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BY

HERMANN G. KLOTZ, M. D.

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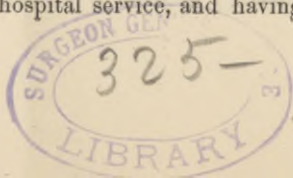




ON THE ADVANTAGES OF  
A COMPOUND SALICYLATED PLASTER  
IN DERMATOLOGICAL AND SURGICAL PRACTICE.

BY HERMANN G. KLOTZ, M. D.

THE value of salicylic acid in the treatment of skin diseases, particularly of eczema in its different forms, has been so generally recognized by dermatologists that it does not seem necessary to add any further testimony bearing on this question. Among the different means of applying the same, the plaster-mulls of Unna and similar preparations have been acknowledged to possess many advantages peculiar to themselves; the high price, however, has prevented their general introduction; particularly into dispensary practice, where they probably would be the most welcome. Comparatively little has been said or written about the application of salicylic acid in the form of the salicylated soap-plaster, which, I believe, was first recommended by Professor Joseph Piek, of Prague, in a paper, "Ueber den Arzneigelatinverband und die locale Behandlung des Eczems," published in 1883 in the "Prager med. Wochenschrift," viii, pp. 53-55. After making extensive use of such a plaster during the last four years in private practice, as well as in my dispensary and hospital service, and having



met with very satisfactory results, I take leave to call the attention of the profession to its advantages.

Professor Pick (*l. c.*) but briefly mentions that he employed, instead of the plaster-mulls, a five-per-cent., ten-per-cent., or twenty-per-cent. salicylated soap-plaster, which could easily be prepared by any apothecary. I have not been able to ascertain whether the soap-plaster of the Austrian Pharmacopœia differs in its composition from that of other pharmacopœias. Usually it is composed of twelve parts of the simple lead or diachylon plaster, two parts of wax, and one part of Castile soap. If you prescribe this plaster, with even five per cent. of salicylic acid, the patient will receive a mass of such hardness that he will not be able to spread it at all, or, if he really succeeds, it will be so dry and brittle that it will not stick, nor accommodate itself to the surface of the part of the body to which it is to be applied. The addition of some substance was, therefore, required to render the mass softer and more pliable; vaseline, on account of its resistance to decomposition, seemed the most appropriate. A further change was considered advisable regarding the soap contained in the plaster. Although a pure soda soap, without any free alkali, acts but mildly on the healthy skin, and although the quantity contained in the soap-plaster is not very great, its macerating and softening influence on parts where the skin is more or less devoid of its epidermal covering might prove harmful during continuous application. I therefore preferred to reduce the quantity of soap by using equal parts of soap-plaster and of the simple diachylon plaster, to which Hebra's diachylon ointment owes its efficacy. After these theoretical considerations, I sought the practical advice of the experienced apothecary of the German Dispensary, Mr. A. Rutenik, in regard to the proportion of vaseline needed to furnish a useful plaster. After several

experiments, Mr. Rutenik found the following formula to give the best mass:

℞ Emplastri diachyli simplic.,	}	. . . 40 parts.
Emplastri saponati,		
Petrolati . . . . .		15 “
Acid. salicylic. . . . .		5 “

Several years' experience has proved the value of this formula, which, about two years ago, was added to the list of remedies regularly prescribed in the German Hospital and Dispensary of New York. For use in certain cases, a ten-per-cent. plaster of the same composition has been prepared. This plaster, to which I propose to give the name of the compound salicylic plaster—*emplastrum salicylicum compositum*—is of a yellowish-gray color, has no particular smell, and, while fully retaining the qualities of a plaster, is soft enough to be spread readily on linen or muslin by any one not entirely inexperienced in this work. In spreading plasters, patients often commit the error of trying to prepare a small piece of cloth, just large enough to cover the diseased part, instead of taking a large piece at once, which allows the application of greater force and of wider excursions of the hand, and cutting it up into smaller pieces afterward to suit the shape and size of the parts to be covered. It therefore often happens that they complain at first of the difficulties of spreading; as a rule, however, they soon gain in practice, and exhibit well-prepared plasters. The adhesive qualities of the compound salicylic plaster are not very great, and this is indeed its most serious drawback. On some portions of the body, particularly on those covered by the stockings, or other closely fitting garments, it will not require any further means to hold it in its place, but generally some cover, such as a glove or mitten, a roller bandage of muslin, a piece of cloth, a pair of swimming tights, or a strip of adhesive plaster, will be required

