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THE POISONOUS ACTION OF TINCTURE OF ARNICA UPON THE SKIN.¹

BY JAMES C. WHITE, M. D.

CASE I.— A gentleman, sixty-five years of age, in descending the stairs to mount his horse for a ride, slipped and scraped the lower part of his back. A handkerchief dipped in tincture of arnica was immediately applied to the bruised skin of the buttocks and worn in contact with the part during the ride, which was not given up on account of the injury. Before his return a good deal of itching was felt in the back, which caused the parts to be rubbed vigorously. On examination after reaching home, the skin was found to be already greatly congested, and the irritation of the parts increased a great deal during the day and night. On the next day I was called to see him. The skin of the back, nearly to the shoulders, was in a state of active hyperæmia, and already covered with innumerable papules. The inflammatory process extended rapidly downwards nearly to the knees, and forwards upon the abdomen and genitals. In a few days these parts presented all the characteristic appearances of acute eczema in its various stages of progression: general hyperæmia, papules, vesicles, excoriated and exuding surfaces, and crusts. The subjective symptoms were intense itching, stinging, and burning in the parts. Scarcely any clothing could be borne in contact with the skin by day, and sleep was for a few nights almost impossible, but the system generally was only slightly disturbed. The course of the affection need not, however, be given in detail, as it did not vary in any important particulars from that of an ordinary acute eczema of high grade and short duration; the process reaching (under treatment) its height within a week, and rapidly disappearing with the usual retrogressive manifestations.

CASE II. — A gentleman, sixty years old, applied to his right arm above the elbow a fomentation of tincture of arnica on two successive days, on account of a so-called rheumatic pain in the limb. The part became generally reddened and swollen in a few days, and ten days after the applications were made he consulted me. The arm from the elbow to the shoulder at that time was considerably swollen, of a vivid redness, and covered over the lower half of this district with a very thick crup-

¹ Read before the Boston Society for Medical Improvement, December 14, 1874.

tion of papules, many of which were already partially converted into vesicles. Great itching and burning were felt in the part, which gradually ceased as the inflammation subsided. The efflorescence under treatment did not progress beyond the vesicular stage, and the skin returned to its normal state in ten or fourteen days subsequently.

CASE III. — A gentleman, aged fifty-two years, was thrown from his carriage and sprained his knee. With the consent of his family physician, he dressed the part with fomentations of tincture of arnica and water. After two days' use of these the skin over the knee became so red that the physician advised him not to apply them again. The redness extended down the leg nearly to the ankle, and upon this surface there was developed in a few days a general eruption of papules. A similar process, but of less severity, ensued a day or two later upon the inner surface of the corresponding parts of the other leg, which were more or less in contact with the fomentations. The efflorescence upon the legs did not pass into the vesicular stage generally, but remained at its height for a week, and then very gradually subsided under treatment. Three days after the use of the fomentations, an inflammation of the skin of the face also began, which increased in severity until I saw him, one week after the injury. His whole face was then very much swollen, of a deep red color, and covered with papules and vesicles towards its periphery, whilst upon the central portions there was a very free exudation of serum from many excoriated points, which in parts had already stiffened into crusts. The vesicles and papules on the forehead were arranged in prominent and isolated clusters of two or three individuals in each. The whole had an artificial look, and strongly resembled in appearance a severe case of ivy-poisoning. The subjective symptoms were mainly intense itching with slight burning; and considerable suffering was thereby occasioned for several days. After two days' treatment the amount of free exudation was largely reduced, and no new efflorescence appeared. The swelling and redness were still considerable on the fourteenth day after the beginning of the inflammation, but were rapidly diminishing, and at the end of the month the skin was again in its natural state.

The nature and cause of the affection of the skin in these cases cannot, I think, be misinterpreted. In all of them we have an acute inflammatory process, confined to the upper dermal layers, and manifesting itself, according to the stage reached, by the following appearances: hyperæmia, papules, vesicles, excoriations, crusts, and scales, in regular sequence. The local sensations were intense itching and some degree of burning in the parts affected. There was no constitutional disturbance. In course, character, and sequence of the lesions in their development and retrogression, in the intensity of the subjective and absence of constitutional symptoms, the affection is unmistakably acute eczema. It

may be that cases occur in which the inflammation extends so deeply and reaches so high a degree, as to warrant the title dermatitis, but I have never seen them.¹

The cause was also plainly manifest. The inflammation followed in all the cases the application of tincture of arnica to the skin as a fomentation. In one of the instances, the first, the epidermis may have been slightly broken; but in the others the skin of the parts was whole and healthy at the time of the applications. The inflammation began to show itself after intervals varying from a few hours to several days, and was confined to the part to which the application was made, or extended from this as a centre. In the last case the disease was developed also upon the other knee and upon the face, but by direct contact, nevertheless, with the exciting cause, for the right knee was in contact with the left during the nights that the fomentations were applied to the latter, and the face was frequently rubbed (a constant habit of the patient) with the hands while applying the fomentation. That the hands were not likewise affected may be accounted for by the greater resistance to absorption offered by the thickened epidermis of the palms.

