AN ESSENTIAL PRINCIPLE IN THE TREATMENT OF GAS GANGRENE.

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I wish to urge the wide recognition and application of a principle which I believe is essential for the successful prevention and eradication of gas gangrene in war wounds met with in France. My reason for doing so is that I have not seen it definitely mentioned in any writings in the public press. I have recommended it for the past two and a half years, and it becomes daily more evident that the principle is correct.

The causative bacilli of gas gangrene will not develop in tissues which are provided with a vigorous circulation of healthy blood. They thrive best when the circulation is entirely stopped—for example, in a person dead of gas gangrene or in a limb of a living person where the main vessels have been severed. Long application of a tourniquet often allows the infection to obtain a firm hold. The absence of circulation in the wounded part, whether from a general cause, such as shock, or from a local cause, such as tension from effused material or pressure of foreign bodies, favours its development. As Major-General Cuthbert Wallace and others have pointed out, these bacilli grow most luxuriantly in devitalized muscle. The injured muscle or group of muscles is deprived, in part or in whole, of its normal blood supply according to whether the missile severs the main nutrient vessels or merely causes isolation of lacerated portions. Pressure in the neighbouring parts, whether caused by effused material in the wound, by inflammatory reaction, or by external constriction, interferes still further with the circulation, and forms a most important arc of the ever-widening vicious circle of spreading inflammation.

From purely clinical observations, then, the principle has been evolved, and it is this: Whether one undertakes preventive, pre-inflammatory operation, or curative operation after the gangrene has developed, success and safety are assured only when the wounded parts are excised until definite bleeding of the cut surface is seen. The bleeding must be definite; it need not be free. In pre-inflammatory operations the use of a tourniquet during operation may be permissible; it is not advisable unless the patient is exsanguinate. In cases where gangrene is already well marked it should not be used. Care must be taken that in excising parts at the later stages of the operation the blood supply of tissues left behind at an earlier part of the operation is not interfered with; therefore, as a rule, proximal parts should be excised before distal parts. It is usually easy to decide, when this principle is kept in view, how much should be excised—whether only part of a muscle, the whole muscle, a group of muscles, or the limb.

Surgeons who base their work on this principle have more success, and have to perform fewer secondary operations than those who do not follow it.

On the successful application of the principle I have enunciated depends the justification of the practice of excision and primary suture of wounds—a procedure which I carried out with gratifying results as far back as November, 1914.¹

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, August 28th, 1915.

A CASE OF PYAEMIA TREATED WITH INTRAVENOUS INJECTIONS OF EUSOL.

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In my opinion there can be no doubt that the intravenous use of eusol saved the life of the patient whose case is here recorded. He was exceedingly ill on the Wednesday when he was admitted, and I did not expect that he would see the end of that week. It was very noticeable how he improved after each injection of eusol, and I have pleasure in adding my testimony as to the value of that remedy.

William C., aged 20, a gunner in the R.G.A., was admitted to the R.N. hospital ship *Plassy* on October 18th, 1916. Ten days earlier he had had tonsillitis which soon cleared up. Four

days before admission he had become feverish again, and marked deafness was present in both ears.

His temperature was 103°, and he complained of pain in the left sterno-clavicular, left shoulder, left wrist, and right ankle joints; all of these were swollen and tender. He was very deaf. There was no pain or tenderness about the ears or mastoid region. The tonsils were slightly congested and enlarged, but he had no pain on swallowing. No other physical signs were made out.

The day after admission the joints were still very painful, and the patient was seriously ill. He was put on tincture of strophanthus and brandy, alternating every two hours. As he seemed to be suffering from a pyaemia he was given that evening an intravenous injection of eusol as recommended by Lorrain Smith¹ (80 c.cm.). The following morning his hearing had slightly improved, and he said that the pain in his joints was easier. Towards evening the pain got worse again, and I gave him another intravenous injection of 100 c.cm. of eusol. He had a fairly comfortable night, his temperature falling steadily for six hours after the injection to 100°, which was the lowest reached since admission. He complained, however, of pain over the right foot.

For the next three days he improved, requiring less assistance, and taking more notice of what was going on in the ward. As the right foot had become more painful and oedematous, an incision was made and the pus present evacuated, the wound being dressed with eusol. Staphylococci and a few streptococci were cultivated from the pus.

The temperature continued high, frequently being 103°, and on the evening of October 24th I gave him another 100 c.cm. of eusol intravenously. Half an hour later he had a rigor; the temperature rose to 105.8° and the pulse to 156. In two hours the temperature had fallen to 98.2° and the patient was feeling comfortable. The following morning there was a marked improvement. He could hear almost ordinary conversational tones from the other end of the bed. The temperature was 97°. The joints were no longer swollen and there was practically no pain or tenderness.

For the next few days he improved and was able to move himself without pain, but he was still very ill. The temperature had been remittent, but now became intermittent. In spite of the tendency of the temperature to fall, dullness began to be noticed on the left side of the chest, and its area increased. On October 30th his chest was aspirated and 105 fluid ounces of thin pea-soup-like fluid drawn off; this contained both staphylococci and streptococci. He was so ill, however, that I did not consider it advisable that he should be operated on to establish free drainage.

From this time he improved more rapidly, but a few days later his temperature began to rise again and the fluid showed signs of reaccumulating. Accordingly, on November 8th he was again aspirated and 64 fluid ounces of thick creamy pus withdrawn. It contained numerous short chains of streptococci. In view of the more definitely purulent nature of the fluid, it was decided to open the pleural cavity that evening; 25 fluid ounces of pus containing large flakes of lymph, came away. The operation, under local anaesthesia, was well borne. Though there was a copious discharge each time the wound was dressed, the patient's general condition continued to improve, his temperature becoming normal.

On November 10th he was discharged to a shore hospital, where convalescence was soon established, and his further progress was uneventful.

It was my opinion that the original infection came from the tonsils, and I advised him to have them removed. This was done later, and in July he wrote to me saying that his condition was quite satisfactory. Since then he has been passed as fit for general service.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, November 13th, 1915.

TREATMENT OF PSORIASIS IN THE ARMY.

BY

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The importance of psoriasis as a cause of disability among troops is not great, but men with an extensive eruption require treatment. At the time of writing, out of 1,100 patients admitted to hospital for skin disease, 56 (that is, about 5 per cent.) are being treated for this complaint. In order to return these cases to duty as quickly as possible I have recently adopted the following method, which has afforded more rapid and uniform results than any other that I have yet tried.

1. *Treatment of a Generalized Eruption on the Body and Limbs.*

The patient attends for treatment twice daily. Every morning he is given a bath, to which on the first two days cresol (1 oz. to an ordinary sized bath) and an alkali