



ACUPUNCTURE FOR XEROPHTHALMIA

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ABSTRACT

Background — Acupuncture is a useful modality in the treatment of xerostomia in head and neck cancer patients. It is also useful in xerophthalmia secondary to Sjogren's syndrome and other pathological circumstances.

Objectives — To describe patients receiving acupuncture for xerophthalmia, and to establish a technique that is reproducible for practitioners.

Design — Acupuncture techniques and case reports.

Main Outcome Measure — Increase in tear pool, subjectively recognized by the patient and clinically confirmed.

Results — Acupuncture may be an innocuous and palliative modality to reduce the symptoms of xerophthalmia by increasing the tear pool in patients.

Conclusion — Xerophthalmia may be significantly relieved by acupuncture. The mechanism is unknown but may be parasympathetically mediated.

KEY WORDS

Acupuncture, Auriculotherapy, Keratoconjunctivitis Sicca, Sjogren's Syndrome, Xerophthalmia, Xerostomia

INTRODUCTION

In previous articles, an acupuncture technique was described^{1,2} and updated³ for the treatment of pilocarpine-resistant xerostomia following radiotherapy for head and neck malignancies. This article discusses how the same acupuncture technique with minor modifications may also be useful in xerophthalmia (dry eyes).

Keratoconjunctivitis sicca or xerophthalmia is a common disorder, with increasing prevalence starting in the 5th decade of life and rising with age. There are many conditions that predispose one to dry eyes. Some of the more common entities include Sjogren's syndrome, an autoimmune disorder of exocrine glands seen primarily in women; medications, which include many antihypertensives, antidepressants, and anticholinergic agents; and aging. In addition, other conditions which can manifest as dry eyes include infiltrative processes such as sarcoidosis, HIV, hepatitis B and C, complications of refractive surgery, and secondary sicca complex from other connective tissue diseases such as rheumatoid arthritis or systemic lupus.⁴

Hypofunction of the lacrimal glands, secondary to lymphocytic infiltration, is a hallmark of Sjogren's syndrome. This condition is manifested by marked discomfort and dryness of the eyes, described as a scratchy and burning sensation with marked decrease in tear film. Sjogren's syndrome also involves hyposalivation of the mouth, resulting in difficulty talking or swallowing dry foods. Sjogren's syndrome patients often develop profound caries at an early age and gastroesophageal reflux, due to the loss of buffering by the saliva.⁴

Treatment of these conditions is primarily symptomatic with artificial tears, lubricant solutions, and muscarinic agonists such as pilocarpine, which often cause significant side effects or are tedious to use many times a day.⁵ These complaints, which greatly affect a patient's quality of life, appear to respond to the acupuncture treatment developed for radiation-induced xerostomia.¹ We also observed that this acupuncture technique is useful in overcoming the complaints of both dry eyes and dry mouth from various prescription drugs used in the treatment of hypertension and other conditions.

METHOD

A sterile needle (Seiren Laser L Type, gauge 3, length 30 mm, distributed by OMS Medical Supplies, Inc., Braintree, MA), is inserted bilaterally in both index fingers in an area on the Large Intestine (LI) meridian slightly proximal to LI 1. This area is designated LI 2'. In addition, auriculotherapy points Point Zero, Shen Men, and an area designated Salivary Gland 2' are needled bilaterally (Figure 1).

After 20 minutes, if there is no increase in the tear pool, it is recommended that the needles in position LI 2' be removed bilaterally and replaced by 2 new sterile needles placed about 3-4 mm proximal to the original inserted needles. If tear pool fails to increase after this modification, the 2 needles located at the Salivary Gland 2' area are replaced by 2 new sterile needles about 3-4 mm proximal to the original insertions. (The authors have rarely needed to alter this sequential modification more than 2 times. This is different from the xerostomia technique where there is usually no need to change the position of the needles to acquire a saliva secretion.)

PATIENTS

Acupuncture treatment requires signed informed consent in our center. Four patients diagnosed as having dry eyes secondary to other causes are presented.

Case Report 1

A 46-year-old man with a diagnosis of chronic myelocytic leukemia underwent a bone marrow transplantation and developed graft-vs-host effect with bilateral acute dry eyes that did not respond well to lubricants. The patient was treated for dry eyes for 1 1/2 years. His eyes remained adequately moist for up to 2-3 weeks before he needed to repeat acupuncture.

