TREATMENT OF ASTHMA BY AUTOGENOUS STREPTOCOCCAL VACCINES.

BY

SIR LEONARD ROGERS, M.D., F.R.C.P., F.R.S.,

I.M.S.(RET.).

PHYSICIAN AND LECTURER, LONDON SCHOOL OF TROPICAL MEDICINE;
LATE PROFESSOR OF PATHOLOGY, CALCUTTA.

MANY workers have recorded favourable results from the vaccine treatment of asthma, especially in the bronchial type of the disease. During my last seven years in India I used the method extensively in Bengal, where asthma is so common and difficult to treat, and I have already recorded favourable results in 13 cases¹ from the use of autogenous streptococcal vaccines made from cultures from the sputum. Since that time I have treated, and followed up by correspondence as far as possible, a further larger number of cases, and am now able to record a second series of 40 cases. As it would be tedious to describe them in detail, I have classified them to bring out the degree of benefit and the duration of the effects obtained.

The method consists simply in making cultures from the sputum, preferably that obtained during or soon after an attack, subculturing a number of colonies of streptococci, including any short chain pneumococci, so as to include a number of strains, and making up a vaccine of the strength of 100 millions in 1 c.cm., which can be conveniently put up in one of Wright's small rubber-capped bottles. The initial dose is $\frac{1}{4}$ to $\frac{1}{2}$ c.cm., and as soon as little or no reaction ensues it is rapidly worked up to 1 c.cm. weekly, and after several such doses to $1\frac{1}{2}$ to 2 c.cm., the larger doses being given at intervals of ten days. If any marked reaction or temporary increase of the symptoms occurs the dose should be decreased to one-half and cautiously increased again when no reaction follows an injection. The treatment usually has to be continued for two or three months and sometimes longer, several injections being given after definite improvement is observed to obtain more lasting results. There has been no selection of cases, all those treated since my last paper appeared up to within one year of leaving India, and followed up for several months to allow sufficient time to enable the results to be judged, being included.

The patients may be conveniently grouped in the following classes, beginning with the failures, continuing with those who obtained only temporary benefit, and ending with the patients who were very greatly improved or quite well when last heard of, the last class being subdivided into those who had not been followed up for a complete year and those in whom the benefit had persisted for from one to four years.

I. Failures.

They number 6 out of 40, or 15 per cent.

In 2 severe reactions without benefit occurred; in one of them the symptoms appeared to be anaphylactic in nature.

In 2 no effect was produced, but one of these only had three injections and could not be followed up, so the treatment did not get a fair chance. In one much benefit followed for five months, but was probably due to a change of climate, so it is included among the failures as he relapsed. In one some benefit followed, but he was cured later by nasal cautery. On the other hand, I have seen several other cases in which nasal treatment failed, but vaccines were subsequently successful.

II. Good Immediate Effect but Relapse within One Year.

This was observed in 7 cases, or 17.5 per cent.

In 2 the relapse was as severe as before, although seven and ten months' relief respectively was afforded. In one much relief was afforded for nine months, and further benefit resulted from a second course, although the patient was aged 65 and had had asthma for ten years.

In 4 slight and less frequent attacks recurred after from five to nine months; chills brought on the attacks in two instances, but the patients were very much pleased with the great relief afforded them, although it was temporary in two and partial in the remaining three.

III. Good Effect for a Year or More, but Subsequent Relapse.

This occurred in 6 cases, or 15 per cent.

In one a slight relapse occurred after a wetting at the end of a year's freedom. In one after twenty-six months' freedom a relapse followed a wetting, but the patient kept well again later. In one a relapse occurred after influenza, and the later history is not known. In two a relapse was followed by freedom from asthma or greatly lessened severity of the disease for further periods of one to two years.

Thus in all these cases very great benefit of from one to three years' duration resulted.

IV. Good Effects up to Six to Nine Months when Last Heard of.

The number of cases in this series was 5, or 12.5 per cent. In all the immediate effect of the treatment was very satisfactory, although they could not be followed up for long; in view of the results obtained in the next series, there is, however, every reason to believe that in most cases in this class (IV) the relief was also of considerably longer duration. All except one were chronic cases.

V. Good Effect Maintained for at Least One to Four Years.

Considerably the largest number, 16 cases, or 40 per cent., fall into this most satisfactory class, in which complete or almost complete relief was afforded for a long time. Thus, when the patients were last heard of, the benefit had in 9 instances lasted one to two years; in 3 it had lasted two to three years; and in 4 from three to four years.

That Class V was not by any means composed of early or favourable cases will be clear from the following data:

The average age of the patients was 40.5 years.

The average duration of the disease was five years.

The average duration of the treatment was three months.

These results appear to me to be very satisfactory, especially when it is remembered that the patients were all treated in the extremely trying, damp, hot climate of Lower Bengal, which is notoriously unfavourable to asthmatic patients, as pointed out in 1886 by Norman Chevers. Many of them were very liable to colds and bronchial trouble, and these conditions also were much relieved. Only patients with well marked asthma are included in the above series, the bronchial type of asthma being the prevalent one in Bengal.

In view of favourable reports on the use of intravenous injections of peptone in asthma it occurred to me that my vaccines might contain an appreciable dose of peptone; but analyses kindly made for me by my colleague, Major Shorten, I.M.S., Professor of Physiology, Calcutta, excluded this explanation of my results. They therefore appear to be due to immunization against the streptococcal group of organisms, which are so frequent a cause of bronchial and throat infections, and a common excitant of asthmatic attacks in persons liable to them. I have not attempted to isolate and differentiate separate colonies of this wide group of organisms, as I believe the simpler plan of using a number of colonies to make subcultures from the original culture tubes for preparing vaccines is more satisfactory; it can readily be carried out in any small bacteriological laboratory, and has furnished results in my hands which have been most satisfactory to the majority of my patients.

CONCLUSIONS.

1. In 15 per cent. of the cases the treatment failed to give material relief of a lasting nature.

2. In 32.5 per cent. great relief was afforded, but it was either not permanent or it was incomplete.

3. In 52.5 per cent. the patients remained well when last heard of from one-half to four years after the treatment.

REFERENCE.

¹ *Practitioner*, June, 1915.

TRANSFIXION AND IMPALEMENT INJURIES.

BY

W. F. BROOK, F.R.C.S., MAJOR R.A.M.C.(T.),

CONSULTING SURGEON, SWANSEA GENERAL HOSPITAL, CARMARTHEN COUNTY INFIRMARY, AND PORT TALBOT GENERAL HOSPITAL.

(With Special Plate.)

RECENT references to these injuries in the *BRITISH MEDICAL JOURNAL*, including that of the historic shaft preserved in the museum of the Royal College of Surgeons of England, encourages me to think that the following cases, one occurring in military and the other in civil life, are of sufficient interest to place on record.

Impalement on Bayonet.

The patient, a short, thick-set muscular man, was admitted in November, 1916, to Neath Section of the Third Western General Hospital, among a convoy of recently wounded from France. He presented a small bayonet wound in the right gluteal region, received six days previously, healing by primary union; beneath it was a hemispherical swelling about 3 inches in diameter, evidently a haematoma. I examined the latter carefully then, and again three or four days later, when it was diminishing in size, as its position suggested the possibility of injury to the gluteal artery. The only account vouchsafed