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OCTOBER

1939

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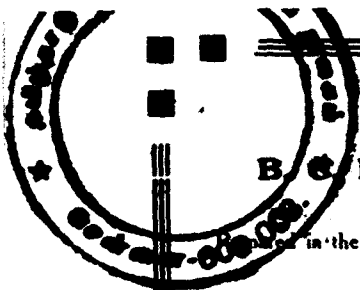
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Vol. VI] OCTOBER 1939 [No. 10

The Use of Senses in Clinical Diagnosis

BY

DR. D. SRINIVASAN, L.M.P.

I SHALL confine throughout my attention to the training and use of the unaided sense. Just as over-refinement or an excess of education may blunt the natural faculty of the child so a very good number of instrumental aid may blunt the primary faculties of the general practitioner. Before we proceed further, I should explain myself fully that I am fully aware of the very many advantages, which a physician gets from pathologists and radiologists. But however we are drifting along with an idea that we could afford to dispense with some, if not whole of our observation. It is my earnest wish that we should consider in turn sight, touch, hearing, smell. Some of their opportunities in clinical work and some of the ways in which the efficiency of each may be improved. I do not dare even for a moment think that we can wholly dispense with them, but we might use them in cases where our natural faculty fails. For example we send cough cases irrespective of its nature to be X-rayed. It should be admitted that it is a good thing to do things systematically and it is suitable for the hospital practice. In private practice considering the expenses incurred thereby we should avoid such procedure. After all it may be a case of annoying habitual coughs of children which cause no alarm except to the inexperienced mother. The art of medicine is largely the art of

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noticing. We need to cultivate that faculty to diagnose. One should be proud of diagnosing the cases clinically without resorting often to instrumental aids.

Sight

Setting aside the information learnt from others the diagnosis begins the moment the patient comes within view. It is better to take mental notes of age, physique, stature, complexion, expression, temperament, and in some cases the peculiarities, deformities of the patient and specific surface evidence of disease. This may be called physiognomy of the disease. Among the more striking physiognomies we include some of the following diseases.

1. Mitral facies with its malar hyperaemia and dark crimson lips. (Care to be borne in mind that modern women use such cosmetics.) Its varying tints of purple in advanced failure and Icterus in enlargement of the liver.
2. Hippocratic facies of peritonitis with sharp nose and hollow eyes.
3. Risus Sardonius in Tetanus.
4. The broad, thick-lipped face of myxoedema with tinted cheeks, though sometimes it may be mistaken for mitral facies.
5. Anxious face of hyper-thyroidism with prominent eyes and bulging neck.
6. Lemon tint of Pernicious anaemia which may simulate cancer stomach. In one, the body appears to be well nourished and in the other wasted.
7. The brick-red face of polycythaemia.
8. Reddish nose of alcoholism.
9. Drooping lids and wrinkles of the forehead of Tabes.
10. Parkinsonian mask of Paralysis agitans with its characteristic gait.
11. Uncomfortable lack of expression of Encephalitis lethargica.

12. The greenish brown of chronic obstructive jaundice.
13. The dirty brown pallor of anaemia.
14. Clubbed fingers of chronic Pulmonary disease.
15. Steppage, Drop foot, gait of Peripheral neuritis.
16. Spastic gait of paraplegia. Hemiplegia can never be mistaken.

In acute cases there are countless accessory phenomena for the eye to observe such as:

1. Labial Herpes and active alae nasi of Pneumonia.
2. Rose spots in Enteric and in grave cases picking up of bed clothes.
3. Stocker's sign of meningeal irritation.
4. Petichae of the blood diseases and infective endocarditis.
5. Transverse grooves of the nails suggesting recent origin of the pulmonary disease.
6. Fixed rigidities of meningitis in advanced cases and unwillingness on the part of the patient to turn his head hither and thither.
7. Adoption of knee elbow position in a case of pericarditis in Rheumatic children.

Touch

We fail in palpation through lack of the art of adjustment. It is neither necessary nor useful to examine roughly or forcibly. We may lose the abnormalities only if we are hasty. One may miss the conditions in hurrying the palpation with finger tips alone.

