dangerous. The first is the diminished pulmonary ventilation which follows the reduced respiratory requirements. Areas of atelectasis result which are invaded by pathogenic organisms, leading to a frank bronchopneumonia. The second is the venous stasis, particularly in the lower limbs, which is the result of the loss of two of the physiological factors which normally aid venous return to the right heart—namely, the negative pressure in the thorax which develops in deep respiration, and the propulsive action of contracting muscles in the limbs. As the venous flow slows down, so intravascular thrombosis is facilitated and thrombi are shed, to become enmeshed in the pulmonary circulation and cause scattered pulmonary infarcts, which in their turn are likely to become infected.

Recognizing, then, that it is bodily inactivity and not the comparatively trivial operation involved that will determine a fatal outcome, what can be done to improve matters? Of the measures in use in younger age groups to prevent the foregoing chain of events most are not satisfactory in the aged. Thus the employment of regular breathing and muscular exercises, measures normally as valuable to the abdominal surgeon as are active exercises to the orthopaedic surgeon, is not as a rule successful in the later age groups because of lack of co-operation. An old lady of 75 who has suffered the outrage of being admitted to hospital for an emergency operation is usually too bewildered and frightened to take such an apparently trivial admonition seriously and too absent-minded to co-operate even if she did. The same might be said for the use of any form of mask or tent for the administration of oxygen or carbon dioxide, though not perhaps to the same extent.

The only certain preventive measure for these patients is to regard the operation as a mere incident in the treatment and so plan it that the period of restriction in bed is kept down to the absolute minimum of one day. Nature herself aids us in accomplishing this in that the pain felt from the wound often seems to be much less in elderly patients than in the young. The involuntary exercise involved in getting out of bed into a chair increases the respiratory requirements, the pulmonary ventilation, and the rate of venous return.

Some such regime as follows is suggested in a patient over the age of 70 with a strangulated hernia. After a preliminary gastric lavage, operation is performed under local anaesthesia, with little or no pre-operative sedation. Omnopon or morphine occasionally seems to precipitate mental confusion, which is never completely recovered from, and the latter is to be avoided in an already inoperative patient. After the minimum operative procedure necessary to save life, with no attempt at reconstruction, a pad of wool is placed over the dressing and over all a firm hip spica bandage is applied. If a post-operative sedative is used, paraldehyde or potassium bromide and chloral are to be preferred to opium derivatives. During the first twenty-four-hour period, if there has been much vomiting, the fluid balance may be restored by the intramuscular route much more safely than intravenously.

On the day following operation the patient is got up in a chair for two or three hours, and this time is increased daily till on about the fifth or sixth day he is spending most of his waking hours moving about in it. He is permitted to walk as soon as he feels like it, and is encouraged to do so as early as possible.

This regime must of course be modified if an exteriorization operation has been performed, and is not so easily carried out in strangulated incisional or para-umbilical hernia. But it is applicable to both the inguinal and femoral groups, which make up the bulk of the cases.

Summary

An analysis is presented of 103 consecutive cases of strangulated external abdominal hernia treated by surgical operation, with a mortality of 16.9%.

An attempt is made to discover the significant factors concerned in this mortality.

Of these, the age of the patient and the duration of the strangulation are shown to be the most important.

The management of the condition in the aged patient is briefly discussed.

Acknowledgment is made to Prof. Grey Turner for stimulus and advice, to the surgical staff of the British Postgraduate Medical School, and to Dr. Allen Daley, Chief Medical Officer to the L.C.C., for permission to publish these data from Hammersmith Hospital.

ALLERGY, ENURESIS, AND STAMMERING

BY

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It was with considerable scepticism that the advent of nocturnal enuresis (Bray, 1937) and stammering (Kennedy and Williams, 1938) as allergic manifestations was noted, because so many conditions of doubtful origin, from epilepsy to dysmenorrhoea, have been so regarded. Enuresis and stammering are among the commonest preoccupations of the school medical officer, and it was accordingly decided to investigate the matter. The necessity for further inquiry into the aetiology of enuresis must be apparent to all who read the abundant and divergent claims to treat the disease successfully. Some authors think the cause is purely psychological, others can find a posterior urethritis. Some get the child up every hour or so or give ephedrine, which may keep it awake; others give bromide or luminal to keep it asleep. One advises ignoring the condition, and another makes the boy wash his bed-linen with great ceremony. One insists on the chamber being as handy as possible; someone else wants it right out of the way. Some state that the child will automatically be cured if he sleeps in hospital or with friends; others point out the large increase in enuresis caused by evacuation.

To find the correct incidence of enuresis it is essential to ask the leading question. For instance, out of 2,416 routine inspections a history of enuresis was spontaneously forthcoming in only 33 (1.3%) cases. Nevertheless, out of 200 children specially interrogated enuresis was reported in 14 (7%). It may be remarked that these figures apply only to school children between the ages of 5 and 14. Figures that include children of ages other than these will naturally be quite different, as the incidence of bed-wetting diminishes progressively as the child grows older. Mothers were always asked if the child had at any time since the age of 5 repeatedly wet his bed.

In order to establish the statistical significance of the figures given, the table of Loewenthal and Wilson (1939) was used. If "s" is found after a number it means that the result is significant at the level $P=0.05$. Further, "v.s." means that a conclusion is very significant at the level $P=0.005$. Some of the work done for this investigation had to be excluded for statistical reasons. For instance, an increase in nail-biting among allergics was found; but, considering the numbers in the series, the result was such that, according to the table of Loewenthal and Wilson, chance could not be excluded.

