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PSYCHOLOGICAL FACTORS IN ASTHMA*

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It is not my contention that psychological factors in themselves can be a sufficient cause of asthma, but rather that asthma, in the sense of the characteristic attacks, is a peculiar mode of reaction of certain individuals to a variety of stimuli, and that these stimuli may be either of a physical or a psychological order. The actual pattern of this peculiar reaction in the individual is dependent on physical conditions which still elude analysis, but which are undoubtedly often inherited. But it happens that the asthmatic attack itself is an unmistakable thing, which forms a very valuable indicator, as it were, of the existence of disturbances in the function of the organism as a whole. Partly for this reason—namely, the ready accessibility of the clinical manifestations—asthma forms a very useful experiment of nature, in which the effects of stimuli can be studied. If it could be shown that purely psychological stimuli could produce asthmatic attacks we should have a field which would prove extremely valuable in psychological medicine, where the data are so often purely subjective. In asthma the attacks themselves are so obvious and unmistakable that they could then be used as indicators of underlying mental disturbances, much in the way that colour changes are used in biochemistry.

Asthma can also furnish a striking text of what needs to be emphasized in the education of medical students; that the body and the mind are one; or at least that their interaction is so close that no examination of a patient should neglect some consideration of what is going on in his mind. We shall see how far in certain cases of asthma diagnosis, in the causal and not in the merely symptomatic and nosological sense, and treatment may both be wrong if the possible psychological factors are left out of consideration.

Association of Asthma with Psychological Unrest

If asthma is fairly often associated with psychological unrest there are some *a priori* reasons why it should be so.

1. There is evidence that a stock in which asthma occurs is often also one in which there is a high incidence of psychoneurotic manifestations: as if the asthma and the psychoneurotic constitution were closely allied. Compare the following diagram of a family tree.

2. The function of breathing is very much subject to emotional influences in everybody. It is a commonplace in literature—the catching of the breath in grief or fear, the sighing of sadness, the rapid breathing in excitement and anticipation, the expansion of the chest in joy, and the choking of anxiety. Numerous studies of respiration curves have demonstrated objectively the close relationship between emotional stimuli, or states of mind, and the respiratory function.

3. Another reason lies in the physiological mechanism of asthmatic attacks. They seem to involve among

other things a disturbance in what is usually called the vago-sympathetic "balance." Now this so-called "balance" is very much influenced by emotional states. Everyone knows of Cannon's experiments on the effects of anger and fear in animals on the production of adrenaline. But it is not perhaps so well realized, although a much older observation, and certainly not enough taught in medical schools, that every emotion tends to be propagated like a wave of physiological disturbance through the vagal and sympathetic systems to the viscera. If there is already existing some disturbance of the vago-sympathetic, clearly the emotional disturbance will have unusual effects, and asthma may be one of them.

It will be a matter of some importance if we can show by a judicious use of clinical instances that psycho-

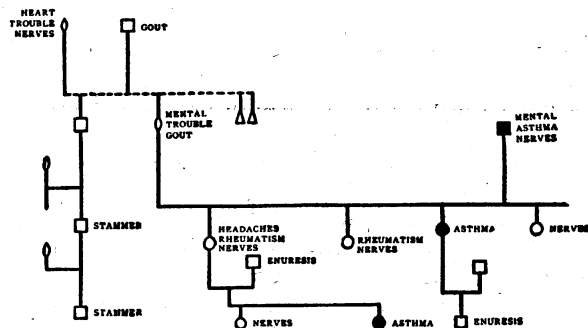


Diagram showing apparent inheritance of asthma (Addis).

logical stimuli can be equipotent with physical ones in producing signs and symptoms of physical disease. There are still some diehards who deny this, and who cannot see that an idea may be as active in one case as a bacterial poison is in another in eliciting physical signs and symptoms. I remember at a meeting of specialists in the treatment of asthma that one of them sought to throw ridicule on the psychological theory by pointing out that when he gave a vaccine and elicited a reaction in the form of an attack he demonstrated something so obvious as to leave no doubt as to the causal relationship of his vaccine to the condition. But when I pointed out that I could elicit asthmatic attacks in my consulting room by introducing not a vaccine under the skin but a topic of conversation that went "under the skin" in a figurative sense, he failed to see the precisely analogous nature of the experiment. In other words, an idea may become the effective stimulus which elicits the asthmatic response just as much as pollen or horsehair. Not only may psychological factors in the shape of emotions or ideas elicit individual attacks, but they may act in continuing fashion to produce a state of tension which every now and then may reach explosion point and express itself in an asthmatic paroxysm.