to secure it in its position. Hereby its applicability is restricted to certain regions of the body—a disadvantage which it has in common with Unna's plaster-mulls and similar preparations, with the exception of collodium, traumaticin, and, perhaps, the gelatins; but in my experience the latter do not furnish so absolutely dry a surface as has been stated, certainly in hot weather. One great advantage of the plaster is its low price—a point of particular importance in public institutions. Mr. Rutenik has been kind enough to carefully compute the cost of the five-per-cent. salicylic plaster, as follows: If prepared from the ready-made plasters, one pound costs about 42 cents; if he originally mixes the plasters himself, the cost amounts to only 20 cents a pound. As one ounce will spread over about one square foot, it certainly furnishes a cheap remedy. In private practice my experience was at first not so satisfactory, as on the identical prescriptions different patients received widely different substances, sometimes too hard, sometimes too soft, at other times extremely irritating. I can not account for the difference, unless the preparation of smaller quantities is attended by particular difficulties. For several years Messrs. Eimer & Amend, of Eighteenth Street and Third Avenue, have prepared the plaster in large quantities, and have kept it ready for sale in excellent quality.

The very same reflections that led Professor Pick to the adoption of medicated gelatins in general, and particularly of the salicylated gelatin, induced me to take up the salicylated soap-plaster rejected by him. As the paper in question was published in a periodical of not very wide circulation, and as it seems to me to be of great importance on account of the therapeutic principles proclaimed therein, I feel justified in citing part of it:

“The point in question,” Professor Pick says, “was to find a substitute for the very efficient but very disagreeable and un-

pleasant tar treatment. For this purpose efforts have been made to isolate the active principle of tar and to use it separated from the other components. As soon as the different products of the distillation of tar were obtained, they were applied to take the place of tar; but neither resineon, nor resinein, nor carbolic acid, nor others were able to produce identical effects with tar. Even  $\beta$ -naphthol, which Kaposi but recently believed to possess all the advantages of tar without its disadvantages, can not be considered a successful rival of tar. Upon inquiry to which peculiarities tar and its preparations owe their excellent effects on the diseased skin, particularly in eczema, it became apparent that, first, they were excellent antiseptics; and, secondly, that by the drying of their resinous components they formed a protecting cover, under which the regeneration of the epidermis could go on without molestation.

“A careful study of the development and progress of eczema will show that the very indications for its treatment are the prevention of septic infection and the protection of the diseased surface from mechanical and chemical injuries until a sufficiently strong epidermis has been formed. Considering the single stages in the development of eczema, we find that really the progressive character of the eczematous process, defined by the smaller or greater exudation on the surface, is limited to the conditions of eczema papulatum and vesiculosum, as well as to eczema madidans, which differs only in the removal of the covering of the vesicles; but that suppuration, the so-called stage of eczema impetiginosum, makes its appearance only when local septic influences complicate the moist stage. Wherever such an event does not take place, the vesicular or moist eczema passes immediately into the squamous stage.”