1. The texture and quality of myxoedema
2. Slight oedema of the Emphysema or other deep suppuration is a worthy discovery and it requires expectant thumb and forefinger.
3. The anal fissure so often the cause of misleading and widely distributed pain can be appreciated by the forefinger.

4. Other minor degrees of rigidity of the abdomen can be appreciated only if we palpate with flat hand and not fingertips. Finger tip palpation has no place in examining the abdomen unless we want to verify our findings of the palm.

5. Secondary deposits in the abdominal wall or a small fatty protrusion through linea alba.

6. The spleen so useful in many diagnosis and so often missed in its lesser degrees of enlargement may escape our notice through using our finger tips instead of the margin of the index finger or palpating too deeply or too lightly.

7. Thrills and rubs appreciating the water-hammer pulse and the feeling of the temperature over the inflamed area or joint may escape attention.

8. Lastly in gynaecological practice, we may not detect any abnormalities in the hidden darkness of the pelvis. If we are less conversant of the precision in palpation.

Hearing

One would note by the unaided sense of hearing almost unconsciously and if more detailed attention is paid we could increase its value. For example, we could collect the various varieties of cough and its diagnostic significance.

1. Short, dry painful unproductive cough of lobar Pneumonia (early stages).

2. Noisy effortful cough with the production of sticky mucus in Bronchitis accompanied by loud Rhonchi.

3. Revolting, hacking, morning pharyngeal cough in chronic pharyngitis.

4. Annoying habit cough of children.

5. Painful, Voiceless cough of laryngeal disease.

6. Brassy cough of thoracic aneurysm.

7. Phthisical cough which is difficult to be described although it has quite definite features. It is not so effortful as Bronchitis in early cases but late advanced cases reduce like that of chronic Bronchitis but unattended by Rhonchus.

8. Unmistakable paroxysm of whooping cough with its expiratory efforts.

9. Foreign body in the Bronchus or abscess of the lung may give rise to the severe and prolonged Paroxysms similar to that of Phthisis.

Then we can note the altered respiratory sounds.

1. Grunting in expiration and inverted Rhythm of Pneumonia.

2. Stertorous Breathing and puffed cheek in cerebral Haemorrhage.

3. Sibilant wheezing and prolonged expiratory Phase of Bronchial asthma.

4. Cheyne stokes Rhythm of advanced renal and cardiac disease.

5. Death rattle due to loss of cough reflex and accumulation in the pharynx and trachea and falling of the tongue backward.

Smell

The diagnostic smells can be described under four headings.

1. The smell of the patient noted in conditions in which we are unable to assign to the aroma of any particular excretion. The sweat of Phthisis, Typhoid, Rheumatism and Small-pox are very characteristic even though they differ in quality.

2. The unpleasant breath of Pyorrhea alveolaris, alveolar abscess and antral suppuration are sickening.

3. In the case of Pulmonary abscess and gangrene lung the expectoration will be putrid. Uraemic odor has somewhat fishy qualities which could be found out by constant practice.

4. Acetone odour of Diabetes can never be mistaken. These are the only few examples which would take us a long way in arriving at a correct diagnosis along with other clinical materials. It is not possible to enumerate the value of our senses and the article is written with a view to suggest that it is the duty imposed on us to develop these senses for the advantage of both the patient and the doctor.

Protein in the Treatment of Nephritis

BY

J. D. S. CAMERON, M.D., F.R.C.P.

(From the *Clinical Journal*, September '39, condensed.)