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Before passing to clinical examples which will prove what can be summed up in the statement that asthmatic attacks may be the equivalent of psychoneurotic symptoms, it is of some use to bear in mind the main aspects from which psychoneurotic symptoms can be looked at. They may be regarded: (1) Simply as the expression of a mental conflict or state of uneasiness. In this case the choice of the presenting symptoms may depend on constitution or accident—for example, in the case of asthma that the patient has for other reasons a fear of lung disease, or has been breathless from emotion on some significant occasion. (2) As peculiarly symbolic of the nature of the conflict—as when, for example, a feeling of suffocation is a symptom of psychoneurotic form, and represents a memory of some childhood incident, or fantasy, such as of the experience of being smothered. (3) Teleologically—for instance, as an expression of a means of escape or as a desire for sympathy. I saw a woman the other day with great pain in the sciatic distribution. There was no loss of ankle-jerks, and no difficulty in flexing the thigh on the trunk with the knee extended, but the pain was intense, and could only be reduced by morphine. The suffering was dramatic. She was an intensely unhappy married woman, jealous and feeling bereft of affection, and she said, "My family only pay attention to me when I am ill." (4) As a conditioned reflex, when the conditioned stimulus is itself either of an obviously psychological order or, although apparently of a physical order, depends for its effectiveness on psychological associations.

Now the occurrence of asthma can be shown, I think, to correspond in one patient or another to most of these cases, but not perhaps to (2), where a convincing example, if it exists, has not come my way.

Apart from the peculiarly symbolic aptitude which it may have in a few cases, the choice of asthma as the special mode of expression of mental unrest, whether the latter takes psychoneurotic form or not, depends (1) on constitution; or (2) on accident—as, for example, when a patient is placed in a situation of hurrying so that she is out of breath at the same time that she is undergoing considerable mental stress, as in one of the patients that will be instanced; or on (3) pre-existing fear of lung disease; or on (4) pre-existing disease of the lungs—as, for example, bronchitis—a fact which may have one of two psychological effects, either in directing attention to that portion of the bodily structure, or in producing an impression of organ-inferiority in the Adlerian sense; or on (5) a conception of breathlessness, as when a patient at a time of emotional stress finds himself in a closed space or a stuffy atmosphere, and consequently believes his breathing to be embarrassed—the converse of this is shown in a patient of Wittkower's who could divert an attack by opening the door of her room and looking out on the open space beyond; or on (6) an imitation of asthmatic attacks which the patient has witnessed, or something akin to them. This can apparently be a factor in determining the expression of the psychoneurosis in this particular way; for example, a patient of Wittkower and Petow's, when a child of 10, saw her mother very ill with pulmonary disease and marked dyspnoea, and a few days later developed asthma herself. A patient of Schulz, a boy aged 12, had been asthmatic for eight years. His mother, whose bedroom he shared, had been asthmatic for nine years. Removal from his mother at night was followed by cessation of his asthma.

Emotional Factors and Asthma Attacks

We find that almost every conceivable type of relationship between psychological factors and asthmatic attacks can be demonstrated by taking a sufficient number of asthmatic patients into consideration. The most obvious

type of relationship between asthma and psychological conditions is the frequency with which asthmatics exhibit what would be called a neurotic type of personality long before an asthmatic attack began.

