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PART I.
ORIGINAL COMMUNICATIONS.

ART. I.—*On the Application of Gutta Percha in the Treatment of Diseases of the Skin.* By ROBERT J. GRAVES, M.D., F.R.S.

WHEN a wound or injury inflicted on any portion of the surface has exposed the structures naturally covered by the skin, immediate irritation is the consequence, and this never entirely ceases until nature has been able to provide some substitute for the abraded or otherwise destroyed integument. The manner in which the denuded surface is covered with a temporary protection, sufficient to guard it against the contact of the air and other external injurious agents, varies according to the circumstances of the case: in many instances blood coagulated on the wound adheres firmly and remains in contact with every point, until the reparative efforts have healed the parts and covered them again with a new skin. When such a process takes place favourably, this most simple of all dressings

effects a cure without any external discharge or inflammation, and enables the parts to be re-formed, or, as the late Professor Macartney termed it, remodelled *by the first intention*.

Of late years surgeons have derived much advantage from the use of different imitations of this natural process, and have employed at first solutions of collodion, and finally gutta percha dissolved in chloroform, for this purpose. Reflecting upon the great superiority of this method over the others formerly used, it struck me forcibly that it was capable of a much more general extension, and that the chloroform solution of gutta percha might be usefully employed in the topical treatment of cutaneous affections. The more I thought on this subject, the more sanguine I became that this new agent would form a useful addition to the list of remedies employed in combating a class of diseases confessedly so obstinate and so difficult of cure. The result of repeated trials, I am happy to announce, has not disappointed my anticipations, and consequently I now feel myself called on to lay before the profession a statement of those cases in which this application has either effected a cure, or mainly contributed to the successful treatment of the complaint.

When the saturated solution of gutta percha in chloroform is spread by means of a camel's-hair pencil over a portion of the skin, the solvent fluid rapidly evaporates, leaving a delicate and extremely thin pellicle of gutta percha firmly adhering to the part. The peculiar toughness of gutta percha prevents this pellicle from being brittle, and therefore it is much less liable than collodion to crack and fall off in small scales. On the forehead or face, where it is not affected by friction of the clothes, it remains firmly attached for five or six days, or even longer, but on other portions of the surface it is often rubbed off much sooner; over dry eruptions of the skin it lasts longer than over those which are moist, and over smooth and firm spots, of course, longer than over those covered with rough morbid scales, or loosely adhering crusts. Before the application of

this solution, therefore, the practitioner will do well to render the portions of the cutaneous disease to which he intends to apply it as free as possible from crusts or scales, by means of poultices, alkaline lotions, &c. When this precaution is taken, he will find that the artificial cuticle which he has applied with his brush will in certain cases act most sensibly on the subjacent disease, diminishing inflammation and its consequences, and powerfully contributing to the restoration of the healthy structure of the skin.

Whether it acts by the equable pressure which the film of gutta percha, suddenly coagulated from the fluid state, must exert on the surface to which it becomes so firmly adherent, or whether its efficacy be rather owing to other causes, it is beside my object in writing this notice to discuss. I may, however, remark, that the curative properties of such an artificial covering are not confined to the skin, for I am informed by Mr. Moore, that in the "*Gazette Médicale de Paris*" (April 10, 1852) is an account of the successful application, by M. Dechange, of collodion in orchitis, and the *modus operandi* is said by him to consist in its compressing the tissues, and protecting the parts from the action of the air which he thinks is a powerful element of phlegmasia. Without giving an unqualified assent to this explanation, I can have no hesitation in announcing my firm conviction, that in diseases of the skin this solution furnishes us with a new and active remedy, exerting effects quite different from those produced by any topical application hitherto in use.

The transparency of this artificial membrane enables us to watch the progress of the subjacent diseased skin, and its colourless nature prevents it from disfiguring the face when the eruption occupies that part. Its perfect cleanliness, too, is no small advantage, and affords a very agreeable contrast when compared with the usual ointments, &c.

My observations confirm what reasoning on this subject would lead us to expect, that this application is more suited

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for dry, scaly, tubercular, and chronic diseases of the skin, than for acute affections attended with much oozing of fluid and comparatively active inflammation.

Still, its good effects are by no means limited to chronic diseases of the skin or to those of a scaly, dry nature, for, as will hereafter appear, I have seen it decidedly useful in the spreading form of impetigo. My experience of this remedy makes me very anxious to witness its application in the first stages of erysipelas, as analogy leads me to hope for good results in such cases.