This means that suppuration can and ought to be prevented or stopped, when already developed, by antiseptic measures. The compound salicylic plaster represents, indeed, a very simple form of antiseptic dressing, the place of which it can take under certain circumstances, as I shall show later on. The salicylic acid, being soluble but slowly and in limited quantities, and being not evaporable, retains

the antiseptic qualities of the plaster for a considerable period. The mass of the plaster itself forms a non-irritating cover for the surface of the diseased skin, not only protecting it from injuries, but offering several other advantages. Unlike ointments, it prevents effectively the formation of crusts or scales on any moist surface by preventing the evaporation of the secretions, while on a dry or scaly skin it acts similarly to a rubber bandage or cover; it retains the evaporation of the product of the perspiratio insensibilis, and thus forms a kind of permanent bath. It is superior, however, to the rubber itself on account of the aseptic condition of this bath, while under the former, decomposition of the secretions and resorption of septic fluids can easily take place. I have twice observed the formation of a malignant phlegmon under the use of rubber gloves in cases of eczema where I firmly believe that the septic resorption had been favored, or rather forced, by the rubber cover. The salicylic plaster keeps the dry and infiltrated skin softer and more pliable, thus preventing its cracking and tearing, so often the most painful and annoying feature of some skin diseases; and I know of no other remedy under which rhagades, once formed, lose their soreness and heal in so remarkably short a time, the formation or reformation of the hard inelastic edges being entirely prevented.

The compound salicylic plaster owes a further beneficial quality to the effect of the salicylic acid itself on the removal of the thickened epidermal cover, and the replacement of the same by a new healthy epidermis. While it requires a stronger (at least a 10 per-cent.) salicylated plaster to effect such an elimination of thickened epidermis within a short time and in as conspicuous a manner, the milder 5-per-cent. plaster produces a slower and less distinct transformation.

All these advantages the compound salicylic plaster has

in common with Unna's plaster-mulls and similar preparations. I have mentioned them here to show that the home-made article is inferior to the ready-made, more pretentious articles only in appearance. Some of my private patients who tried both were decidedly in favor of the plaster. As to dispensary patients, I have been gratified to observe that they apply hardly any other external application so faithfully as the plaster, and quite often ask voluntarily for the renewal of the same in preference to other remedies. I do not know whether—the greater number of our patients being of German birth or extraction—this fondness for plasters of any kind is peculiar to our race; I believe, however, that this preference, wherever it exists, is founded on the experience that the plasters do not require frequent renewals, and, being applied mornings and evenings at the utmost, allow the patients to attend to their day's work without interruption.

From what has been stated heretofore, it has become evident already that the compound salicylic plaster finds its widest application in eczema. To avoid any misunderstanding, I want to state distinctly that, while quite a number of cases of eczema heal under external treatment alone, I do not believe that the plaster renders general and internal treatment unnecessary in other instances. Except the most acute stages of eczema, which probably always require the application of lotions or dusting powders, there is hardly a form of that disease in which the compound salicylic plaster is not borne well, and in the greater number of cases it proves beneficial. There are individual cases where for some reason or other the objective and subjective symptoms of inflammation increase under the plaster; generally, however, the acuteness of the process is not an absolute counter-indication. Recent vesicular and pustular eruptions about the hands and feet

heal readily under the plaster as well as moist eczema of some duration; it is advisable to cleanse the moist surface well with water or a solution of boric acid before making the application. The discharge of serous fluid is not diminished at first; only with the gradually progressing formation of new epidermis will the secretion decrease and finally cease. The beneficial effects of the compound salicylic plaster are not limited, however, to the moist stages; under its protection better than under other treatment the newly formed epidermal layer gains in strength and smoothness, while the formation of scales and crusts is prevented. The infiltration and thickening of the more chronic forms of eczema yield very often to the softening influences of the plaster, while in some inveterate cases it will require the stronger application of tar, either pure or as an ointment or in the shape of the alcoholic tincture. As has been mentioned already, rhagades are particularly amenable to the healing influences of the plaster; often one night's application will be sufficient to cure cracks on the fingers, the pain and discomfort from which had for weeks been harassing their unfortunate victims. Naturally the usefulness of the plaster greatly depends on the localization of the eczematous affection. While the face, neck and shoulders, and circumscribed patches on the chest and trunk, allow of its application, while the scrotum and penis can be conveniently protected, the extremities furnish by far the most favorable field for the propitious influences of the plaster. Applied to the hand, and particularly to the fingers, in small straps and covered by a glove or mitten, it allows a moderate use of the member, sometimes sufficient to enable the patients to work; the arms can remain covered all day without change; but more evident still is the advantage of its application to the lower extremities, the most frequent seat of eczema and its consequences among the laboring classes.