These three cases will serve, as well as more which might be presented, as typical illustrations of the action of arnica at times upon the skin. The affection, as will be seen, follows a very regular course in the character, distribution, and duration of its lesions, differing widely in some of these respects from the wayward manifestations so peculiar to the action of rhus. Like the latter, arnica must therefore be regarded as an irritant poison when applied to the skin of some persons, but of less intensity and probably of less certainty in its action than rhus. With regard to this latter point, the proportionate frequency of poisoning after its external use, I do not know that we can form any judgment. There can be no doubt that tincture of arnica is very often used in the same way as in the cases above given. It has long enjoyed an exceptionally permanent reputation, and almost miraculous healing powers have been attributed to it. Oesterlen says that "its reputation dates from the times when magicians carried on their hocus-poens with it; from these it passed into the hands of quacks, and finally to physicians." There is scarcely a symptom of disease which, it was at one time thought in Europe, its internal administration could not successfully meet.

The physiological action of both the root and the flowers of arnica is said to be irritant, large doses producing vomiting and diarrhœa, inflammation of the stomach and bowels, headache, and dizziness. Its properties reside in an acrid resin and volatile oil. Our official preparations

¹ Since writing the above I have received the last annual report of Professor Hebra's skin clinic, in which it is stated that an apprentice rubbed his foot with tincture of arnica and produced so severe a dermatitis as to cause destruction of a portion of the tissues.

are a tincture, an alcoholic extract, and a plaster. That tincture of arnica has retained for centuries its great reputation as an application in bruises and sprains, and remains to this day perhaps the most popular remedy for such purposes, it may thank the alcohol associated with it, for this beyond doubt is the only active agent in such applications.

I am informed by one of the largest dealers in drugs in this city that their house sells between two and three thousand pounds of arnica flowers yearly, one half of which he thinks is used in veterinary surgery.

If, then, it is used so extensively, why are not cases of poisoning by it of more common occurrence? I believe that they do occur not infrequently, but that they are not recognized. The appearances which follow its use are no doubt often mistaken for the immediate effect, or the sequelæ, of the injury or other trouble for which it was applied. Even the physician, there can be little doubt, often fails to recognize the artificial nature of the eczema he is called to treat, and to connect it with the prior application of arnica to the skin. The almost universal belief in its harmlessness, too, would prevent in most cases the patient from communicating to the physician the fact of its use before the appearance of the disease. It is not to be wondered at, however, that physicians are so little acquainted with these poisonous properties, when we see how little mention is made of them in medical literature. The works on *materia medica* that I have at hand give it a more or less feeble commendation, but make no allusion to its injurious action upon the skin. Very few of the works on toxicology place arnica among the poisons, and Van Hasselt,¹ who gives the fullest account of its injurious properties when administered internally, says nothing of its action upon the skin. Neither do I recall any reports in medical journals of cases of such affection. In works on dermatology, even, scarcely any mention is made of the subject. In a long list of substances enumerated as capable of producing eczema, in his chapter on this disease, Hebra includes arnica without special mention; but in his article on erythema nodosum he says:² "Some medical men, however, suppose that the tincture of arnica is a perfectly harmless remedy in erythema nodosum, and in similar affections. But I would give a friendly warning to those who advocate its use; unless, indeed, they propose to employ it homœopathically and in infinitesimal doses. In the proportion of a drop of the tincture to a pail of water, this substance may certainly be applied without any risk of doing harm. But I have in practice had abundant occasion to observe that the tincture of arnica, even when much diluted, acts most injuriously upon the skin of some persons. I have frequently seen eczema or dermatitis excited by the assiduous application of lotions containing this drug, in the treatment of slight bruises or sprains." Fox,³

¹ *Handbuch der Giftelehre.*

² *Sydenham Translation*, vol. i. page 291.

³ *Skin Diseases*, London, 1873.

in his brief remarks on Medicinal Rashes, says: "Arnica may produce erythema and swelling of the part to which it is applied, or it may excite a real eczema."

It is to warn physicians who may be ignorant of these properties belonging to it, and that through them the public may be more generally informed concerning the dangerous character of one of the most popular and useless among domestic external remedies, that I have thus brought the subject before the profession.

GUM-CUTTING.

BY CHARLES E. BUCKINGHAM, M. D.,

Professor of Obstetrics in Harvard University.

SOME months ago among your "Notes and Queries" was a question about cutting gums. A week or two later, a correspondent (E. T. W.) gave a very decided answer as to the propriety and usefulness of the operation. For some time before the question was asked in the JOURNAL, I had been making the same inquiry of physicians whom I met, and I was rather surprised to find among the younger practitioners so many who had never used the gum lancet, and who could not imagine the case in which it would be necessary.

The let-alone system of treatment is good; in very many cases it is the best; but it is not always the best. The relief afforded by a free incision through the gum in some instances in which there was acute pain has, under my observation, been more marked than that afforded by any other operation that I ever saw. The tooth, it is true, in the very great majority of cases finds its way through without difficulty to the child. The first indication to the mother whose child has always been nursed, and never fed, is often the feeling of an incisor against her nipple. In some cases where a proper plan of feeding has been followed, there is as little indication of trouble during dentition. Occasionally when the child is nursed, more frequently when it is fed, and often when it is improperly fed, the little one apparently suffers pain in the mouth, in the head, and in the bowels, whenever a new tooth is about to make its appearance. In another class of badly-fed patients there is always loss of appetite at this time, with sleepless nights, nausea, and vomiting. In others, cough comes on which only exists then, and for which auscultation gives no explanation; and the little patient's sufferings are augmented by "hive syrup," squills, and other nauseants which give no relief, and by "Mrs. Winslow's soothing syrup," and other narcotic drugs, which stupefy but do not cure. There is still an-