The Investigation

In each instance 200 unselected routine cases acted as a control. A history of allergy in the child or the family

was obtained in 85 (65%) out of 128 bed-wetters. The control figure was 28% (v.s.).

The diseases comprising the allergy in a smaller series than the above 85 cases was: migraine 35 (48%), asthma 17 (23%), hay-fever 13 (18%), eczema 8 (11%). The preponderating influence of migraine will be noted. Careful questioning soon reveals the very large part that sick headache of an allergic nature plays in the minor morbidity of school children. Recurrent headaches, combined with biliousness or vomiting and not due to any other discoverable cause, are necessary for this diagnosis. Also, this condition is markedly hereditary in origin, and can scarcely be diagnosed without a family history of allergy, usually migraine itself, in one of the parents. Pains in the abdomen are often prominent in the symptomatology.

Eczema is, of course, an omnibus term used by the public to describe a large number of skin conditions, allergic or otherwise. For the purpose of this communication eczema in children refers either to a history of infantile eczema or to the presence or history of Besnier's prurigo, which latter condition is perhaps far more common than is generally recognized. Urticaria, although of allergic origin, has been excluded in view of the difficulty of differentiating it, on history alone, from papular urticaria (lichen urticatus), from which most children appear to have suffered at one time or another.

The Influence of Allergy

The next step in this investigation was to find out what form of allergy was mainly responsible for the increased incidence of enuresis. Unfortunately only asthma and migraine could be considered, as sufficient numbers of eczema and hay-fever sufferers were not collected. Enuresis was present in:

14 (7%) out of 200 controls.
5 (6.9%) out of 73 asthmatics.
18 (31% : v.s.) out of 58 children with migraine.

From this it will be seen that the proportion of bed-wetters among asthmatics differs little from that in the general population, whereas there is a great increase among the migraine group, nearly a third of whom wet their beds. This raises the problem whether enuresis actually is a form of allergy or merely a concomitant of recurrent headaches. To probe this problem the incidence of headaches among bed-wetters was investigated. Headaches of any description or cause, if recurrent, were included. The incidence was:

Among 200 controls	26 (13%)
„ 50 bed-wetters	22 (44% : v.s.)

This shows how very commonly headaches of no definite category occur in bed-wetters.

Nightmares.—It is well known that asthmatics tend to have abnormal psychological traits. This holds true for sufferers from migraine as well. These children are often away from school, suffer regularly from digestive upsets, and are often nagged by mothers who have recurrent bad headaches themselves. To illustrate this the occurrence of nightmares among these children was worked out, as nightmares are a not uncommon sign of minor psychological disturbances. Most children get nightmares on occasion, so the mother had to be asked: "Does your child suffer from nightmares more than a normal child should?" The incidence of nightmares was:

Among 200 controls	18 (9%)
„ 73 asthmatics	19 (26% : s)
„ 58 sufferers from migraine	17 (29% : s)

Thus there is an increased incidence of nightmares among asthmatics and migrainous children. In asthmatics this would, of course, be expected in view of the nocturnal prevalence of the attacks. No doubt some enthusiast will

now consider nightmares to be a further manifestation of allergy. However, it is apparent that this condition—and likewise enuresis—is the result of minor psychological instabilities and thus due to allergy only indirectly.

Stammering.—Following the work of Kennedy and Williams (1938) it was decided to investigate the influence of allergy on stammering. Seventy cases of stammering were encountered, and a personal or family history of allergy was obtained in 46 (66%). The control figure of 200 children gave 28% (v.s.). Kennedy and Williams found allergy to be a factor in 99 out of their 100 cases. Perhaps this was because they considered urticaria in the allergic history, whereas for this paper only asthma, migraine, hay-fever, and eczema were considered.

Discussion

It has long been established that asthmatics tend to suffer from abnormal mental states, usually of a minor nature, and that the asthmatic attack is often brought on by some psychological stimulus. This, however, does not invalidate the essential allergic basis of the condition. Fuller details are given by Bray (1937). It is not so often recognized that sufferers from migraine tend to have abnormal personality traits as often as, or perhaps more commonly than, asthmatics. In popular literature, on the stage, and in everyday experience the headache is that complaint *par excellence* which may be invoked as an excuse to retire from some embarrassing or unfavourable situation. It should therefore cause no surprise that bed-wetting, stammering, and, as demonstrated in this paper, nightmares are commoner in allergic children. Furthermore, there seems to be little necessity to assume that they are direct allergic manifestations, such as would result from the operation of the two essential pathological features of allergy—i.e., spasm of involuntary muscle and increased capillary permeability (Bray, 1937). The fact that allergy is so often transmitted from parent to child makes these psychological tendencies even more apparent, in view of the habit of children to copy and to be influenced by their elders.

It is well known that enuresis tends to recur in successive generations, and Kennedy and Williams (1938) state that this is true for stammering as well. Might not this be due to the hereditary transmission of the allergic diathesis?

Summary

It is confirmed that enuresis and stammering are commoner among allergics.

It is suggested that among the manifestations of allergy migraine is largely associated with these two complaints, and in fact that headaches of various types may be a factor in the aetiology.

This being the case, as well as the fact that nightmares are so common in allergic children, it is suggested that enuresis and stammering are not themselves direct allergic manifestations but result from the abnormal psychological traits of allergics.

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E. C. Faust (*Southern med. J.*, 1941, **34**, 708) says that the malaria mortality in the Southern United States for 1939 was the lowest on record, being 20% lower than for 1938 and 30% lower than the previously lowest rate of the 5-7 year cycle of malaria mortality. Outside the South, Illinois is the only State with a significant number of malaria deaths (38-35) during the three years 1937 to 1939. Many of the Northern and Western States, however, have indigenous malaria.