For example, one patient I saw left school at 15 to be a teacher. She did not like it, and became "too poorly" to go on teaching. Then she became a Post Office telephonist, but had to be moved because she was always losing her voice. She could not bear going out with people she did not know; she always disliked new faces, and was always nervous of going anywhere on her own. All her household affairs worried her. She worried about money when there was no necessity to do so. She worried, as she put it, inwardly, by which she meant that she did not tell her husband about it. She was afraid of travelling, could not stand a draught, was afraid of closed spaces and of being buried alive, and was so scared of trains that if they went, in her estimation, a little too quickly she stood up and held on. Both of her children were nervous in a similar fashion, although neither of them yet had asthma. It appeared that the patient always stayed close to her mother when first married, and that she was afraid of being left alone in the house when her husband went to work. It was many years later, when hurrying to the bedside of her mother, who was ill at the time, that she had her first attack of asthma.

In this instance, which is typical of many, I did not succeed in tracing specific psychological reasons of a thoroughly and technically satisfactory kind for the attack coming on when it did, but it is quite obvious that she had more than the average predisposition to anxious reactions, and that the first attack occurred when her anxiety had been considerably stirred.

In other instances, however, it is possible to demonstrate a much more close and interesting association. The following case shows how psychological stimuli can be equipotent with physical ones in inducing asthmatic attacks.

This patient for five years previously had had a chronic cough, the result of bronchitis. Two years previously she had been out one day hurrying, and had to stop and hold on to something because she felt a shortness of breath. Since then she has had repeated attacks of asthma. In her case the psychological stimuli came to be much more frequent precipitants of an attack than physical ones. A postman knocking at the door would bring on an attack. Taking her blood for a Wassermann test brought on an attack at once. She tried very hard not to get excited, because she felt that excitement brought on an attack. Any worry seemed to bring one on. She could not bear smells of any kind, since all of them caused her chest to feel tight. There were very many people whom she did not like. If she saw them she got an attack, and so she would hurry along the street to avoid seeing them. She had always been abnormally sensitive on the subject of cats. She "could not bear the thought of their fur"; it would make her sick, she said, long before she had any asthma at all. Very simple emotional stimuli would produce asthmatic paroxysms: she dared not laugh, she said, for fear of inducing one. (Such a stimulus as the last is probably not of a truly psychological order. The actual stimulus, as Professor David Campbell pointed out to me, is effective, at least in some cases, on account of the physical movements accompanying laughter, and not on account of the emotional accompaniment. Hollow laughter can produce the same effect.)

In the last asthmatic case mentioned the psychological stimuli which brought on attacks so often were mainly of simple significance. But sometimes a stimulus which looks physical, and is effective apparently on account of its physical properties, really derives its pathogenic importance from its psychological associations. It is this type of asthma which it is particularly important to detect.

A married woman, aged 37, had had asthma for over twenty years. She was a jolly, over-active, clever person,

whose chief temperamental difficulty was that she was over-anxious, although she did not allow this to make her life unhappy. She never had any morbid fears, was sociable, never brooded, and declared that "nothing kept her down for long." Her attacks were brought on by two things: (a) by exertion, and (b) by making beds. It turned out on inquiry to be one particular bed, and my colleagues in asthma investigation were preparing to test her against the hair of which this particular mattress was composed. We thought it just worth while, as the precipitant was so curiously just one particular bed, to find out whose bed it was. It turned out to be her husband's. Starting from that, inquiry showed that her home life was not so happy as she had depicted it, and that her husband and she were far from a full understanding of one another. In fact, she felt that he definitely begrudged her her subsistence.

Similarly in another case, of an elderly man, for which I am indebted to Dr. Marcus, it was found that asthmatic attacks were precipitated by tobacco smoke. Inquiries showed that the sensitivity in this direction was limited to one particular type of tobacco smoked by the patient's son-in-law. The son-in-law and the patient lived in the same house and were at loggerheads. There seems little doubt that the limitation of the effectiveness of the stimulus to one particular kind of tobacco smoke was much more attributable to this emotional relationship than to any possible difference in the constitution of that person's tobacco smoke from anyone else's.

