

Every one is agreed about stimulation, and every one uses antiseptics for the mouth, etc. But what should be done locally? My object in taxing the patience of the Society thus far is to bring forward all the proofs which a study of the literature of the subject could muster, to show that noma is due to a specific organism, and that, although we do not know what that organism certainly is, or whether it may not even possibly be a peaceful resident in most of our buccal cavities under ordinary conditions, almost every case of cure is the result of vigorous surgical treatment.

From the earliest times caustic acids—fuming nitric, hydrochloric, sulphuric—were used, dry caustics of all sorts, and latterly, and with great success, the actual cautery. Christovitch of Salonica in 1889 recounts a case in which he resected the superior maxillary bone for noma with a favourable result.

As a set-off to this, Dr Carmichael showed in 1889, before this Society, the whole superior maxillary bone of a case in which, after the disease spread thus far, it was arrested without treatment, and ultimately resulted in recovery.

Both the cases here recorded (my own and Dr Elder's) died,—one untreated, and one vigorously treated, though unfortunately too late; but the records of brighter cases exist, and I would conclude by urging much earlier and much more extensive surgical interference.

I am indebted to Mr D. A. Welsh for his very carefully taken notes of the case recorded above.

### CASE OF CANCRUM ORIS.

By GEORGE ELDER, M.B., C.M., Resident Physician, Royal Infirmary, Edinburgh.

CATHERINE T., aged 4½ years, was first seen on the morning of the 8th December 1892. The history of the case was as follows:—Exactly a fortnight before, a measles rash had appeared on the patient, and she was said to have been very ill during the attack. A few days before she was seen her left cheek had begun to swell up, and on the morning of the 6th December this swelling had become very red. A small black patch was first observed on the morning of the 7th, and this patch had extended very rapidly.

Patient lived in very dirty surroundings, and was evidently very poorly nourished. Immediately on entering the house one was struck with the intense fœtid odour present, and this was worse when one approached the patient.

The child was obviously very ill indeed; pale, lying motionless, except for a slight movement of the hand towards the cheek. She occasionally uttered a low whining sound as if in pain. The pulse was rapid (130), small, and of very low tension. Extremities rather cold and clammy.

In the cheek there was an opening, somewhat oval in shape, with ragged edges, extending from the level of the upper lip to the lower border of the lower jaw. This was separated from the mouth by about  $\frac{3}{4}$  inch of tissue. The lower jaw was exposed for about an inch of its length. Bounding the opening was a dark slough, which merged into a well-marked, raised, greyish-white ring of  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch in breadth. This, again, was sharply defined from a reddened œdematous area, which gradually faded into the normal tissues beyond.

The case was evidently too far advanced for much hope of recovery, but it seemed best that she should be operated on at once, and accordingly she was sent to Leith Hospital, where Dr Brown, the house-surgeon, removed the whole of the slough and greyish-white ring beyond, and applied fuming nitric acid to the edges. The wound was dressed with strips of boracic lint and iodoform, and stimulants were freely given.

The pulse did not improve, however, and became weaker and more rapid, and patient died twenty-four hours after the operation. There had been no extension of the necrotic process during this time, although before the operation the process had been so rapid that from the first appearance of the slough externally to its acquiring the large dimensions already described, there had only elapsed about twenty-six or twenty-eight hours.

Unfortunately a post-mortem examination was not obtained, but within twenty minutes of death a wedge-shaped piece of tissue was removed from the edge of the wound. Within about half an hour of its removal from the body this was incised with a sterilized knife, and inoculations in gelatin and agar-agar were made from the surfaces thus produced. Those in gelatin were kept at the ordinary temperature of the room, those in agar-agar in the incubator, but from neither of these was there any result. No attempt, however, was made to cultivate anærobically.

The piece of tissue itself was hardened in corrosive sublimate, embedded in paraffin, and sections made. These when stained by Gram's method, showed very great leucocytic infiltration around the vessels and spreading outwards from them between the tissues. Besides the leucocytic infiltration there were also numerous bacilli around the vessels and extending outwards into the tissues, and decreasing in numbers with the distance from the vessels. They were very well seen passing between the fat-cells of the tissues of the cheek. These bacilli were found to a distance of about half an inch from edge of opening as made by the operation.

The bacilli were long and comparatively thin, length 3.5 to 5  $\mu$ , breadth about .8  $\mu$ , and tapering at either end to a somewhat sharp point. They were very commonly arranged in pairs end to end.

They could be stained pretty well by Gram's method, but were very readily decolorized by clove oil. They also stained, but less satisfactorily, by Kühne's method.



