

PHOTOESSAY

Traditional Malian Ointment for Styes

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Flowering tops of *Ageratum conyzoides*. Photo by Willcox.

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We observed the preparation of an ointment for topical application on a styne by a traditional healer in southern Mali. The ointment consisted of Shea butter (*Butyrospermum parkii*, Sapotaceae), mixed with the fresh crushed flowering tops of *Ageratum conyzoides* (Asteraceae), and the dried powder of an undisclosed plant. The ointment was to be applied twice daily, and the patient was shown how to prepare it from fresh *A. conyzoides* every day.

Ageratum conyzoides (see first page of this photoessay) is a pantropical herbaceous plant, found not only in Africa, but also in Asia and South America.¹ It has many traditional uses, including infections of the eye, pustular skin infections, and in dressings for burns and wounds.¹⁻⁶ It contains an essential oil made up of monoterpenes, sesquiterpenes, chromenes, and benzofuranes. This oil is active against 20 bacteria, including *Staphylococcus* spp.,⁵ which is the commonest cause of skin infections and styes. The essential oil is found in the fresh plant, and would be well-extracted by a lipid base such as Shea butter. Lipid-soluble constituents are well absorbed through the skin. Recent research claims that water, ethanol, and methanol extracts of the leaves are not very effective against *Staphylococcus aureus*, and one publication went so far as to suggest that the use of this plant should be discontinued for the treatment of multidrug-resistant *S. aureus* (MRSA).^{7,8} However essential oils would not be extracted efficiently by water, and the flowering tops may contain greater concentrations of the active ingredients than the leaves. Furthermore, there is high variability in the secondary metabolites of *A. conyzoides* which include flavonoids, alkaloids, coumarins, tannins, and essential oils; the essential oil content ranges from 0.02% to 0.16%.¹

A water-soluble fraction of *A. conyzoides* leaves is analgesic, and can inhibit inflammatory reactions induced by neutrophil-mobilizing stimuli, as are found in the case of bacterial infections.⁹ It also promotes wound healing.¹⁰ The essential oil also has anti-inflammatory and analgesic properties;¹¹ these properties are useful in the treatment of superficial infections such as styes. The flowering tops contain the pyrrolizidine alkaloids lycopsamine and echinatin which are potentially hepatotoxic,^{4,12} so oral administration is not recommended.⁵

Shea butter is prepared from the nut in the fruit of the *Butyrospermum parkii* tree (Fig. 1). The nuts are roasted for several hours (Fig. 2) and then ground to a paste that is then mixed with water (Figs. 3 and 4) and heated, and the oil floats to the surface. On cooling, this produces a butterlike substance. This is traditionally used for both food (as a fat for cooking) and as a medicine. It is especially used as a topical anti-inflammatory for painful joints, and as an emollient for dermatitis. Shea butter contains glycerides of saturated and unsaturated fatty acids, and triterpene alcohols which are known to have anti-inflammatory activity.⁵

We observed the treatment of a patient with the ointment described above. She presented with a 2-week history of a styne on the right eyelid which was gradually worsening. On medical advice, she had first treated herself for 4 days with a topical antibiotic (aureomycin), and massaged the styne with a warm pad. The styne worsened in spite of this treatment, with the appearance of a white head, apparently containing pus. The whole eyelid became red, inflamed, and swollen, consistent with a diagnosis of preseptal cellulitis (Fig. 5). The patient was seen by 2 medical doctors (a consultant physician and a general practitioner, B.L. and M.W.) who both advised her to take oral antibiotics (erythromycin, in view of a penicillin allergy), and to drain the pus from the styne with a needle. At the time, the patient was working with a project on traditional medicine in the village of Missidouougou in southeast Mali, and decided to consult the traditional healer (T.B.). He prepared the ointment described above and applied it to her eyelid (Fig. 6).

The symptoms started to be reduced within 24 hours. On leaving the village, the patient was unable to obtain



FIG. 1. *Butyrospermum parkii* tree. Photo by Willcox.



FIG. 2. Roasting of *Butyrospermum parkii* nuts. Photo by Willcox.

Shea butter immediately, and made the ointment using a different cream. The next day the symptoms worsened slightly. She then obtained Shea butter and made the ointment as prescribed. She continued this for eight days, with some reduction of her symptoms (Fig. 7). The swelling went down, although she was not aware of the styne bursting to release pus, and the preseptal cellulitis resolved. After 8 days, she ran out of the fresh *A. conyzoides*, so was unable to continue the treatment. The styne remained slightly painful, but this eventually resolved after topical treatment with green clay.

Although this case is complicated by the fact that the patient was unable to complete a full course of treatment, significant improvement was observed in the course of the 8 days of treatment. In particular the use of oral antibiotics was averted, and the preseptal cellulitis resolved. It is unlikely that this improvement would have occurred spontaneously without treatment, because for 2 weeks prior to the herbal treatment there had, in fact, been a gradual exacerbation, despite topical antibiotics. Furthermore the styne did not burst or release pus.



FIG. 3. Traditional preparation of Shea butter. Photo by Willcox.

To protect intellectual property the third ingredient of the ointment was not disclosed by the traditional healer. However even the 2 identified ingredients could be sufficient to explain the observed activity. Although styes often resolve



FIG. 4. Preparation of the ointment: Fresh flowering tops of *Ageratum conyzoides* are ground in a Shea butter base. Photo by Willcox.



FIG. 5. Eyelid before application of the ointment. Photo by Willcox.



FIG. 7. Eyelid after 8 days' application of the ointment. Photo by Willcox.



FIG. 6. Application of the ointment. Photo by Willcox.

spontaneously, in this case, the condition was worsening despite 2 weeks without treatment, and 4 days of topical antibiotics. It was the opinion of the 2 observing doctors that the condition would probably not have improved without treatment. The improvement observed may be attributable to the traditional ointment prescribed.

The traditional remedy described here merits further clinical research as a topical antibacterial agent, for example in the treatment of cutaneous infections such as mild cellulitis, impetigo, pyodermitis ("craw-craw"), and ulcers. It is more readily available and accessible in remote areas of Africa than modern antibiotic ointments such as fusidic acid.

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