Of course the patient must aid the efforts of the physician, and must as far as possible abstain from everything which tends to rub off or injure the artificial cuticle, for its virtue ceases when its continuity is broken and the external air finds admission to any part of the diseased surface.

Early in the month of November, 1851, I was called to visit Mrs. C., from ———. She was about fifty years old, full and plethoric; the mother of a large family, and, until the disease of which she then complained commenced, generally healthy. About two years before, she observed small spots of impetigo on her limbs and body, which succeeded each other, some healing while fresh ones appeared. During summer she was nearly free from them, but last autumn they returned with greater virulence than ever, and have since increased both in size and numbers, some being larger than the hand, and attended with constant oozing of fluid, which imperfectly coagulates, forming loose and thin crusts. The itching at night is intolerable, and nearly deprives her altogether of sleep. I employed the usual general and topical treatment for a fortnight without alleviation of her sufferings, when luckily I thought of trying the saturated solution of gutta percha in chloroform, and had it carefully applied by Mr. Nicholls of Dawson-street, at first by way of trial, to one of the smaller spots, and on the following days to each of the larger patches of eruption in succession. The relief obtained was such that

it appeared almost incredible both to the patient and her family. Her cure was accomplished in less than three weeks; for, dreading the sudden stopping of so great a discharge and so much cutaneous irritation, I proceeded cautiously, and towards the end of the cure, when she returned home, I directed an issue to be inserted in her arm, as a measure of precaution. She has continued well up to the present time (11th April, 1852).

In this patient we were at first obliged to re-apply the gutta percha every second day, as it was rapidly detached and broken up into large flakes by the discharge from the subjacent surface. Its healing influence, however, speedily diminished the diseased secretion, and then the artificial cuticle remained longer adherent, and it was not necessary so often to use the scissors for the purpose of cutting off the loose portions of gutta percha membrane previously to applying a fresh layer. I ought to have remarked that the camel's-hair brush should be plunged, the moment it has been used, into hot water, to prevent it from being consolidated by the coagulated gutta percha.

This case caused a great sensation among my patient's friends and relatives, and many were the inquiries made relative to my method of cure. I must confess that my own astonishment at the result was not less than theirs.

Since that time I have repeatedly used this application in *acne of the face*, in which disease each of the pimples should be covered with the solution, and the patient enjoined not to rub off the pellicle by washing, &c.

In some this treatment alone causes a material and rapid diminution of this tormenting eruption, and by perseverance in this plan, there is every appearance in two of my patients that the tendency to throw out the pimples is gradually ceasing.

Finally, in several cases of psoriasis I have applied this solution with great benefit. In this disease much care must be taken to prevent the application being rubbed off by the

clothes, and no woollen stockings or rough garment of any sort should be allowed next the skin. I had the satisfaction of curing in a fortnight a chronic psoriasis of the back of the hands and arms in a lady who had been under homœopathic treatment for six months without deriving the least advantage from the infinitesimal doses prescribed by the practitioner.

Since the preceding observations were written, I have received the following note from Mr. Moore, a gentleman distinguished alike for his practical, scientific, and literary attainments. This additional information concerning the effects produced by the application of collodion strongly verifies my observations respecting the local antiphlogistic action of a gutta percha pellicle:

“ M. La Tour has for some time advocated the doctrine that external inflammation may be speedily subdued by withdrawing the affected surface from the influence of the air. This he effects simply by a layer of collodion, which, he says, rapidly assuages the inflammation of gout and articular rheumatism. At the meeting of the Academy of Medicine, on the 8th of February, M. La Tour related a case of peritonitis in which the symptoms were dissipated within twenty-four hours, by the application of a layer of collodion to the whole surface of the abdomen”^a.

POSTSCRIPT, *June 7, 1852.*

My anticipation respecting the utility of an artificial cuticle applied over the parts affected by commencing erysipelas, has, I find, been verified, as appears from the following paragraph taken from Dr. Neligan’s able Treatise on Diseases of the Skin^b.

“ Acting as an impermeable varnish, and probably producing some effect, also, by the compression it causes, collodion has been successfully employed by Spengler and Rapp, as a local application in erysipelas. The parts are thickly coated with it by means of a camel’s hair pencil, and it is re-

^a Bulletin de l’Académie Nationale, 1852.

^b Page 48.

newed as often as may be required in consequence of its cracking and peeling off when dry."

