delivery, in spite of prophylactic treatment. The last readings were blood pressure 50, and pulse 156, the patient being restless, cold, and unconscious, with marked air hunger. Post-mortem examination revealed localized haemorrhagic infiltrations through the lower segment of the uterus, the total volume being 4 to 6 oz. Haematomata were present under the peritoneum, and on the interior of the uterus, over this extravasation.

CONCLUSIONS

In conclusion, there are several points which I wish to emphasize.

As already stated, shock can follow blood extravasation, but this is not inevitable. The necessity for reabsorption was pointed out by Tweedy when he stated that shock would occur when fresh blood came in contact with blood already effused into the tissues.

The first step in the production of shock is a fall in blood pressure, and accordingly as the blood pressure falls to lower levels pulse rate and urinary changes become evident.

A persistently falling blood pressure, in spite of prophylactic treatment, is of very serious import, and efforts should be made in the presence of such readings to localize and remove the blood effusion.

Prophylactic treatment is of the utmost importance, especially the several points already detailed. By its

use otherwise inoperable cases will be rendered safe for operation.

In the event of labour not starting after puncture of the membranes, etc., plugging the vagina should be performed without delay, provided that the blood pressure is approximately 80 mm. Hg. Below this level, unless marked improvement in the patient is soon noted, classical Caesarean section should be performed.

I am deeply grateful to the Master of the Rotunda Hospital, who was at all times most anxious to allow the large amount of clinical material under his care to be at the disposal of his assistant.

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THE NASAL ELEMENT IN SPASMODIC ASTHMA*

BY

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I am convinced that many cases of spasmodic asthma are cured or greatly improved by appropriate intranasal treatment of such abnormalities as may be present. At the same time it must be admitted that some cases are not so benefited.

In many cases of asthma there are nasal abnormalities calling unmistakably for treatment, but similar abnormalities may exist without asthma; while, further, cases of asthma occur in which there are no apparent nasal abnormalities. It follows that whatever importance may be attributable to nasal abnormalities in the production of the asthmatic reflex, there must be some other condition in greater or lesser proportion. It may therefore be asked what the other condition may be, and I think it will be generally accepted that it is something which heightens the sensibility of the vago-accessory centre in the medulla oblongata, producing a condition recognized, with some reservation, as vagotonia.

Dr. Langdon Brown,¹ in his presidential address to the Section of Therapeutics, classifies *the possible excitants* as psychological stimuli, foreign proteins, and peripheral stimuli. It is in the last group that nasal irritation finds itself, along with eyestrain, hay fever and other nasal troubles, sinus infections, gastric and intestinal disturbances, and uterine disorders. The centre may receive sensory stimuli through the sensory divisions of the fifth and those of the tenth nerve. Through the former are conveyed the stimuli aroused by nasal disorders, and through the latter those from the bronchi, the stomach, and other internal organs, derangements of any of which may excite the asthmatic spasm.

In regard to *the psychological element*, we all know of the instance of spasm excited by the presence of an artificial rose, which is only a special case of the effect of expectation so strongly emphasized by Hurst.² The existence

of a cortical centre for expiration has been proved by the experiments of Horsley and Semon,³ and there should therefore be no difficulty in explaining the psychical influence which may determine the asthmatic explosion. This centre is closely associated with that for the adduction of the vocal cords and production of voice. In one of my cases in which there was a strong desire to awaken the sympathy of a couple of indulgent parents, and to keep a husband in a state of anxiety, each expiration was accompanied by a vocal sound which was to a great extent voluntary.

Relative hypersensitiveness may be caused indirectly by the removal of cerebral cortical inhibition, and may be supposed to occur in Dixon's experiments, but, as he says, it is doubtful whether it has any significance in the case of the dog. Direct facilitation by a too excitable cortex may produce the same effect, as also may a want of "balance" from defective endocrine action on the sympathetic.