The connexion between asthmatic attacks and emotional factors can be demonstrated in another way. For example, I have known a middle-aged man whose asthma was cured by a course of injections but was promptly replaced by outspoken and obvious anxiety symptoms in the form of fear of being alone, fear of travelling, and the like. There seems little doubt that the asthmatic attacks had previously served as the expression of this anxiety, and by some means or other, whether by physical means or by mere suggestion, the injections which he had received had overcome the asthmatic tendency and allowed anxiety symptoms to appear undisguised. I have read of a case in which attacks of manic-depressive psychosis alternated with attacks of asthma, the asthma ceasing at the onset of the more acute phase, either of elation or depression, to reappear with their subsidence (Saxl, *Wiener klinische Wochenschrift*, 1933, xlvii, 1515). Kesselbaum retails ten cases of dementia praecox in which the asthma ceased at the onset of severe mental symptoms. These instances, however, probably do not indicate the same type of underlying state.

In yet other instances the history of asthma is extraordinarily like that of a psychogenic illness, asthmatic attacks taking the place of what one would expect in the way of symptoms of anxiety.

For example, a woman, aged 49, had bronchitis with asthma for twenty-eight years. The first attack occurred at the age of 17, immediately after her father's death. He had not been a good father by any means; he drank terribly, and did not work. The patient had to go out to work herself as soon as she left school, at 13. The second attack did not occur until she had had her first baby. She had in all eighteen miscarriages and three living children, and the attacks occurred, significantly I think, with each pregnancy after the first one. The recurrence is significant at these particular times because she had never wanted any children, and was always sick as well as asthmatic during her entire pregnancy. Her husband, on the other hand, would have children, and, as she put it, "he didn't seem to trouble."

Should it be assumed that in this instance the bodily changes occurring during pregnancy are the important factors precipitating these asthmatic attacks, or was it extreme unhappiness and reluctance to have the child that produced the recurrence? I am willing to leave the question open, but I think it is a point in favour of the predominance of the anxiety factor that the attacks began immediately after the death of the father whom she hated.

Another pointer in the same direction is the observation that asthmatic women usually find their attacks relieved during pregnancy—especially in the later months—it is supposed as the result of biochemical changes.

Another example of the same sort was furnished by a middle-aged man who had suffered from asthma for some years. It was found that the asthma did not begin until after the birth of the second child, when the situation had been very tense. His wife's account of it was that she had wanted to have another child. Her husband did not, saying that one was sufficient, and he did not want her to have a bad pregnancy and another bad confinement. He hated people to think that he was thoughtless for his wife in giving her another child while the first was such a baby. During pre-natal months he had pregnancy sickness once a day, she about three times a day. Her husband continually said that he was not looking forward to the child's arrival because she was causing the mother nine months of suffering. She made up her mind to love the new baby 200 per cent. to make up the deficiency. At birth the father was much more interested in the mother's recovery than in the baby.

The father later on criticized the child as being very backward and lacking in brains, and his asthma became chronic. He was, of course, a neurotic person. He had been a disappointed man, because he had to give up a profession which was not lucrative enough, and had to take an office job. He did not care much for other people's society, although, being fundamentally kindly, he could have been popular. He had reacted to his professional disappointment by a loss of ambition, pessimism, and preoccupation with his health.

He had become indifferent to everything and everybody. His family life was very much clouded and complicated by his attitude to the younger daughter, who incidentally suffered from colitis, which fluctuated very much in intensity with the temperature of the psychological atmosphere at home. When the father was induced to acknowledge formally his own failings and to substitute a more affectionate, less grudging attitude both his asthma and his daughter's colitis improved considerably.