When my friend, Dr. Stokes, heard of my success in other cases, he resolved to try the gutta percha solution in small-pox, and it gives me great pleasure to say, the result of two trials is most encouraging, and leads us to hope that at length a means of preventing the formation of disfiguring scars on the face in that disease has been discovered. Dr. Stokes has kindly allowed me to publish the two following cases treated by him at the Meath Hospital, and noted by his diligent and zealous clinical clerk, Mr. Robert P. White.

Anne Kenny, aged 18, was admitted into the Meath Hospital, May 11th, 1852. She was never vaccinated; her illness began on the 6th of May, by rigors, headach, and pain in her loins, but without any vomiting. On the 8th, the eruption appeared, and on coming into hospital the eruption was well formed and confluent on her face; the fever of a typhoid character, with considerable prostration of strength; she was much annoyed with pain and itching of her face. She was ordered wine and carbonate of ammonia mixture, and her face to be painted with a solution of gutta percha in chloroform

The solution was applied with a soft brush; the entire face being well coated with it, and after an interval of a few minutes (just sufficient to allow the previous coating to dry), a second coat of the solution was applied.

This application, she said, gave her great relief, and allayed the pain and itching. On the 13th she was much better, and the solution was again applied in the same manner.

May 22nd. She has progressed most favourably; all the crusts have come off the face in large pieces, and there is hardly any trace of the disease remaining except a slight discoloration. During the whole time of her illness, from the application of the solution, her face continued moist, and there was no ulceration in any place.

Catherine Sherlock, aged 12, was admitted May 13th

(seventh day of eruption). Her illness commenced by head-ach, pain in her loins, and rigors, but without sickness of the stomach; she was never vaccinated. On admission she had a good deal of fever of a typhoid type, the eruption had come out well, was confluent, and had completely covered her face; she complained very much of pain and itching of her face and head, which kept her from sleeping. The solution of gutta percha was applied as in the former case, and apparently gave her much relief, for she was easier afterwards, and ceased rubbing and tearing her face in the manner in which she had been doing before. Wine was also freely used, as in Kenny's case.

May 22nd. All trace of the disease has nearly gone, the crusts coming off in large pieces, and the remaining marks of the disease being very trifling when compared with the violence of the attack.

The same effect of the solution in keeping the face moist was also observed in this case as in the preceding.

In communicating these cases, Dr. Stokes observed, as worthy of notice, and probably connected with the beneficial result produced, that the most remarkable effect of the gutta percha was to keep the face constantly moist, and to prevent the formation of hard, irritating crusts. He also mentioned to me a singular illustration of the effects of total exclusion of air from the cutaneous surface, as a preventive of the eruption in small-pox. It was that of a man who, while in the Meath Hospital for a scrofulous enlargement of the knee-joint, was attacked with this disease; the knee had been previously tightly strapped with adhesive plaster, and on the disappearance of the eruption, it was seen, on removing the strapping, that not a single pustule had been developed on the parts which were thus covered.

It is scarcely necessary to add that, however useful solution of gutta percha in chloroform, or any other topical applications, may prove, it would be, nevertheless, absurd to ex-

pect from them a radical cure of those chronic cutaneous affections which arise from constitutional causes, whether strumous, syphilitic, or canceroid; as well might we look for the cure of scarlet fever, small-pox, or measles, by means of remedies applied to the skin solely with the view of relieving the eruption. Still, in every chronic disease it is manifestly desirable to diminish, by topical means, the annoyance or disfigurement arising from the cutaneous affection. This relief cannot but be serviceable if it did nothing else than afford time for the due and gradual employment of a well-directed constitutional treatment. I saw this lately well exemplified in the case of a young lady who had been under the care of an eminent London surgeon for many months, and from whose medicines she had derived no relief. She was the subject of a most disfiguring eruption, agreeing in character with the lupus serpiginosus of late writers; it occupied sparsely the nostrils and cheeks, but on the forehead it formed an extensive group of sores. Some spots it left hypertrophied after healing, but in general its course was marked by white depressed seams. It had been the seat of constant irritation, which the patient could not avoid increasing by scratching during sleep, and consequently the surface of the face usually exhibited a number of bloody points, adding to its disagreeable appearance. The entire eruption healed after a six weeks' application of the gutta percha, and she is now (what she had not been for two years) free from any cutaneous irritation. Time alone can determine whether relief will be permanent, but there can be no doubt of the great value of the advantage already gained.

I shall conclude with observing that, in psoriasis and other chronic cutaneous complaints unattended with any constitutional derangement, it is of the greatest consequence to check the growth of each new spot. This the gutta percha does most effectually in psoriasis, and when applied daily to any recent points of irritation, it smothers, as it were, each nascent centre of future blotches.