Medical Memoranda

A First-aid Treatment of Minor Burns

Treatment of minor burns has always presented a problem in general practice. This is shown by the number of treatments which have come and gone; for instance, carron oil in the dim and distant past, picric acid, tannic acid, petrolatum gauze, sodium bicarbonate, and now cortisone ointment.

A simple domestic remedy is presented which is always available at home, does no harm if the burn turns out to be worse than expected, provides prompt relief of pain, and appears to exert a considerable influence on the course of events within its range of utility.

It was discovered accidentally by the patient in Case 1 in 1947. So far as I can ascertain, it is not generally known and has not been recorded, and I have used it in general practice ever since.

Method.—The affected part should be immersed in milk immediately after the burn has occurred. It must be immersed before serious blister formation has occurred. Immersion should continue until the pain has subsided and there has been a regression of any rudimentary blister. This is easy where the hands are involved, but it is difficult to immerse a foot, for instance, in sufficient milk. This can be overcome by using the milk as a cold compress, but the results are less reliable and it entails more trouble (see Case 4). When the affected part gets greasy from the fat in the milk it should be gently wiped with cotton-wool and reimmersed.

ILLUSTRATIVE CASES

Case 1.—A housewife aged 38 was bottling fruit, when some spilt on the dorsum of her left hand. Finding nothing else available, she plunged it into a jug of milk while she telephoned for advice. One and a half hours later she arrived at the surgery, and the only sign of the burn was some erythema and oedema.

Case 2.—A housewife aged 28 was making jam, when some was upset on her left hand. She telephoned for advice and then immersed it in milk (an unfortunate delay). After four hours the hand showed only erythema and oedema, but no pain.

Case 3.—A girl aged 15 scalded her hand and wrist with boiling water while making tea. She was given instructions by telephone. After two hours her hand showed only erythema and slight oedema, but the part of her wrist not covered by milk showed a typical second-degree burn which took two weeks to heal.

Case 4.—A boy aged 6 was looking through the ash-pit of the kitchen cooker, when a gust of wind caused the flames to blow back. He was burnt on the forehead and nose, with singeing of the hair and eyebrows. He was treated immediately with repeated cold compresses of milk. At the end of one and a half hours all that remained was some erythema of the affected part.

Case 5.—I inadvertently picked up the wrong end of an electric soldering-iron. My hand was obviously quite badly burnt on the palm and fingers, and there was the characteristic smell of scorched skin. After two and a half hours of immersion in milk, during which time blister formation was obvious, there remained only some erythema, slight oedema, and flattening of the epidermal ridges. A full day's work was done the next day without any discomfort or difficulty.

Case 6.—A small child aged 3 put his hand on a hotplate of an electric stove, and the mother was instructed in the

usual way. After two hours of immersion there was scarcely any visible sign of damage except the erythema.

COMMENT

The treatment outlined here is purely of a first-aid nature, and no pretentious claims are made for it. It is suitable only for scalds and burns of first and second degree; it is not suitable for deep burns and those from electricity or chemicals. Success depends upon immersion within a few minutes of the accident, before any serious blister formation has occurred. This should be continued until pain and blisters have subsided, in order to achieve the aim, which, from a domestic point of view, should be the ability to use the part in a few hours without any dressing.

Cooling a burn to relieve the pain is a logical treatment to the lay mind and dates from antiquity. It has been used medically and investigated in recent times (Courtice, 1946; Langohr *et al.*, 1949).

It was claimed by Langohr *et al.* that it greatly reduced the oedema, possibly by diversion of the blood away from damaged capillaries, and thereby avoiding the effects of capillary stasis.

Milk is a colloidal solution containing about 12.6% of proteins, fat, and salts. It follows, therefore, that a burn will not raise the temperature of milk as quickly as that of an equivalent amount of water. Furthermore, according to Sevitt (1957), the protein concentration of the oedema and blisters varies with the severity of the burn, and it may even approach the serum concentration of 8–9% of solid matter. Thus, there could be an osmotic effect which may be assisted by the damaged epidermis.

I have been unable to find any previous reference to the use of a colloid to reduce tissue oedema in burns in order to prevent blister formation. Immersion in a cold colloid seems to produce a phase of regression in the normal sequence of events.

The prompt relief of pain makes this an invaluable treatment with children, and the absence of any "procedures" avoids considerable psychological trauma.

In view of the results obtained from local immersion in cold colloids, further technical investigations seem merited to find out if it could be applied in a more manageable form for larger or less accessible burns.

CONCLUSION

The conventional treatments for minor burns are designed as aids to healing after the damage has occurred; the treatment here described appears to exert a limiting action on the injury process.

As a first-aid measure, milk is readily available where the majority of minor burns occur—in the kitchen; it can be applied by the patient immediately; it is clean; and, as it can be used afterwards, the cost is negligible.

This treatment has been highly successful in a rural general practice for 11 years, so its wider use seems indicated.

F. L. WILLINGTON, M.B.,
Yelverton, S. Devon.

REFERENCES

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