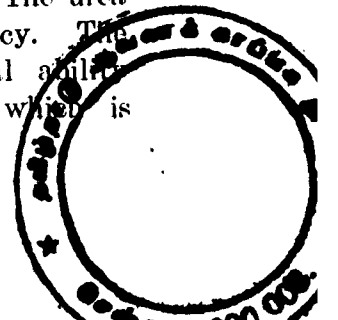
Following Bright, up to recent times, the treatment of acute nephritis was to give the patient only milk which was 'easily digested, and easily dealt with by the kidney.' Since then, however, there has been a fear of protein in the diet of all stages of nephritis. Complete protein starvation has taken the place of milk in the treatment of acute nephritis. Izod Bennet (1935) says: "Protein cannot be given without throwing work on the kidneys..... Kidney rest has to be effected by keeping the patient for days, and weeks, on practically a starvation diet.... This applies particularly to acute nephritis, for not only is it impossible to supply sufficient protein for maintenance without calling on the kidney for a considerable amount of work, but even the excretion of water can, with advantage, be restricted to the necessary minimum." Unfortunately this view has been generally accepted, and the treatment of acute nephritis at the early stage has consisted in administering less than 1½ pints of fluid daily, permitting in this fluid orange juice and glucose, but absolutely no protein (van Noorden, 1903). Even milk has been forbidden. Cow's milk contains 3·4 per cent protein, consisting of 80 per cent caseinogen and 20 per cent lactalbumin. In caseinogen we have every essential amino-acid except cystine, and this is provided in lactalbumin. Consequently milk provides every amino-acid required to replace the tissue-protein broken down by wear and tear. In the starvation treatment, now adopted, no essential amino-acids are given, and consequently the tissue-proteins are being broken down without being replaced. This must result in deterioration of the body's general state, and lowering of its resistance to infection. How important the latter is will be realized when the streptococcal cause of nephritis is recalled, and also the frequency as cause of death of streptococcal infection, such as pericarditis and

peritonitis. Further, as a result of the breakdown of the body's protein from wear and tear, urea is produced in the same way as from the ingested protein. Even if we starve the patient of protein, his kidney is still asked to excrete urea. By the present treatment, therefore, we render the patient more liable to infection, and yet we do not spare the kidney, which has to excrete as much urea as when a limited amount of protein is being permitted for tissue replacement. A series of experiments I have carried out indicate that up to 1 pint of milk can be taken daily without increasing the amount of urea the kidney is called upon to excrete.

Most of the recent work on nephritis has been to ascertain what nephritogenic action, if any, high protein-feeding has on the kidney. Many experiments go to show that there is no rise in the blood pressure, and only a beneficial change in the general condition of the patient.

Though much impressed with the results, I have hesitated to apply such revolutionary treatment to my patients. My treatment has been a compromise—keeping the protein diet as high as possible consistent with the return of kidney function. The general condition of the patient has thus been maintained at the highest possible level, return of kidney-efficiency has been stimulated, and yet the ability of the kidney has never been overstepped. At the onset fluid intake has been restricted, to two pints daily. Half of this has been provided as fruit juice and glucose but one pint of milk has also been given right from the beginning of the disease. The nitrogenous excretion was not increased above the endogenous level, while the high essential amino-acid content of the milk allows for a considerable replacement of broken down tissue.

As soon as diuresis appears, and with it diminution of the very acute signs—haematuria and blood casts—the caloric value of the diet is increased by adding further fats and carbohydrates, but no addition of protein is yet permitted. The urea concentration range is used as a test of renal efficiency. The protein intake is pushed to the limit of functional ability determined by the test. An outline of the scheme which is followed is given below:



Treatment of Acute Nephritis.

- 8 A.M. 5 oz. milk.
- 10 A.M. 5 oz. glucose fruit juice mixture.
- 12 noon 5 oz. milk.
- 2 P.M. 5 oz. glucose fruit juice mixture.
- 4 P.M. 5 oz. milk.
- 6 P.M. 5 oz. glucose fruit juice mixture.
- 8 P.M. 5 oz. milk.

During night 5 oz. glucose fruit juice mixture.

(The glucose fruit juice mixture is a 30 per cent. solution of glucose in water with the juice of 1 or 2 oranges or lemons added to each pint for flavouring purposes.)

With improvement the milk can be wholly or partly substituted by milk and cream mixture, while bread and butter, Benger's food, arrow-root, or other light cereals may be added.

With urea range maximum 1.5–2 per cent place on diet containing 50 gm. of protein. When the urea concentration range shows a maximum ability of 2.5 per cent. up to 75 gm. protein can be given; with rise in maximum to 3 per cent. up to 95 gm. protein; a maximum of 3.5 per cent or over permits of up to 120 gm. of protein.