Except at the very free edge, where there were numerous large putrefactive bacilli and cocci, which did not extend any distance into the tissues, these were the only organisms found.

These will be seen to differ from those described by Dr Coats in a case of cancrum oris, which were thicker bacilli, not tapering at the ends, and tending to form long chains. He was able to cultivate them anærobically, and thinks that they may be identical with the bacillus of malignant œdema.

It would appear that no bacilli like those found in the present case have before been described in cancrum oris.

*Mr A. G. Miller* said he would like to mention some of his surgical experiences of noma. His first case he treated in the usual way by excising all the apparently diseased tissue and afterwards applying fuming nitric acid freely. The child, however, died. Last summer he had seen a girl of apparently 12 or 13 years of age operated upon for noma in one of the hospitals in London. First of all the whole of the diseased area and a considerable portion of healthy tissue round it were completely removed, leaving an enormous gap in the cheek, opening into the mouth. This demonstrated that the diseased tissue was more extensive internally than externally. Then the operator removed with scissors everything that seemed in the least diseased. A considerable portion of the lower jaw was laid bare. A Volkmann's spoon was then very thoroughly applied all round. About three inches of the lower jaw were next removed, and also a portion of the upper jaw. After that pure carbolic acid was applied to all the raw surface. Then the whitened necrotic tissue was thoroughly scraped again, and finally a strong solution of corrosive sublimate was applied, and an antiseptic dressing put on. The operator was not one of the younger surgeons, but Sir Joseph Lister. On making inquiry a week later he ascertained that the child was recovering. The parts were cicatrizing, and a plastic operation was soon to be done. He thought that the explanation of the success of this operation was to be found in what Dr Fleming had referred to, namely, that the organism which caused the disease was beyond the sloughing portion. It was also important to remember that the disease was usually more extensive internally than externally.

*Dr James Carmichael* said the case of his which Dr Fleming had referred to was practically, so far as the primary disease was concerned, cured by Nature alone by the time it came under his care. The necrotic condition had stopped. In addition to the destruction of the soft parts the upper and lower maxillary bones were completely necrosed. The patient when admitted to the hospital was dying of pure asthenia, but under feeding by means of the tube soon began to improve. The upper maxillary bone had to be removed as well as a portion of the lower. The wound

healed up perfectly in every way. The patient was seven years old. The disease occurred after typhoid.

*Dr Fleming*, in replying, said that the bacilli in Dr Coats' specimen, kindly lent to him, were longer and their ends squarer than those in Dr Elder's specimen. Stanley, in his travels in Africa, had found that the dwarfs used for their arrow poison a peculiar material made mainly of soil, and those struck by it died either of tetanus or gangrenous spreading patches closely resembling if not identical with noma.

#### 4. NOTE ON THE QUENCHING OF THIRST AFTER ABDOMINAL OPERATIONS.

By CHARLES W. CATHCART, M.B., F.R.C.S. Eng. & Edin., Assistant Surgeon, Edinburgh Royal Infirmary; Lecturer on Surgery, Edinburgh School of Medicine.

THE thirst from which patients suffer after abdominal operations is so well known that I need not enlarge upon it. The cause of it, too, is sufficiently obvious. In such cases, fluids by the mouth are for a variable number of days contra-indicated, in order to obviate or minimize chloroform sickness, lest the consequent retching might strain the recent abdominal wound, and also in many cases to keep down peristalsis of the intestines.

The nutrition of the patient during this period is maintained partly by small supplies from without, given as nutrient suppositories or enemata, and partly by drafts upon the reserves of fat stored up in the patient's body. Water, however, as is well known, is not stored up like fat, and the extra juiciness which may sometimes exist in the connective tissues will soon be exhausted. Therefore, as the lungs, skin, and kidneys are constantly excreting water, patients who are cut off from it after abdominal operations suffer very greatly from thirst, although, perhaps, only slightly from hunger.

In such cases common sense as well as physiological knowledge tell us that only a sufficiency of water will quench the thirst; still, for want of a better method, the usual custom has been, and is, to put off the patient's urgent requests for a good drink with an occasional sip of hot water, a morsel of ice, or the corner of a wet towel, which as a great luxury they are permitted to suck.

It has often gone to my heart to have to use such obvious make-shifts as the lesser of two evils. Last year, however, when reading that the absorption of water injected into the rectum was so rapid that fluid lost in severe hæmorrhage might be replaced by enemata instead of by infusions into the veins, it occurred to me that this absorptive power of the rectum and colon might be utilized for quenching thirst when the necessary fluid could not be given by the mouth. All the necessary data seemed complete as to the cause of the thirst and the way in which water might be taken up by the rectum to quench it, but I wished to test the plan before publishing it.