A most important cause of vagotonia is *the anaphylactic action of foreign proteins* producing undue irritability of the vagal centre.* Admitting this to be a frequent factor in the asthmatic condition, it is unlikely that it is the only one or an inevitable one. This part of the subject has been thoroughly dealt with by Coke⁴ in his exhaustive work on asthma. It appears that only 50 per cent. of cases of asthma answer positively to the skin tests for special sensitization. Drs. Knott and Oriel⁵ say that they are not of any clinical value, and Hurst⁶ states definitely that except for food proteins in children and also for pollens, they are unsatisfactory. Dr. Adam,⁷ in his masterly treatise, holds that over-feeding, especially with farinaceous food, is mainly responsible for the disease we are considering, and treatment founded on this hypothesis appears to be eminently successful. Its importance as a cause is indisputable, both as an excitant of a general toxæmia and a peripheral stimulus through the sensory gastric branches of the vagus. McDonagh⁸ says, "Prevent and get rid of familial chronic intestinal intoxication and there would be no asthma." The need for appropriate nasal treatment is at the same time stressed by Adam⁹ and by Coke.¹⁰

While admitting these possibilities, I think there is every reason to attribute a very large share in the

* Read in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

production of asthma to the *peripheral stimulation exercised by nasal abnormalities*, as shown by (a) the frequency of nasal pathological conditions, (b) improvement after their removal, (c) recrudescence after their return, (d) disappearance of sensitiveness to special irritants after operation, and (e) the experiments of Dixon, Brodie, and Ransom.

With regard (a) to the *frequency of the presence of nasal disease in cases of asthma* in general, it must be very considerable, as shown by the investigation of 107 cases.¹⁴ In 68 there were nasal changes so well marked as to call for or at least justify operation, in 31 changes so slight that operation was not indicated, in 1 uncertain, and in 7 no nasal abnormality. These seem very high figures, but they were arrived at with every effort made to steer between over-enthusiasm in finding indications for intranasal interference and over-anxiety to avoid operation in which no benefit was likely to result. Making every reasonable allowance for rhinological enthusiasm the proportion is, nevertheless, a high one, and far beyond what simple coincidence would account for. The conditions usually offering themselves to inspection are: abnormally large size of one or other middle turbinated body, hypertrophy of the anterior lip of the hiatus semilunaris, deflection of the septum, especially of its upper part, polypoid outgrowths or typical polypi, suppuration in the antrum or other sinuses.

(b) The *disappearance or mitigation of the asthmatic paroxysm after the removal of nasal disease* is now a frequent observation. In a comparatively unselected lot of 120 cases reported with the nearest possible approach to accuracy, there were 33 cases of practical cure and 67 of improvement. Gratifying as these results might be considered, they seemed to me less favourable than my observations of the striking results in individual cases led me to expect. I therefore investigated a consecutive series of seventeen non-hospital cases. Two of them were subjects of neurotic dyspnoea (which recovered), and in the remaining 15 (genuinely asthmatic) the results were: recovery in 9; great improvement in 3; considerable relief in 1; and results unobtainable in 2.

That such a high proportion of good results should be possible in a consecutive series of cases is a strong evidence of the value of intranasal treatment in cases which are as appropriate for it as these happened to be. The particulars were published in the *Practitioner* for December, 1927.

The results of a consecutive series of *cases of asthma in children* persisting even after the removal of tonsils and adenoids are equally striking; it is very rare in such cases to fail to find enlargement of the middle turbinal on one or both sides to a degree which would arrest the attention of even the most sceptical. Out of 18 consecutive cases at Brompton Hospital the results were as follows: complete relief, 14; attacks fewer and less severe, 1; temporary relief (recrudescence after bronchitis and pleurisy), 1; relief (attacks less severe, nose still requiring treatment), 1; no improvement, 1. When this last patient, who had received no benefit, presented herself recently, she was quite free from asthmatic attacks. Short notes of these cases appeared in the *Lancet* for February 28th, 1931, p. 468.

(c) The *recrudescence of the asthma* after the recurrence of the nasal disease affords further evidence of causal nexus between the two conditions.

(d) The *disappearance of sensitiveness to specific irritants* would scarcely be anticipated as a result of nasal treatment, but it is a noticeable feature in one of my cases, that of a boy in whom the presence of a cat induced

asthma and who, after nasal treatment, was free from asthma and was able to pet a cat without any discomfort. Another boy, who reacted to cake and nuts, could, after operation, indulge in both without inconvenience. Other observers have reported similar occurrences.