Complete recovery frequently occurs in the acute stage of nephritis; Or the condition may pass on to the *second stage*, characterized by albuminuria, fall in the protein content of the blood, and tendency to oedema. Now, there is no hypertension and no impairment of kidney function. For purposes of treatment nephrosis may be considered with this stage, as in nephrosis the above characteristics are present. Until recently the massive albuminuria has been regarded as an indication for cutting out protein from the diet. As a result the plasma protein-content falls still further, the tendency to oedema is increased and the resistance to infection is reduced almost to *nil*. As a consequence of this treatment the prognosis at this stage was early death from the hydraemia or intercurrent infection. The work of Epstein (1914–1926) on nephrosis was revolutionary, and now this stage is being treated with a high portein diet of 100 gm. per day or over. The albumin loss in

the urine is compensated, and the plasma protein is maintained because of fresh synthesis from the essential amino-acids of the diet. As long as the plasma protein content is thus maintained above the critical level of 5 gm. per cent. and the serum albumin is kept up above 2.0 gm. per cent., oedema no longer occurs at this stage. Further, with this high portein diet the general condition of the patient is kept up, his resistance to infection is increased, and the development of the hypochromic type of anaemia is prevented. We still have the large white kidney, but no longer the large white man—large because of his oedema, and white because of his anaemia. For this, credit must be given to Epstein, who made the greatest advance in kidney disease since the days of Richard Bright.

Certain objections have been raised to this regimen.

1. "No patient in bed will eat 100 gm. of protein." No patient need be kept in bed at this stage. With this regimen the oedema will be kept at bay, and the general condition and resistance will be normal. The only abnormality will be the albuminuria which we have now agreed to ignore. With the patient doing his day's work as he should be, there will be no difficulty in his consuming the prescribed minimum of 100 gm. of protein.

2. "Protein is an expensive foodstuff"—especially in the form it is required here, i.e., biologically first-class protein. Economically protein diet, in that it ensures a useful citizen for a longer number of years.

3. "If salt is withdrawn from the diet protein is unpalatable." There is no need for the complete withdrawal of salt when the patient is on a high protein diet. The salt-restricted diet is called for only in the presence of oedema. It is now generally agreed that the role of sodium chloride in the production of oedema is secondary to fall in the plasma protein content. While this is maintained above the critical level for oedema production the blood has no difficulty in holding its sodium; excess sodium does not pass to the tissues, and so it does not contribute to increased tissue fluid. Consequently, if we maintain the plasma protein content with a high protein diet, we need not cut off salt.

4. "With a high protein diet you are hastening the development of uraemia." Kidney function is not impaired, and consequently the complex group of substances likely to lead to uraemia are efficiently excreted. The experimental evidence which I have quoted is all against the view previously held that protein is detrimental to the kidney. Rather would I suggest that a high protein diet retards the development of uraemia. According to Mac-Adam (1935) "Often generalized oedema and albuminuria mean nothing more than protein starvation."

In the *third stage* of nephritis we enter a phase where the general condition of the patient and the kidney function have to be carefully balanced. Our focus must now return in part to the kidney. There we find fibrosis and sclerosis occurring in the glomeruli. As a result, the blood is cut off from the damaged glomerular membranes and so we now have diminution and even disappearance of the albuminuria; with this the plasma protein content is restored and naturally nephritic oedema disappears. But hypertension and renal failure appear, and as this latter advances nitrogenous constituents accumulate in the blood. High protein diet is no longer called for to prevent renal oedema, but we have still need to maintain the general condition of the patient, his resistance to disease and his blood at the maximum level. As high a protein diet as possible is therefore still advisable. The custom has been to cut out protein as far as possible from the diet. With the protein there was cut off a useful period from the patient's life. Mosenthal summarizes the position well: "The penalty of a too ardent restriction of the protein is that malnutrition and anaemia develop in such patients; a low protein diet pursued over a long time will result in invalidism and a fatal issue prematurely before renal insufficiency and the attendant retention uraemia would naturally close the picture An elevation of blood urea is not necessarily productive of any discomfort to the patient or of an immediate termination of life. These only develop when the urinary excretion products in the blood heap up to a very great extent and produce either acidosis or because the total quantity of urinary excretory products becomes so high their sum-total produces intoxication resulting in