We have therefore found asthma: (1) implanted in a psychoneurotic personality, as the expression of the cumulation of the anxiety; (2) equipotent with physical stimuli in precipitating individual attacks; (3) as a conditioned response to a stimulus with psychological associations ("meaning"); (4) replaced by anxiety symptoms; (5) replaced by elation or depression in a manic-depressive psychosis, or by a schizophrenic psychosis; (6) expressing conflict—for example, a conflict of impulse with conscience; (7) as a protest against an unwelcome situation; (8) as a means of escape; (9) improved or removed by suggestion, either in the waking state or under hypnosis. Witts and E. T. Conybeare observed a general tendency of asthmatics who seek medical advice to respond, whatever the method of treatment prescribed, provided, of course, that the treatment was faithfully and seriously administered. Witts traced the effect of injections of normal saline instead of vaccine in a number of his asthmatics, and found that the patient might still record improvement or, alternatively, that he would claim that the injections made him very much worse. It may be concluded that psychological factors are equipotent with, may replace, or may be additional to physical factors in producing both asthma and asthmatic attacks.

Teleological Function

I knew a patient whose first attack of asthma began when he was on holiday somewhere abroad with his wife. It was a singularly unhappy holiday; he had always been difficult, and during that holiday he sulked all the time. The asthma doubtless served the purpose of proving to them both that he ought not to have gone there, although, of course, it was put down to climatic unsuitability. The same patient would get an asthmatic

attack in the consulting room when certain topics were referred to. The attacks recurred when one persisted in trying to get personal details from him which would have had a bearing on the aetiology of his attacks and of a good deal of his unhappiness. He had long taken to alcohol to drown his unhappiness. Subsequently he underwent a lengthy psychological analysis. Now, I am told on good authority, he is a total abstainer, and if he even feels tempted to take a brandy and soda he gets an asthmatic attack.

Suggestion

I have known suggestion, even in the waking state, produce a favourable effect in reducing the number of asthmatic attacks. No doubt this is the result of the alleviation of anxiety by confidence in the doctor making the suggestion. Cases are on record—for example, of two young patients mentioned by Strauss—where hypnotic suggestion has succeeded in abolishing the attacks.

It is interesting to notice that in asthma is one of the rarely demonstrable instances where recent or continuing psychological disturbance can lead to structural disease and even to death. It has been observed that anorexia nervosa is the only hysterical condition that can be fatal. But here in asthma is another, for repeated asthmatic attacks, as everyone knows, lead to emphysematous changes with accompanying fibrosis and pulmonary and cardiovascular changes. Or there may ultimately, though rarely, be death in status asthmaticus. It seems that failure to recognize the presence or even preponderance of psychological factors in the earlier stages may be responsible for the subsequent semi-invalidism which asthma is apt to imply.

It has seemed to me, from listening to the history given by asthmatic patients, that the diagnosis of asthma itself, proffered in the early stages, has an unfortunate psychological effect, and may tend by suggestion to confirm the patient in his habit of asthmatic attacks. This suggestion has inevitably been reinforced considerably by the elaborate and very frequently futile medicinal, surgical, or therapeutic method employed. So long as those who treat asthma fail to consider in every case when it first comes into their hands the possibility of psychological factors, so long will a number of people be turned to chronic invalidism. It has been my experience that there is a tendency to consider mental factors only after everything else has failed; so that the cases that are referred for a psychological opinion are *in extremis* and in several I have seen under these conditions almost moribund.

I remember one young man who had been ill for a number of years, his asthma having started in adolescence, upon whom all kinds of physical remedies had been tried without avail, and who at last was seen in a state bordering on status asthmaticus, with pronounced physical signs in his chest. Investigation from the psychological angle showed that he was a very homesick youngster when he entered the Navy at a tender age. He was devoted to his mother with pathological intensity. He had disliked the life in the Navy, and within a year or so of entering it had developed dyspnoeic attacks, which were diagnosed as asthma and treated along physical lines. They got him out of the Navy, it is true; but by that time he had been so confirmed by treatment and diagnosis in his belief that he had a disease and must expect attacks that the relief from the situation which he disliked so much was of no avail in the relief of symptoms.

It is a common observation in psychoneurotic conditions in general that those who escape from a situation by means of symptoms have to pay for their emancipation by a continuance of these symptoms; thus only is their honour or their conscience satisfied. To recover involves acknowledging their failure to face difficulties. It is customary to say that they prefer to keep their neurosis.

