CARBUNCLE AND ITS TREATMENT BY MAGNESIUM SULPHATE.

BY

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CARBUNCLE may be defined as a form of localized infective gangrene. As a rule it is found in parts of the body whose blood supply is poor which have been exposed to slight trauma. It has for this reason its most common site on the extensor rather than the flexor aspect of the body. Its usual location is the nape of the neck. In this situation the blood supply is limited in amount. There is the possibility of exposure to irritation from a roughened linen collar, and organisms of a low type of infection find entrance into the ill nourished subcutaneous tissues through a small abrasion of the skin.

It is specially frequent in elderly people suffering from some blood dyscrasia such as diabetes; in them the presence of sugar in the blood impoverishes its nutritive properties. Any slight breach of continuity of the skin in such subjects favours the entrance of organisms and produces conditions favourable to their growth. In these circumstances gangrene of the tissues occurs with all the typical signs and symptoms of an infective or moist gangrene.

The course is somewhat as follows: The patient has for some days noticed an itching and stinging sensation in the back of the neck, followed by stiffness and swelling of the skin in that region. The part soon becomes raised and painful, and keeps the patient awake at night. The temperature may not be raised more than one or two degrees, but there is a general feeling of restlessness and malaise. A rigor sometimes occurs. Very soon (in the course of twenty-four or forty-eight hours) a white spot of pus appears in the centre of the raised and reddened area. Infection of the surrounding skin results and other centres of suppuration form. Very little pus escapes, but a white or dull-grey gangrenous area of subcutaneous cellular tissue is seen in each of the openings. Constitutional symptoms become more marked as more and more tissue becomes involved and the natural barriers of defence are broken down; pain is very constant and severe; sleep is obtained only in snatches, and loss of appetite and rigors may ensue.

Spread of the disease is only limited by the powers of the surrounding tissues to set up an obstructing area of defence round the infected area. When this fortunately occurs a large slough, consisting of skin and all the deep tissues down to the bone, is thrown off, and a large sunken area, often as large as a soup plate, with purple, undermined, oedematous edges, is left to be gradually filled in by granulation tissue and covered later by cicatrization or by skin grafting. When such a condition is seen diabetes should always be suspected and repeated examinations made of the urine and the blood.

TREATMENT.

Many forms of treatment have been suggested, such as crucial incisions into the affected area; excision of the whole mass by a circular incision round it and down to the muscle; injections of pure carbolic acid into various parts of the broken-down mass; and excision and incision by the actual cautery. The fact that so many remedies are recommended and practised points to the difficulties of treatment and their ineffectiveness.

During the last six years I have treated twenty-eight cases of carbuncle by a very simple method with no deaths. Most of the cases occurred at the nape of the neck or on the back, but whatever the situation the treatment is the same. This consists in applying to the whole of the inflamed area a paste of magnesium sulphate.

Method of Preparing Magnesium Sulphate Paste.

With 1.5 lb. of dried magnesium sulphate are mixed 11 oz. of glycerin acid carbolic or pure glycerin. The dried magnesium sulphate is in the form of a fine white powder which contains 12 per cent. less water than the ordinary commercial Epsom salts. The glycerin is put in a hot mortar and the sulphate added, slowly

stirring and mixing with a warm pestle all the time. The result is a thick white cream, so hygroscopic that if exposed to the air it rapidly absorbs moisture and becomes fluid. It must therefore be preserved in a covered jar.

The carbolic acid was first added because of its analgesic properties, as it was thought that without it the application would be painful. We found this precaution to be unnecessary; the only discomfort of which the patients complain when carbolic is not present is that the paste feels cold for a short time after its application. In the case of carbuncle the soothing effect of the paste is very marked.

Method of Application.

The paste is spread thickly on a piece of sterile white lint sufficiently large to cover the whole of the inflamed area. A piece of jaconet is put over the lint to cover it entirely, and cotton-wool in abundance over and round the part. A profuse discharge of serum takes place, and the dressing is left unchanged for twelve or twenty-four hours and then renewed. Within a few days the central slough separates and a raw granulating surface is left. The relief to the patient after one or two applications is very great. Pain is abated, constitutional disturbances disappear, and sleep comes naturally.

As soon as the slough has separated the crateriform ulcer is dressed with the paste until all signs of sphacelating cellular tissue have disappeared and a healthy granulating surface is seen. The cavity is then packed daily and the undermined edges supported with strips of sterile lint about 1½ in. wide, wrung loosely out of a saturated solution of magnesium sulphate made by dissolving 40 oz. in 30 oz. of boiling water and 10 oz. of glycerin and sterilizing in an autoclave. The whole area is then covered with a double layer of lint saturated with the solution, over which a piece of jaconet and then cotton-wool is placed, and fixed loosely by a bandage.

This dressing is renewed daily until the healthy firm granulation tissue is level with the surrounding skin margins. It can then be covered with Thiersch skin grafts or allowed to epithelialize from the edges if the surface is not too extensive.

The following case is typical of the majority of those cases I have treated.

A married woman, aged 54, was admitted into the Sunderland Royal Infirmary on August 3rd, 1919, complaining of a painful swelling between her shoulders. She had had a stroke eight months earlier which paralysed the left side of her body. About three days before admission she felt a painful pricking sensation between her shoulders which made her very uncomfortable and kept her from sleeping. As it continued to get worse she consulted Dr. Hogg of Easington, who sent her into the infirmary under my care. When admitted she looked ill and haggard; between her shoulders was a large inflamed area about 6 by 6 in. in the middle line of the back. In its centre were several small necrotic patches with grey bases, but very little pus exuded from them. The temperature was 101.6°, and the pulse 88. The urine contained neither sugar nor albumin.

Magnesium sulphate paste was applied and the back ordered to be dressed twice daily.

On August 6th the temperature was 98.4°, and the pulse 72. The patient was much improved, was sleeping well, and taking liquid nourishment freely. The zone of inflammation was less and the central slough was beginning to separate. On August 20th the wound was clean and healthy and was being dressed with magnesium sulphate solution once daily.

On September 3rd the wound was closed except for a small area about 1½ in. in diameter, and the patient was allowed up. She was discharged with the wound healed on September 15th.

The advantages of this method of treatment are:

1. No surgical interference is required.
2. Its application is simple and dressing infrequent—once or at most twice a day.
3. The combined osmotic action and its inhibitory effect on the growth and development of the staphylococcus cleanse the wound and assist in the separation of all sloughing and unhealthy tissue.
4. The granulations formed are firm and solid and lend themselves admirably as a base for a superimposed skin graft.