CASE REPORT

A CAUSE OF SEVERE CHEMICAL BURN: TOPICAL APPLICATION OF HERBAL MEDICINES

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SUMMARY. We report a 73-year-old male patient with progressive chemical burn on his lower extremities following topical application of a mixture of the oils derived from Rosmarinus officinalis, Brassica nigra alba and Laurus nobilis. It should be kept in mind that herbal medicines which seem harmless can sometimes be dangerous and life-threatening, especially in elderly and diabetic patients.

Keywords: progressive chemical burn, Rosmarinus officinalis, Brassica nigra alba, Laurus nobilis

Case Report

A 73-year-old male patient admitted with 2nd degree burns on knee caps and legs. The patient had diabetes and hypertension. His history told that he had applied a mixture of Rosmarinus officinalis, Brassica nigra alba and Laurus nobilis oils on the area from his knee caps to his feet for his rheumatic complaints (Fig. 1). He applied this dressing for 12 hours a day over a 3-day period. Physical examination revealed bulbous lesions on areas where the dressing was applied. Initial treatment was debridement of the bullae and non-living tissues followed by ample irrigation with isotonic. The wound was then dressed daily with sterile vaseline impregnated

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sponges, and irrigation with isotonic over the dressing continued periodically.

Interestingly, from the patient’s admittance up until the seventh day, new progressive bullae were observed in the thigh – from the inguinal to the lumbar region – where no dressing was applied (Fig. 2). It was also noted that the depth of the burns on the legs increased (Fig. 3). On the tenth day, Gemella morbillorum was isolated in the wound culture. Dermatology and infectious diseases were consulted. Following the outcome of the antibiogram culture test, 500mgr 2x1 i.v. of Multicet and 500mgr 2x1 i.v. of Flagyl treatments were started. To prevent the occurring chemical reaction, treatment with 60mgr/day of Prednol was started by dermatology. Prednol treatment was applied for 15 days in decreasing doses and then stopped. During the treatment, the patient’s oral antidiabetics were cut, and insulin treatment was applied.

Hydrotherapy treatment continued until the formation of new bullae ceased. Then, hydrofiber wound dressing (Aquacel®, Convatec) was applied on regions with 2nd degree burns. The patient was recovered and discharged in 26 days (Fig. 4).

**Discussion**

Cutaneous burns due to plants are a well-established cause of chemical burns.\(^1\)\(^3\) *Brassica nigra alba, Rosmarinus officinalis, Laurus nobilis* are the plants that are often recommended as herbal medicine to treat various diseases. *Brassica nigra alba* is well known in medicine as a stimulating external application. The rubefacient action causes a mild irritation to the skin, stimulating the circulation in that area and relieving muscular and skeletal pain.

The use of *Brassica nigra* (mustard oils) in traditional societies for infant massage has been identified by one study as risking damaging skin integrity and permeability.\(^4\) Because of the allyl isothiocyanate contained, this type of mustard oil is toxic and irritates the skin and mucous membranes.

*Rosmarinus officinalis* is an evergreen bush, native to the Mediterranean area, belonging to the labiate family, and could be used with origanum, sage, mint, thyme and lavender. In phytotherapy, branches with leaves and flowers are used to make shampoo, soap and eau de cologne due to their content of essential oil, flavonoids, rosemarinic acid and terpenical derivatives. For external application only, essential oils diluted at 5% in oil or alcoholic solution, alcoholic extracts, and decoctions are also used as antiseptics, healing and analgesic medicine in rheumatic processes, and as peripheral circulatory or scalp stimulants.\(^5\)

The leaves of the *Laurus nobilis* are mainly used as a spice in cooking, and the essential oil obtained by steam distillation of the leaves is used as an additive in foods, drugs and cosmetics. The essential oil prepared from the leaves has been reported to have antibacterial, antioxidant and antiinflammatory properties. *Laurus nobilis* leaves have also been used to treat rheumatism, neuralgia and scabies.\(^7\) Aqueous extracts of *Laurus nobilis* are used as diuretics, and can also be used as astringents, and even as a reasonable salve for open wounds.\(^8\)

In the literature there are few papers on allergic contact dermatitis, due to *Brassica nigra, Rosmarinus officinalis* and *Laurus nobilis*.\(^9\)\(^11\) There is no information about topical application of their mixture. In our case, it was probably the mixture of these oils that aggravated their al-
ergic and chemical activity. This may explain why pro-
gressive bullae were observed in the femur area, from the
inguinal to the lumbar region, where no dressing had been
applied. Additionally, the patient’s systemic diseases, par-
ticularly the presence of diabetes mellitus, increased skin
sensitivity.

Elderly patients with rheumatic complaints are likely
to be interested in topical application of herbal oils. How-
ever, it should be kept in mind that some herbal medicines
which seem innocuous may sometimes be dangerous and
even life-threatening, particularly for elderly and diabetic
patients, as in the case presented here.

RÉSUMÉ. Nous rapportons un patient de 73 ans atteint d’une brûlure chimique sur ses membres inférieurs causée par une appli-
cation topique d’un mélange d’huiles provenantes de Rosmarinus officinalis, Brassica nigra alba et Laurus nobilis. Il faut garder
t à l’esprit que les médicaments à base de plantes qui semble innocents pourraient parfois être dangereux et potentiellement mortels,
en particulier chez les patients âgés et diabétiques.

Mots-clés: brûlure chimique progressive chimique, Rosmarinus officinalis, Brassica nigra alba, Laurus nobilis

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