retention, uraemia and death There is a long intermediate period before the final stage is reached If the proteins are curtailed at this time there will be an early development of malnutrition and anaemia Strongly indicated to allow at least a maintenance ration of at least 50 gm. of protein over and above their loss in albumin. I differ from Mosenthal only in one point. Fifty gm. of protein is too little. It is essential* that 70-80 gm. of protein be given at this stage. Mosenthal's remark has to be emphasized—there is a long intermediate period before the final stage is reached. During this intermediate period kidney function is moderately good and the resistance and general condition of the patient have to be maintained, so as to retard as long as possible the inevitable approach of kidney insufficiency. Remember also the protein-feeding does not hasten renal breakdown; that it may be a rise in blood urea is stimulant to kidney function. With these points in mind the necessity for a full protein intake at this stage will be evident.

The scheme I have adopted in the treatment of this stage is similar to that of acute nephritis. Maintain the protein intake proportionate to kidney efficiency. At the onset of this stage the patient is allowed 95 gm. of protein, then at intervals the urea concentration range is applied, and according to its findings the protein content of the diet is reduced down to 70 gm. of protein per day, but no further until the terminal stage is manifest. Thus the condition is maintained and the onset of uraemia is retarded. Only with uraemia imminent should the drastic reduction, of protein to 50 gm. daily take place. Probably at the stage of uraemia there is little point in restricting the diet. Rather should we allow the diet to be guided by the desires of the patient.

It may be that you prefer to be guided by the blood urea content. This can be a valuable guide, although at times it may be slightly misleading. It has to be emphasized that urea is not the cause of uraemia though its accumulation in the blood is a valuable index of its possible onset. As I have already pointed out, a moderate rise in blood urea may be stimulant to kidney function, and so should not be regarded as

an indication for protein reduction. Most of the American authorities regard the blood urea figure of 80 mg. per cent. as indication for protein intake reduction; up to that figure they consider an intake of 70-80 gm. as normal. Personally I prefer to be guided by the more accurate estimate of renal function, which is provided by the urea concentration range rather than by the blood urea.

So far I have used the term protein, and have given no indication of the kind. I have meant biologically first-class protein, i.e., protein which will provide as full as possible a content of the essential amino-acids with the smallest possible intake. We thus provide all the essential amino-acids without an over-intake of the protein. In biological value the animal proteins are much higher than the vegetable proteins, although a mixture of two raises the biological value of the latter. Cheese, egg, fish, meat and milk proteins have the highest biological values, and from these the protein diet of nephritic patients should be constructed.

In conclusion, there is no need to be afraid of protein in the treatment of any stage of nephritis. Only at the onset of acute nephritis and the terminal uraemic phase of chronic nephritis is it possibly justifiable to reduce protein intake to the minimum. Protein should be provided at all stages as biologically first-class protein in order to maintain the general condition of the patient, which at most stages of nephritis requires more attention than the kidney condition. Protein starvation will kill the patient sooner than protein excess.

Warning notice to Registered Medical Practitioners

As a number of cases of advertisement by registered medical practitioners, in the lay press and by means of hand bills, have come before the Madras Medical Council in recent months, the Council has, at its last meeting, held on the 17th April, 1939 decided to warn all registered medical practitioners that all kinds of advertisement—including even the opening of private institutions, inviting laymen to attend functions connected therewith and publication of same in lay papers—by registered medical practitioners will be considered as advertisement under section 6 of the WARNING NOTICE published by the Medical Council, and will be dealt with accordingly.

(Sd.) N. M. WILSON,

Major-General, I.M.S.,

President, Madras Medical Council.

The Indications for Digitalis Therapy

(From the Practitioner, Oct. 39)

It is only in particular circumstances that real benefit follows the use of digitalis. When symptoms of myocardial insufficiency exist and are made manifest by obvious dyspnoea, dependent oedema, increased venous pressure and congestion of the hepatic, pulmonary or peripheral circulation, then digitalis is likely to be helpful. Its use in the absence of such symptoms finds little or no support in clinical experience. Everyone will agree that congestive heart failure is the all-important indication for the use of digitalis.