Actually there is no conscious preference; they would get rid of it if they knew how. But in the case of an asthmatic of this type all the conscious factors are in favour of continuance of the condition after the original precipitants have ceased to work. There is usually no one to teach him that the illness is continued only by suggestion, or a conflict with his conscience, or both; by the time the boy I have mentioned reached me he was so ill with the secondary complications of his repeated asthmatic paroxysms that it was too late.

A similar case is reported by Oberndorf.

A woman was nearly moribund when she came under psychological observation. She had been drenched with medicines, and was so dependent on them that a consultation with a general physician was called to determine whether the withdrawal of adrenaline and hypnotics might not be attended with fatal results. It was decided to attempt withdrawal, and it was found that the substitution of sterile hypodermics for adrenaline and of inert substances for hypnotics had better effect on the course of the illness and could be gradually abandoned. The patient improved very considerably for a time, when her personal problem, which consisted in underlying hostility to her own mother, dissatisfaction with herself in being a girl and not a boy, and in discontent with her married life, were ventilated. She could not face a sufficient change of attitude, and she died some months later as the result of a recurrence of the asthmatic habit, coupled with a reversion to her former modes of medical treatment.

Treatment

In confirming any aetiological theory the therapeutic test is of great, although not of principal, value. The proof of the pudding is in the eating. In the case of the psychological theory of the causation of certain cases of asthma it is of conclusive value, for the possible fallacy of the therapeutic test lies mainly in the possibility of interference by suggestion, and the influence of suggestion is what we want to demonstrate here.

Romer reported two cases. In one case the asthma had been present for sixteen years. After the psychotherapeutic treatment the emphysema had subsided and the eosinophilia, which had reached 24 per cent., had decreased to 4 per cent. Asthma had not recurred at the time of his report. In the other case the asthma had been constantly under treatment with, among other things, potassium iodide, asthmolysin, afenil intravenously, morphine, nasal operations, and x -ray irradiation of the hilus. After a week the patient became symptom-free, and remained free up to the time of his report.

Moos reports that he treated by intensive psychotherapy sixteen asthmatics who were unable to work by reason of their disease. In all these cases the bronchitic lung signs disappeared at the end of the treatment. The emphysema subsided entirely or considerably, except in two patients who were more than 50 years old. All cases ceased to have sputum, and the Charcot-Leyden crystals and Curschmann's spirals disappeared also, a fact which surprised the author in his first studies. The eosinophil cells in the sputum disappeared also, and the eosinophil count in the blood went down to normal. Of cases where Moos was led originally to the assumption of allergic factors he writes:

"At the end of treatment I always exposed the patients to what they and myself considered the specific allergen—for example, one patient to flour dust in his father's mill, another patient to dust in his factory—and several patients were exposed to hay, which previously they could not stand. None of these patients reacted with an attack."

Naber observed that in many patients the fear "It will come again if I get a cold" or some other fear—for example, of wind, fog, or snow—was the precipitating factor in many attacks. Naber obtained a higher per-

centage of cures by his psychotherapeutic methods than he obtained by allergic therapy. An interesting observation has been made in this connexion by Wittkower and Petow, that when the asthma has been cured by psychotherapy the allergic skin reaction remains unaltered. For example, a patient with tobacco asthma suffered less with his asthma as the result of hypnotic suggestion, while after psychological treatment of a more analytic kind he lost his attacks altogether for a time.

Recently an experiment in the treatment of asthma has been conducted in the department of psychological medicine at Guy's Hospital by Rogerson, Hardcastle, and Duguid. It had been observed by Dr. H. W. Barber that asthmatic children or children suffering from the eczema-asthma-prurigo complex who were sent to convalescent homes commonly remained free from their attacks while they were away, but relapsed immediately on coming home, or soon afterwards. One case, for example, had an attack on alighting from the train at his destination. Twenty-three children who had been treated unsuccessfully by other methods were chosen for investigation and treatment. The following facts stood out.

As the result of treatment, the duration of which varied from a few weeks only to a year, ten of the twenty-three were free or almost completely free from symptoms, and four were much improved. Four showed some improvement and five were not better. The treatment consisted in educating the parents in their own attitude and in their attitude to the child, and in treating the child either in a manner similar to that used in adult psychotherapy or through his play.