(e) The *experiments of Dixon,¹¹ Brodie,¹¹ and Ransom¹²* demonstrate beyond question the presence of asthmogenic areas in the nose, especially the upper and back part of the septum. Irritation of this region in decerebrated animals produced contraction of the bronchioles, the action failing when the vagus was cut, but returning when the lower part of the cut nerve was stimulated. The nasal disturbance is therefore, *a priori*, a pre-eminent, even if not the only exciting cause of the asthmatic attack.

It has been suggested that it is not the contraction of the bronchial muscle, but a vasomotor dilatation of the vessels that produces the obstruction. This can only form a comparatively small element, as the bronchial mucous membrane is extremely thin and devoid of anything comparable to the erectile or cavernous tissue which produces the nasal obstruction in vasomotor rhinitis.

A remarkable illustration of the effect of nasal stimulation is the contraction of the lungs in the turtle when the posterior nares are rubbed, as observed by Drs. Carlson and Luckhardt on the authority of Dr. Mount¹³ of the Mayo Institute.

While insisting on the importance of the nasal element, and recognizing that of the other factors, I suggest that our *treatment* should be regulated according to the proportion in which each is found. Thus, if, say, the anaphylactic element is very obvious and the nasal one only slight, our attention should be mainly directed towards the former, but if, as in the majority of the cases that come before me, the nasal element is unmistakable, this should be dealt with discreetly without neglecting the other factors. This is well illustrated by the case of a distinguished actress, referred to me by my late friend Dr. Perkins, in whom the removal of the anterior portion of the left middle turbinal, with a small polypus attached, was followed by a complete and lasting disappearance of her distressing asthma. In this case the nasal factor preponderated over every other. In the case of an elderly lady, a long sufferer from asthma, I found on one side a much enlarged middle turbinal, and on the other a hypertrophic anterior lip of the hiatus semilunaris. I removed both, and heard no more of the patient till I wrote a year later, and learned from her medical attendant that her asthma had disappeared, her health had greatly improved, and her doctor's bill had diminished by 80 per cent.

As my judiciously minded friend Dr. McBride went the length of saying in a discussion on asthma in the London Laryngological Society in 1899:

"In some asthmatics nasal treatment is permissible, and even desirable, where the conditions are such that on other grounds operative measures would certainly not be indicated."

The *operation* most often called for is the removal of the anterior part of the middle turbinal by means of a snare, after making a snip in the neck of the turbinal with a Grünwald's punch or, as preferred by Mr. Ormerod, a Struycken's shear. Occasionally, it is an enlarged anterior lip of hiatus semilunaris which has to be removed. This is best shaved off by means of a strong probe-pointed bistoury, the detachment of the fragment being completed with a snare. Sometimes an upward-turned punch forceps has to be used to remove any loose or projecting residuum. The object to be kept in mind is to clear the pathological tissue away from contact with the septum with as little removal as possible, and this

may often be best achieved by submucous resection of a deflected portion of the septum itself, most usually in the upper part.

From the above considerations, it is obvious that asthma depends on many diseased conditions, and is in a way rather a symptom than a disease in itself. This may not afford much immediate consolation to the sufferer, but it indicates to the practitioner that it must be analysed and attacked from various sides. If on one side there is failure, an attack may be hopefully made on another, if *undue delay is avoided*. On the strength of the results I have produced, I urge writers on asthma in our textbooks of medicine to place among their foremost instructions that *the nasal condition should be thoroughly investigated and judiciously dealt with*.

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A SURVEY OF PROBABLE PROGNOSTIC FACTORS IN THE TREATMENT OF GENERAL PARALYSIS *

BY

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Most of the data on which this paper is based have been obtained from observations made on some 700 to 800 patients who, while under certificate in the London County Council mental hospitals, received malaria, relapsing fever, sapro-vitan, sulfosin, or tryparsamide, or a combination of any of them, together with subsidiary treatment by novarsenobenzene and the like.