It is less commonly realized that the rate of the pulse is of little or no consequence in forming an opinion as to whether digitalis is indicated or not. Tachycardia is often of reflex or nervous origin and, occurring during the course of active tuberculosis, septicaemia, pneumonia, thyrotoxicosis, or in anxiety

states, it is often a measure of the degree of toxæmia or of the emotional disturbance. Digitalis is not indicated merely because a heart is fast. It is illogical to attempt to interfere with a heart adjusted to the body's immediate requirements. On the other hand, if congestive failure is present or appears imminent, then digitalis is likely to be of benefit.

Digitalis is also indicated in that form of cardiac distress spoken of as left ventricular failure, in which dyspnoea predominates and in which peripheral œdema is minimal. It is in these patients that its powers of prevention of further incapacity are often so remarkable. Minor degrees of dyspnoea—particularly in sufferers from hypertension—are often eased by suitable maintenance dosage. Rapid and complete digitalization is of particular benefit in the paroxysmal arrhythmias but it has apparently little power to prevent further attacks. When the origin of a peripheral œdema is obscure, digitalis in adequate doses may be employed as a therapeutic test. Finally, careful digitalization is of the utmost value in the stage preceding the use of quinidine.

These indications for the use of digitalis are well established. In such conditions, the drug may be expected to produce results of value. It is, however, still common to find it prescribed in various states in which it can be of no real benefit, and in which increasing evidence points to a deleterious effect on the circulation as a whole. It should be realized that harm may result from its inappropriate use. The routine use of digitalis increases the mortality in lobar pneumonia, is believed to increase the post-operative death rate in thyrotoxicosis, and handicaps recovery in the peripheral circulatory failure of shock and collapse.

The Three-Dye Treatment of Burns

(From the Practitioner, Oct. 1939)

The two chief dangers in cases of severe burns or scalding are shock and infection; the former due to reaction from the wounded area on the central nervous system, and the latter to coagulation by the action of heat. The ideal treatment therefore is one that will prevent the occurrence of these two sequelæ, and the three-dye method, as described by J. D. Devine (Medical Journal of Australia, June 24, 1939, 26, 924) would seem to meet the requirements. The mixture used consisted of a 1 per cent. aqueous solution of gentian violet and of brilliant green, and a 0.1 per cent. solution of neutral acriflavine. The gentian violet has a specific antiseptic action against Gram-positive organisms and also possesses an analgesic action which usually brings local relief from pain within a few minutes and passes a flexible eschar to form over the burnt area. Brilliant green and neutral acriflavine both have a specific antiseptic action against Gram-positive organisms. The solution is stable and can therefore be kept in readiness for use in factories—it should be swabbed over the burnt area and no dressing applied; also no previous cleaning-up should be attempted. When a large area of skin is involved a preliminary injection of morphine may be given if necessary to relieve the central pain, but as a rule the local analgesic action of the three-dye mixture is sufficient. Blisters on the burnt area should be snipped and the dead skin removed; the site is then dabbed, painted or sprayed with the mixture, a second application being made half an hour later if necessary. No anæsthetic is necessary during this procedure, and no dressing is applied, as tanning begins immediately after the application. Delayed blisters appearing within a few days of the accident should be snipped, the dead skin removed, and the mixture re-applied. Severe cases of burning should be hospitalized and the injured area protected by a cradle; ambulatory patients should be instructed to keep the clothing away from the injured area as much as possible. A comparison of the results

obtained by this method of treatment and those procured with the usual tannic-acid treatment showed that the three-dye method possesses the advantages of (1) producing a more pliable coagulum with only one or two applications, (2) an analgesic action which relieves the pain very rapidly, (3) the powerful antiseptic action of the three substances, and (4) the cheapness and stability of the mixture. Disadvantages are its staining properties and, when used for babies or small children, the coagulum may be too thick and crack at the edges.

