusing because of the variability in the clinical appearance of the condition. Dermoscopic findings of most cases typically include fissures and ridges, hairpin vessels with white halo, comedo-like openings, and milia-like cysts [6].

We present a case report in which we treated a male Negro patient who presented with an inflamed SK lesion on the right upper eyelid with a Glycol-ether based chemical mixture (available as brake fluid).

2. CASE REPORT

A 58 years old male Negro patient presented to a medical clinic in Ndola, Zambia, with a history of a growth on the right upper eyelid for several months duration. The patient noticed that the growth had suddenly increased in size and was painful over a period of few days prior to presenting himself at the clinic. Physical examination of the patient revealed a tender to touch lump measuring 3 mm in diameter on the right upper eyelid. A diagnosis of Inflamed SK

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was made. We didn't have any medical or surgical methods to remove the SK lesion. We persuaded the patient to try a liquid chemical mixture which was Glycol-based, commonly called brake fluid (DOT4+). The patient consented to this suggested. He was instructed to apply this chemical on to the growth four times per day for four days using cotton wool soaked in this chemical. The day when the patient was first seen and when treatment was commenced was designated as Day-0. We

reviewed the patient in the morning on a daily basis for three days. On Day-1(one day of treatment) the patient reported a marked reduction in the size of the SK lesion. On Day-4(four days of treatment) the SK lesion could barely be seen. However, the patient reported itchy sensation each time after application of the brake fluid. The patient was declared cured after four days of the treatment (Day-4). The patient's response to treatment is shown in Figures 1, 2, 3, 4, 5, and 6.



Figure1. *Day-0. One view of the SK lesion (Before the commencement of treatment)*



Figure2. *Day-0. Another view of the KS lesion (before commencement of treatment)*



Figure3. *Day-1 (KS lesion after one day of treatment)*



Figure4. *Day-2 (SK lesion after two days of treatment)*



Figure5. *Day-3 (SK lesion after three days of treatment)*



Figure6. *Day-4 (SK lesion after four days of treatment)*

3. DISCUSSION

Treatment of SK is not usually needed [7]. SK can be removed if it becomes irritated or bleeds, pains because of inflammation, or if the individual does not like its looks or feels. Treatment options for SK include freezing with Nitrogen (cryosurgery) [2, 8]. The other surgical method is by scraping the skin's surface (curettage) [8]. Another surgical intervention is by burning the lesion with an electric current (electrocautery or electrodesiccation) [9]. Laser surgery is another method that is used to remove SK. In this method the growth is vaporised using a laser (ablation). This method is rather

expensive. Medical approaches in treatment of SK include use of 40% Hydrogen peroxide topical solution [10, 11]. Another medical intervention is the use of Nitric-Zinc complex solution to remove SK [12]. Topical Vitamin D has also been claimed to be effective in removing SK [13].

Even though surgical and medical approaches are available, there is a need for improvement in SK treatment [7]. In our case report we used a Glycol-ether based chemical mixture, commonly known and available as brake fluid (DOT4+). We chose to try brake fluid on our patient because of unpublished and unconfirmed

reports of successful use of brake fluid in the treatment of a fungal skin infection called Pitriasis versicolor in adult Negro patients. Brake fluid is a type of Hydraulic fluid used in hydraulic brake and hydraulic clutch applications in automobiles, motor cycles, light trucks, and some bicycles. It is used to transfer force into pressure and to amplify braking force. The three main components of DOT4+ brand of brake fluid are the Solvent component (60-90%), the Lubricating component (5-30%), and the Additives component (2-5%). The Solvent component is made up of Polyglycol Ethers (R-(O-CH₂-CHR-O)_n-H) and sometimes their borate esters. The Lubricating component is made up of Polyglycol (HO-(CH₂-CHR-O)_n-H). The Additives component comprises corrosion inhibitors/anti-oxidant/antifoam. We postulate that the possible mode of action of the mixture of Polyglycol ethers and sometimes their borate esters and Polyglycol is by initiating apoptosis of the SK leading to its resolution.

4. CONCLUSION

Our case report has demonstrated that Glyco-ether based brake fluid does offer a rapid resolution of SK. Compared with traditional surgical and medical interventions for managing SK, Glyco-ether based brake fluid is easily available and affordable. We recommend use of brake fluid (DOT4+) in the treatment of SK.

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REFERENCES

- [1] Girisha BS, Kamath D, Shrinath P, Harish PS: Seborrheic keratosis; A rare case of conductive deafness. JCDR. 2021; 6: 913-4.
- [2] Jackson JM, Alexis A, Berman B, et al: Current understanding of Seborrheic Keratosis: Prevalence, Etiology, Clinical Presentation, Diagnosis, and Management. J Drugs Dermatol. 2015; 14(10): 1119-25.
- [3] De Loof M, van Dorpe J, van der Meulen J, et al.: Two cases of Seborrheic Keratosis of the external ear canal: involvement of PIK3CA and FGFR3 genes. Int J Dermatol. 2018; 57(6): 703-6.
- [4] Rajabi P, Adibi N, nematollah P, Heidarpour M, Eftekhari M, Siadat HA: Bowenoid transformation in Seborrheic Keratosis; A retrospective analysis of 429 patients. J Res Med Sci.2021: 217-21.
- [5] Wollina U: Recent advances in managing and understanding Seborrheic Keratosis. F1000 Res. 2019; 8 F1000 Faculty Rev-1520.
- [6] Carrera C, Segura S, Anguilera P, et al.: Dermoscopy improves the Diagnostic Accuracy of Melanomas clinically resembling Seborrheic Keratosis: Cross-sectional study of the ability to detect Serrheic Keratosis-like Melanomas by a Group of Dermatologists with varying degrees of experience. Dermatology. 2017; 233(6): 471-479.
- [7] Del Rosso JQ.: A closer look at Seborrheic Keratosis: Patient perspectives, clinical relevance, medical necessity, and implications for management. J ClinAesthetDermatol. 2017; 10(3): 16-25.
- [8] Wood LD, Stucki JK, Hollenbeak CS, et al: Effectiveness of cryosurgery vs Curettage in the treatment of Seborrheic Keratoses. JAMA Dermatol. 2013;149(1): 108-9.
- [9] Duque MI, Jordan JR, Fleischer AD, Jr, et al.: Frequency of Seborrheic Keratosis biopsies in the United States: a benchmark of skin lesion care quality and cost effectiveness. Dematol Surg. 2003;29(8): 796-801.
- [10] Bekeschus S, Kolata J, Winterbourn C, et al.: Hydrogen peroxide: A central player in physical plasma-induced oxidative stress in human blood cells. Free Radic Res. 2014; 48(5): 542-9.
- [11] Oyewole AO, Wilmot MC, Fowler M, et al.: Comparing the effects of mitochondrial targeted and localized antioxidants with cellular antioxidants in human skin cells exposed to UVA and hydrogen peroxide. FASEBJ. 2014; 28(1): 485-94.
- [12] Aktas H, Ergin C, Kaseroglu HO: Diclofenac gel may be a new treatment option for Seborrheic Keratosis. Indian Dermatol Online J. 2016: 7(3): 211-2.
- [13] Wat H, Dytoc M: Offlabel uses of topical Vitamin D in dermatology: a systematic review. J Cutan Med Surg. 2014; 18(2): 91-108.

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