The plaster and a muslin bandage often enable the patients, who had before been forced into idleness for weeks or months under other applications, to be around and to attend to their business without much pain or inconvenience; and it is particularly among those affected with eczema, and very often ulcers of the leg, that the plaster has been praised and asked for when a relapse of the old evil brought them back to the dispensary after months or years.

Chronic ulcers of the leg, so closely allied to eczema, indeed present a no less meritorious object for the services of the compound salicylic plaster. If small and shallow, they allow direct application of the same after a thorough cleansing and disinfecting; the deeper and more inveterate ones, however, often require previous reduction of the inflammatory conditions by rest and lotions or stimulation of the indolent surface by caustics, or astringents, or operative procedures. But once reduced to a granulating surface and the edges lowered to the same, I know of no better dressing for these ulcers.

Applied after cleansing and disinfecting by a solution of boric acid or the combined boric and salicylic acids, or by sublimate not over two per mille, and supplemented by one or several layers of absorbent or medicated cotton and a muslin or gauze bandage, we have a complete antiseptic dressing that may remain unchanged for five or seven days or longer, according to the copiousness of secretion. It is often astonishing to notice the rapid spreading of the epidermal edges over the granulating surface, and the fast reduction of the latter. Not less conspicuous is this effect if such a dressing is applied to skin-graftings, made according to Reverdin's method, after they have once taken root on the granulations; under its protection they rapidly increase in circumference. The final result in all such cases will be a much smoother and firmer scar than after dressing

with ointments, adhesive plaster, or the rubber bandage. Naturally the compound salicylic plaster may be applied with the same good results to any granulating wound; whether the same originally resulted from an operation or from a burn, from some severe form of dermatitis, the effects of caustics, etc., particularly when under iodoform, sublimate, or other dressings, no more progress toward healing is made. Syphilitic ulcers, especially those of the more superficial type, resulting from pustular syphilides, often do much better under the salicylic than under the mercurial plaster.

The same good results will be gained in such cases where the loss of substance is limited to the epidermis, or to the horny layers of the same, leaving exposed the rete Malpighii, the condition of the skin after the formation of blebs or pustules and the removal of their cuticle in erythematous and impetiginous eruptions in their different forms, herpes and pemphigus. In a very severe case of pemphigus, now under my observation, the plaster has proved to be a particularly useful and convenient dressing for very extensive raw surfaces on the back and the extremities; it greatly relieved the suffering of the patient and favored speedy reproduction of epidermis.

I have not much experience in regard to the effects of the compound salicylic plaster in psoriasis and lichen, except as to the formation of cracks and rhagades in the former, but I have no doubt it would do good service in both diseases against infiltration of the cutis. In cases of carbuncles and furuncles I have tried it quite frequently; while I have found it useful and convenient as a dressing after the boils have been opened and the core or the diseased tissue has been removed, I have not observed in the earlier stages the same brilliant effects which L. Heitzmann has quite recently attributed to a salicylic plaster of a nearly identical composi-

tion with the plaster of the pharmacopœia of the German Dispensary.

As I expect to report more fully in another paper on my experience in cases of lupus, lupus erythematosus, and others, which closely resemble the tuberculosis verrucosa cutis as described by Riehl and Paltauf, I want to mention but briefly that I have applied the 10-per-cent. compound salicylic plaster with excellent results for the last three years; slowly indeed, but without any pain or inconvenience to the patients, even extensive affections have been gradually reduced to smooth and but little defacing scars.

I hope I have avoided being so enthusiastic in my report on the advantages of the compound salicylated plaster as to impair its credibility with those who, from frequent deceptions and disappointments, have become used to accept such reports with so much greater caution and suspicion the more glowing they are. My own experience, extending over several years, and the confirmation of the same by several of my associates in the German Dispensary, make me feel confident that those who will give the plaster a fair trial, particularly those engaged in dispensary work, will not entirely discard it.

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