SEX OF THE PATIENT

The first factor I wish to comment upon is that of sex. As is well known from the work of Moore, Solomon, and others, the incidence of neurosyphilis in the female is only one-third of that found in the male, although the nervous systems of both, as shown by the relative percentages of spinal fluid abnormalities, are invaded with equal frequency in the early stages of syphilis. This difference is even greater in women who have had one or more pregnancies, and the greater the number of pregnancies the lower the incidence of neurosyphilis. Such being the case it is of some interest to consider if this increased immunity of parous women to the *Spironema pallidum* is helped or enhanced by pyretic treatment. An analysis of the female paretics treated in the London County hospitals reveals the fact that 28 per cent. were nulliparous, 22 per cent. had had a single pregnancy, and the remaining 50 per cent. had had two or more. The discharge rate of these women as a whole was 31 per cent., but the nulliparae only gave a 19.2 per cent. discharge rate, in contrast to a rate of 47.6 per cent. in primiparae and 30 per cent. in multiparae. That is, pregnancy bettered the discharge rate in the ratio of 1 to 2.5 in single pregnancies and in 1 to 1.6 in multiple pregnancies, or, in

round figures, pregnancy doubles the chances of a successful remission. In a similar ratio it also increased their chances of improving sufficiently to become useful workers under supervision, although the mortality percentage did not show any marked variation between the three groups.

AGE

Taking age as the next factor, one finds most observers of the opinion that, with the exception of juvenile paretics, the younger the patient the better the prognosis. In a restricted sense this is true, but when dealing with certifiable mental disease one is usually satisfied if the patient reaches a state of remission good enough to justify his discharge from hospital and sufficiently prolonged to allow of his remaining out indefinitely. In general paralysis it is even satisfactory if the patient has a cessation of seizures, a freedom from contractures, and does not become bed-ridden. If the first-mentioned state is accepted, age is not of such paramount importance, for some patients as old as 56 years remit after treatment and have been discharged, while others over 60 years of age definitely improve and become useful institutional workers. I am purposely rather over-emphasizing the probability of improvement occurring after treatment in elderly paretics to counter a policy of *laissez-faire* towards these patients, which is advocated by some authorities. On the other hand, if an approximate return to normality is demanded, then undoubtedly the younger paretic makes the better citizen. In the cases under consideration the discharged patient who was able to resume his or her occupation to the full, and who only revealed mental abnormalities following an exhaustive mental examination undertaken months or years after treatment, had an average age of 37 years, in contrast to the average age of 46 years of discharged patients who, although they could not be justifiably detained in hospital, still required a certain amount of control and guidance by relatives, and in whom deviation from mental normality was easily detectable. Expressed differently, 71 per cent. of the discharged patients who could be regarded as being economically satisfactory were under 40 years of age. This age factor, however, is of little value in assessing the chances of life of a treated paretic, for in this collection of cases the highest relative death rate was found in patients between the comparatively early ages of 36 to 40 years.

TYPE OF CASE

When reviewing the literature which deals with the relative prognosis of the various so-called types of dementia paralytica, one is confused at the lack of uniformity in the findings, and inclined to be sceptical of type as any aid to prognosis. One could easily understand such differences occurring if it were the relative incidence of the types that varied, for national characteristics and temperaments differ in the normal. The discrepancies occur, however, in the relative results of type as compared with type, inclining one to presuppose that there are certain sets of conditions which vary from community to community, thereby affecting the type result of treatment in different centres. As far as this group of cases is concerned, this supposition cannot be substantiated, for between the types there was little variation in such ascertainable conditions as the average age (excluding, of course, juvenile paretics), the age at which infection occurred or its treatment, the incubation period of the neurosyphilis, or the standard of education and the occupation of the patient. True, women were more prone to be of the manic-depressive types, but not more so than the usual tendency of women to develop a manic-depressive psychosis more frequently than the male. It is a fact, however, that different types do vary in their response to treatment. In this country the expansive grandiose paretic is still the commonest, and at the same time gives the greatest relative

* Paper read in the Section of Neurology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.