THE BARREL BANDAGE FOR FRACTURES OF THE JAW

BY

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The treatment for fractures of the jaw is very little referred to in modern surgical textbooks and always appears to be in the "no man's land" of surgery. Simple fractures of the jaw are generally adequately treated by the dental surgeon, but those fractures resulting from gunshot wounds and from injuries caused through air raids will require the very closest co-operation between the plastic and dental surgeons. In order to ensure the successful treatment of these cases the Emergency Medical Service is providing special centres. The emergency treatment, however, will have to be provided at the first-aid posts and casualty clearing hospitals.

The immediate treatment of fractures of the mandible should be directed towards preventing asphyxiation, which is liable to occur through the loss of control of the tongue. The displacement of the tongue may be such that the air passages are obstructed, and in this condition the posture of the patient is important. The stretcher-bearers should be instructed to place the patient on the stretcher with his face downwards and his head hanging over the end of the stretcher. If the patient is able to walk he must be instructed to stoop well forward. The object should always be to keep the tongue well forward.

For the immediate relief of pain and to guard against the backward displacement of the mandibular fragments it is necessary to apply a bandage which will have the maximum pull in an upward and forward direction and must on no account have any tendency to pull backwards. For many years the textbooks have recommended the four-tail bandage, but it became evident in the last war that the backward pull of this type of bandage not only increased the displacement but was in many cases

FIG. 1.

FIG. 2.

extremely dangerous. It has since been discarded by all surgeons familiar with this type of fracture. The bandage which was found most efficient and easy to apply was the "barrel" bandage. As will be seen from the diagram, this has an upward and slightly forward pull.

To apply this about 6 feet of 2 to 2½ inch bandage—preferably unbleached calico—is required. The middle of the bandage is placed under the jaw, well back just in front of the angle; then a simple knot is tied over the

vertex of the skull (Fig. 1). Using both hands, open the knot so that the front loop comes in front of the forehead and the back portion under the occiput (Fig. 2). The two ends are then taken and upward tension is exerted, and by a slight adjustment the two running hitches are made to occupy a position slightly above and in front of the ear. The two ends are then tied in a reef knot on the top of the head (Figs. 3 and 4).

FIG. 3.

FIG. 4.

I am indebted to Sir Harold Gillies for the use of the illustrations.

A HAEMOLYTIC STREPTOCOCCAL EPIDEMIC IN A HOSTEL

BY

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What has been called the "unitarian" hypothesis with regard to streptococcal epidemiology has often been referred to during the last few years, a particularly interesting account by Bradley appearing in the *Journal* of October 8, 1938 (p. 733), a most opportune moment for me. He stressed the value of typing haemolytic streptococci and showed the varying types found over a number of years in the semi-isolated community of a boarding school. While reading this I was confronted with an epidemic in a somewhat similar community—namely, a university women's hall of residence, numbering with staff and students about 200. The following is an account of it which may be of value to others, for the more we know how to combat streptococcal infections the nearer we are to reducing one of the most crippling as well as most deadly groups of diseases.

Clinical Record

In the summer of 1938 one student, not my patient, was ill, had cervical adenitis and peeled, and was thought to have had an unrecognized scarlet fever. In early June I was asked to see another girl who had a rash like scarlet fever but no rise of temperature, and who later developed enlarged glands. In late June a definite case of scarlet fever occurred, and another in July among the kitchen-maids. On investigation then I found that three others of the domestic staff and two students had been treated by various doctors during the summer term.

The comparatively few students and maids still remaining in Hall were all examined by myself or the assistant M.O.H. for any gross signs of nasopharyngeal infection.

It was hoped that the four-weeks vacation would clear any infection, but within two weeks of returning in September a maid went down with a septic tonsillitis but no rash. The students came back in the early days of October, and on the 8th a series of students and maids started with tonsillitis—one on the 8th, one on the 9th, two on the 10th, seven on the 11th, three on the 12th, one each on the 14th, 15th, and 17th—and four students went home on various dates to be ill there, making a total of twenty-one.

On the 12th it was realized that something drastic must be done to prevent the outbreak spreading, so all persons in Hall were given masks of gauze, which were to be worn for two weeks at all times except when eating, and they were told to avoid close contact with others so far as possible. Gargles were provided for daily use. These steps appeared to stop the epidemic from progressing, and no further cases developed except those which we could explain (see later).