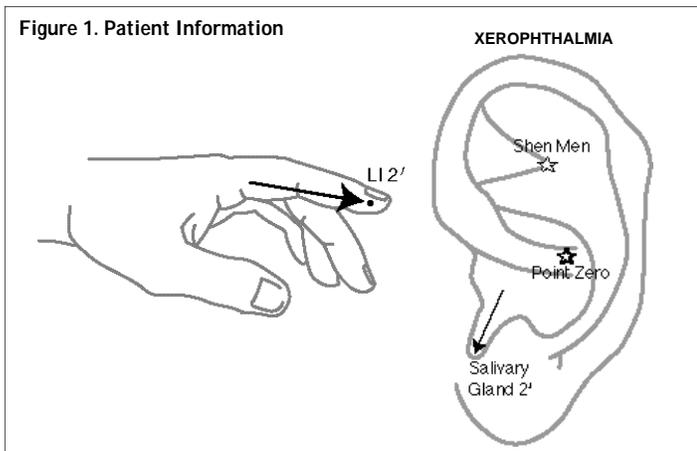
Case Report 2

A 72-year-old woman with bilateral dry eyes with Sjogren's syndrome reported acupuncture that increased the tear flow to both eyes. Prior to treatment, she needed to apply eye drops every 10 min-

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(The opinions and assertions contained herein are those of the authors and should not be construed as official or representing the views of the United States Navy or Department of Defense.)

Figure 1. Patient Information



utes; with acupuncture, only 1-2 times daily. Follow-up visits every 3 weeks appeared adequate.

Case Report 3

A 42-year-old woman, status post surgery for a neuroma with resulting mild paralysis of the right face, was referred for nocturnal dryness of her right eye. Acupuncture increased the moisture in the right eye to a satisfactory level of comfort.

Case Report 4

A 35-year-old woman had laser surgery to her eyes and developed dry eyes bilaterally 2 months later. Lubricants and plugs did not result in satisfactory ocular comfort. The patient received acupuncture and lubricant applications were reduced. Her tear pool became normal in both eyes. She was lost to follow-up after 6 treatments.

RESULTS

There were no adverse effects related to acupuncture. An increase in the tear pool was subjectively present in all patients after acupuncture. Follow-up evaluations at 1-month intervals found that patients maintained a satisfactory tear flow, but monthly retreatments appear necessary to maintain this capacity over time.

DISCUSSION

The tissue damage resulting from radiation injury to the salivary glands is different from that produced by the infiltration of immune cells into the salivary or lacrimal glands as found in Sjogren's syndrome, or of the damage done by graft-vs-host reaction accompanying bone marrow transplant for the treatment of many leukemias. Currently, there is much discussion in the literature on how to best classify and diagnose patients with Sjogren's syndrome and the significant overlap of other patients with dry eye complaints. Many diagnostic criteria exist, but common to all is a measure of a patient's ocular symptoms and signs.

Conventional treatment options such as ocular and oral lubricants, and muscarinic agonists like pilocarpine or cevimeline, are used to manage severe xerostomia. Cyclosporine, azathioprine, and low dose corticosteroids can occasionally improve dry eye symptoms, and interferon α is being studied to increase salivary flow. However, these medications are tedious at best, and can be fraught with significant side effects such as severe hypotension, headaches, excess sweating, nausea, bone marrow suppression, osteoporosis, and the risks associated with immune suppression. Granted, we do not understand the acupuncture mechanism of action that appears to increase the tear pool's aqueous component, but we propose the same mechanism previously published for xerostomia relief by the use of these points – parasympathetic activation.^{2,3} We find this report significant and of value to our colleagues even though it deals

with a small number of patients. Future research must involve a more substantial population.

CONCLUSION

Acupuncture using the above protocol may contribute to increasing the tear pool in patients with Sjogren's syndrome and other etiologies where the aqueous component of the tear pool is significantly reduced. This technique did not produce any adverse effects. Longer observations in a significant number of patients to optimize the technique and further prospective objective measurements of both the tear pool and its components should be the subjects of further research. A prospective trial addressing this has been approved by our Institutional Review Board and is currently accruing patients.

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