

Fruits and Nuts! Unique Homeopathic Treatment of Cutaneous Squamous Cell Carcinoma

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ABSTRACT

Aim: Cutaneous squamous cell carcinoma (cSCC) of the head and neck is preferentially treated with primary surgical excision. We present a case of an advanced lesion appearing to respond to homeopathic supplementation with bitter apricot seed and hedge apple.

Background: Our patient presented with a large, biopsy-proven cSCC of the right nasal ala. Her workup revealed a synchronous primary lung adenocarcinoma necessitating delayed management of the cutaneous lesion. In the interim, she self-treated with oral bitter apricot seed and hedge apple supplements.

Case description: The patient demonstrated significant involution of the cutaneous lesion, and eventual surgical resection was negative for carcinoma.

Conclusion: The literature has *in vitro* evidence for the antiproliferative properties of compounds derived from hedge apples. Bitter apricot seed has little evidence supporting anticancer activity and is not recommended due to the risk of cyanide toxicity. However, there is little alternative explanation for her dramatic response other than these substances.

Clinical significance: We describe a case of cSCC of the head and neck that appears to have responded to bitter apricot seed and hedge apple.

Keywords: Alternative treatment, Head and neck cancer, Squamous cell carcinoma.

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BACKGROUND

Nonmelanoma skin cancer is the most common type of cancer, with the American Cancer Society estimating 5.4 million cases of basal and squamous cell carcinoma of the skin diagnosed per year in the United States¹. cSCC is second in incidence behind basal cell carcinoma (BCC), with an annual incidence of 200,000–300,000 cases per year.^{1,2} The highest incidence occurs in the head and neck regions, as the areas with the most sun exposure are at the highest risk.³ Although the mortality from this condition is relatively low, with 2,000 people dying from either cSCC or BCC per year,¹ the economic burden of skin disease is high, with 29.1 billion dollars in direct medical costs per year.⁴

The mainstay of treatment of cSCC is primary surgical resection.⁵ Primary radiation therapy with or without chemotherapy may be considered for nonsurgical candidates.⁵ Adjuvant radiation with or without chemotherapy is reserved for resections with positive margins unable to undergo re-excision or high-risk features such as perineural invasion.⁵

We present a case of cSCC of the nasal ala that appears to have responded to supplements of hedge apple, also known as Osage orange, and bitter apricot seed without surgical or other therapeutic intervention. We also discuss the active compounds within these supplements that have been found to have antiproliferative properties.

CASE DESCRIPTION

A 58-year-old female initially presented to our clinic in March 2020 with a 4 cm ulcerative and fungating mass centered at the right nasal ala with extension to the nasal floor and upper lip (Fig. 1). She was referred by an outside dermatologist who performed an incisional biopsy that found invasive squamous cell carcinoma.

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She had a 40 pack/year smoking history but was otherwise healthy. She was determined to need a large resection with free flap reconstruction. During her workup, however, she was found to have an adenocarcinoma in the lower lobe of her left lung. She was referred to cardiothoracic surgery and was treated with video-assisted thoracoscopic surgery alone; no adjuvant therapies were used. However, this necessitated a delay in the management of the cutaneous lesion. She eventually returned to our clinic in June 2020 to readdress her facial cancer. At this point, the carcinoma of her nasal ala had dramatically receded in bulk and involvement in the surrounding structures (Fig. 2).

The patient stated that during the 3 months since we saw her last, she had been taking approximately 1500 mg of ground, dehydrated hedge apple, and 1500 mg of crushed bitter apricot seed in capsule form per day. She tried this on the recommendations of a neighbor who told her these supplements had potential anticancer properties. There was persistent induration within her nasal vestibule, so a repeat biopsy was taken in the clinic. This biopsy was negative for carcinoma. However, she continued to have persistent induration at the location of her initial cancer, so

we recommended resection due to the high likelihood of cancer in her underlying tissues. She was taken to the operating room in August 2020 for definitive resection. She was reconstructed with a submental artery island flap and staged adjacent tissue transfer



Fig. 1: Facial cSCC at time of presentation



Fig. 2: Facial cSCC after self-treatment with hedge apple and bitter apricot seed



Fig. 3: Facial cSCC site after surgical intervention

(Fig. 3). She did very well postoperatively. Her final pathology from the resection was negative for any carcinoma. She has continued to follow up in our clinic without any signs of recurrence.

DISCUSSION

Our case presented with a biopsy-proven invasive squamous cell carcinoma. The initial specimen was performed at an outside facility but reviewed by institutional pathologists and consulting dermatopathologists. Her tumor at presentation was large and would require a free flap for reconstruction. She self-treated with ground hedge apple and bitter apricot seed. While she still underwent surgical resection, her surgery was much less invasive and required a regional flap rather than a free flap. In the end, her pathology was negative for any carcinoma. She received no other adjuvant anticancer therapy, either for the cutaneous lesion or her lung cancer. This case generates the question of whether her tumor was diminished in size by her supplements or spontaneously regressed.

Pomiferin triacetate is thought to be the active compound in hedge apples. It is a prenylated isoflavonoid that was first isolated from Osage oranges in 1939.⁶ Non-acetylated pomiferin has previously been shown to have antioxidative properties^{7,8} as well as antiproliferative properties in transformed breast epithelial cells.⁹ Pomiferin has been shown to have cytotoxic effects on human cholangiocarcinoma cells.¹⁰ Pomiferin was demonstrated to have growth-inhibitory effects on tumor cell lines arising from kidney, lung, prostate, breast, melanoma, colon, and liver cells via histone deacetylase inhibition.¹¹ More recently, pomiferin triacetate was found to have a highly specific mechanistic target of rapamycin (mTOR) inhibition with strong translation inhibition effects.¹² Certainly, the compound has promising antitumor properties, and more research in animal and human models is warranted.

Bitter apricot seed, on the other hand, has been a more popular alternative therapy used by cancer patients for the last 50–60 years. As such, there has been more in-depth research investigating this compound. The antiproliferative compound derived from these seeds is called amygdalin. This was first isolated in the 1830s and was tried as a cancer treatment in Russia in 1845; eventually patented in the United States of America as laetrile in the 1950s.¹³ A systematic review of the literature regarding laetrile as an anticancer treatment found no sound evidence that the compound had anticancer properties.¹³ In fact, the National Cancer Institute (NCI) did its own investigation into the drug and failed to demonstrate any anticancer activity in human clinical trials.¹⁴ The drug additionally showed a fairly significant toxicity profile, chiefly in the form of cyanide poisoning.^{13,15} As such, the drug was banned by the Food and Drug Administration by 1980.¹⁶

CLINICAL SIGNIFICANCE

Overall, our patient's case resulted in no carcinoma in her final tumor specimen. Her home alternative and self-directed supplementation may or may not have played a role in this outcome. The only other explanation, however, would be an idiopathic, or possibly immune-related, spontaneous regression, which would be unusual given a tumor of this size. While bitter apricot seed would not be recommended in any case due to toxicity, Osage orange, or hedge apple, may have antitumor properties, and further research is warranted in animal and human models.

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