Bacteriological Findings

Having read the above-mentioned paper, I appealed to the Public Health Laboratory to test for haemolytic streptococci Group A, which they agreed to do, though they could not undertake typing. The carry-over from the summer appeared to be somewhere among the domestic staff, so all these were swabbed. Four of them and the assistant in the sanatorium (who was nursing the sick) were found to be positive carriers of Group A, one remaining so for a month. All the sick were swabbed from ten to fourteen days after beginning, and with one exception were still positive. All positives, whether carrier or convalescent, were reswabbed at intervals of ten to fourteen days, and had the throat sprayed or painted twice daily, and were given frequent gargles, until the result was negative. During the acute stage they all had prontosil album, an average of 10.6 tablets (5.3 grammes) each, but mainly between eight and twelve. The highest recorded temperatures of half the cases were 100° to 102° F., with one-quarter higher and one-quarter lower. While the temperature was up, three or four tablets per twenty-four hours were given, and in eight cases this was sufficient to bring it to normal in twenty-four hours; in ten, normal was reached within forty-eight hours, and all were down by four days. Prontosil album was given at first for a day or two after the fall in temperature; but as time passed one or two tablets were administered daily until the throat was clear, a total of fourteen to seventeen being taken by some. The average stay in the sick-room was 6.6 days, and it mainly lay between five and nine days. The patients were then sent home or away for a few days, another swab being taken on their return.

Two patients developed cervical adenitis two to three weeks after the tonsillitis, and two had rheumatism (one so badly that she has been unable to return to college), but most recovered fairly well and had positive swabs long after they were fit. Most took five to six weeks to clear (the usual scarlet fever isolation period), but three were still positive eight weeks after the attack. Two of these had large unhealthy tonsils (which were removed in the vacation) and the other had suffered from nasopharyngeal catarrh for many years, though her tonsils had been removed previously. This case responded to nothing until a pint of glycerin and prontosil was used, a negative swab being obtained within two weeks.

Discussion

The effectiveness of the mask in preventing further trouble was shown early, especially when this precaution was omitted by those with positive swabs. One convalescent did not wear it during the rehearsal of a play, and within three days two members of the cast went down. Another girl thought it foolishness, and did not wear it in her room when others entered, with the result that her friend caught the infection. Two mild cases started in December the source of which was uncertain, but one of these patients had been sitting working in front of an unmasked carrier. By December 22 all cases were negative, except the tonsillectomies, and these patients were all right on their return in January. No further cases developed.

The cause of the sudden outbreak was obscure until it was discovered that during those early days after the September crisis there had been a great trying-on of gas masks, and one of the fitters-on, who was connected with the kitchens, had had some streptococcal infection in the summer vacation. Though this was not known till much later there seems little doubt that she or a maid who remained positive for a month acted as the link between the summer and autumn outbreaks. The summer rashes tended to be Group A of the scarlet fever type, but there were no rashes in the autumn. Both outbreaks were followed in a few cases by a cervical adenitis two to three weeks later. The second outbreak gave rise in five to six weeks to two cases of acute rheumatism, one very severe.

Summary

The history of a haemolytic streptococcal Group A throat infection is given, showing the varying symptoms found.

Droplet contact through the breath is clearly demonstrated.

Group A positive swabs lasted usually five to six weeks, sometimes longer.

The mask is effective in preventing spread, thus reducing time of isolation and period off studies.

The value is shown of throat swab examination for the haemolytic streptococcus as well as diphtheria when dealing with people in a community.

The danger from carriers of Group A is stressed. This is recognized in puerperal cases, but not so well in the case of haemolytic throats in the general community. Persons with positive swabs should be isolated or at least masked until negative.

The severity of the disease declined as time passed.

Prontosil album (or similar drug) taken by mouth or applied locally is of value in dealing with these organisms.

My thanks are due to the staff of the Public Health Laboratory, who reported on the swabs, and also to the nurse at the Hall, whose care prevented further trouble.

Arteriographic Diagnosis of Tumours.—Characteristic displacements of the cerebral vessels and carotid siphon make it possible to determine the situation and extent of frontal lobe tumours. Thus, polar astrocytomas suitable for radical operation may be distinguished from the fronto-medial tumours which are usually glioblastomas of bad prognosis. Laterally situated astrocytomas may also be distinguished.—*Arteriographic Diagnosis of Tumours of Frontal Lobe and Basal Ganglia.* E. Fischer.—*Zbl. Neurochir.*, April, 1939, 2, 72.