The psychological factors which were discovered were chiefly these. In seventeen of them parental over-protection was prominent. This over-anxiety on the parent's part was due to one of two opposing attitudes—either the child was an only child, or had been for some reason very much wanted (for example, an only boy), or the child had not been wanted at all, and this knowledge conflicted with the maternal conscience and made the mother become over-anxious and fuss the child unduly. In addition, most of the children displayed certain traits of temperament and character which were summed up as high intelligence, over-anxiety, and lack of self-confidence, much latent aggressiveness, and egocentricity in comparison with other children.

Incidentally, the results seem to point to the necessity in speculating as to the psychological significance of asthmatic attacks, of applying Occam's razor—*entia non sunt multiplicanda praeter necessitatem*. The children did not have their attacks in order to get away from parental control or to get parental sympathy. Neither is it necessary to suppose that the anxiety which generated their attacks was a reaction against latent aggressiveness in most cases. It is sufficient in order to explain the results of most of them to assume that anxiety is infectious, which indeed is a matter of common observation; that the parental attitude aroused corresponding fear and tension in the child; and that the latter, with a constitutional or more rarely accidental predisposition to respond with asthma as well as fear, did so as an inevitable resultant of these factors. The tension sympathetically generated had to find an outlet, but it is rare that asthma is symbolically appropriate to the particular psychological cause. The only specific relationship that I see as possible in most cases is that of an underlying constitution which on the one hand makes the subject prone to asthmatic attacks and on the other prone to the excessive development of anxious emotions.

The relationships which have been demonstrated between asthma and psychological factors will also probably be found to hold over a wide range of allied

conditions—that is, in a certain proportion of cases of eczema, prurigo, urticaria, epilepsy, migraine, and what Ryle has called in general the "visceral neuroses."

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LISTER'S STRAIGHT BOUGIES IN THE TREATMENT OF URETHRAL STRICTURE

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Notwithstanding the widespread use of gum-elastic bougies for dilating urethral strictures, the employment of such instruments suffers from the disadvantage that with them the surgeon has hardly any guiding control over the point of the bougie. He is therefore in some cases forced to discard the gum-elastic, and to have recourse to rigid metal instruments. On the other hand, it has to be admitted that, while the general use of the latter is preferred by some surgeons, there are cases where failure to pass a metal may be followed by success with a gum-elastic instrument.

In stricture cases where, either of choice or of necessity, the surgeon decides to employ metal instruments, it will be found that Lister's conical curved bougies meet most requirements, and that the average stricture usually offers in skilled hands no great impediment to the passage of these instruments. Nevertheless everyone must have at times experienced exceeding difficulty in negotiating the stricture. In the smaller sizes of the curved instruments the angle at which the point is set to the long axis of the shaft prevents strictly precise handling of the instrument, and the risk of making a false passage with them is by no means negligible. The same difficulty attaches to the use of the finer sizes of Syme's urethrotomy staff, and I shall later have occasion to refer to this.

Early in the course of my surgical education I was introduced by my old teacher, the late Sir Hector Cameron, to Lister's straight metal bougies. I was given to understand that Lister originally devised them for dilating penile strictures; but I had many opportunities of observing Cameron using them for strictures in the usual situation—the region of the bulb—in cases where difficulty had been experienced with the curved instruments. In such cases the passage of the straight instrument opened the way for the comparatively easy introduction of the latter. I quickly adopted this practice, and for a longish period of years now I have been in the habit of employing the straight bougies when required, in all difficult cases.

From conversations with my colleagues it would seem that straight metal bougies are not widely if at all used by British surgeons. That assumption is strengthened by the statement of a leading firm of instrument makers, as well as by the absence of the instruments from such of the London catalogues as I have been able to consult.

Description

By "straight" bougies I do not mean the straight conical instrument size 0-2, included in the set of curved bougies, and known to everyone. The instruments to which I refer form a separate set of twelve, ranging from