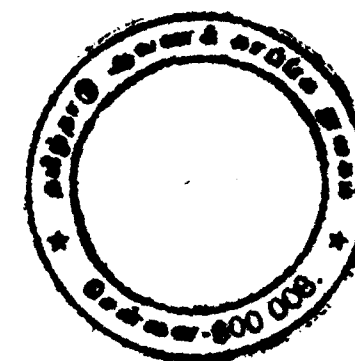
Vitamin C in Heart Failure

Investigations by Abbasy on the excretion of vitamin C in man, writes William Evans, M. D., in *the Lancet* for February, 1938, have shown that the volume of urine increases significantly after the administration of ascorbic acid. Any preparation thus capable of inducing diuresis in subjects that show neither oedema nor any manifestations of fluid retention, might be expected to produce a greater diuretic effect in those presenting anasarca from heart failure. I decided, therefore, to submit vitamin C to a controlled clinical trial in patients with heart failure.

The Experiment. Eight patients who had oedema due to congestive heart failure and one who had oedema of unknown aetiology were kept in bed under standard hospital conditions during and for some days preceding the period of observation. Stabilized fluid intake and output values were reached before each trial period began. Vitamin C was then dispensed as redoxon tablets, 3 to 6 tablets daily. The resultant diuresis was compared in each patient with that produced by established diuretics such as digitalis, ammonium chloride and theobromine.

Results. Vitamin C administration was followed by increased urinary output in all of the patients. In two patients the increase was slight, in four it was either moderate or considerable, and in three cases it was great. When compared

with the other diuretics, it was found to be as efficient as ammonium chloride during one observation period, but less efficient during two other periods. It was more efficient than theobromine during one period, and less during another. It proved to be as efficient as digitalis during one period, and more efficient during six others. When a quantitative was made of the excess of urinary output over fluid intake in the 9 patients over a period of 173 days, it was found that vitamin C induced greater diuresis than digitalis but less than theobromine, doretin, and ammonium chloride. In each of three patients where heart failure had occurred with auricular fibrillation, vitamin C induced diuresis actually in excess of that produced by digitalis although never with the same degree of clinical improvement nor with reduction of the ventricular rate. These results, apportioning to vitamin C a diuretic property, direct attention to the need of providing an adequate supply of vitamin C for all patients with heart failure. In order to insure a constant state of vitamin C saturation in heart failure, it is probably enough, if redoxon is not administered, to include in the patient's diminished fluid intake an adequate proportion of lemon and orange juice.



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OF



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(REGISTERED)

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NOVEMBER

1939

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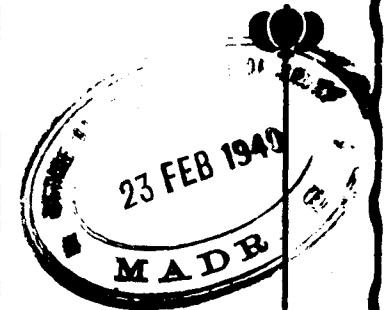
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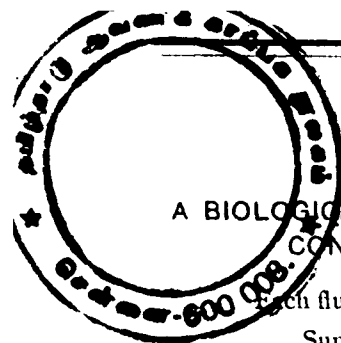
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FOR CIRCULATION AMONGST MEMBERS ONLY

Vol. VI]

NOVEMBER 1939

[No. 11

Notes on the Treatment of Asthma

BY

DR. D. A. WILLIAMS, M.D., B.Sc. (Cardiff).

(From Clinical Journal, Oct. 1939)

OF the drugs used in the treatment of Asthma, ephedrine is probably the commonest, and with proper guidance considerable benefit results from its use. In those patients who have only mild attacks, in those who take it infrequently, or in those who are taking it for the first time, the usual dose of $\frac{1}{2}$ gr. is apt to be followed by unpleasant symptoms such as trembling, palpitation, sweating and nausea or vomiting. These are symptoms of over-dosage, and if in any way marked, subsequent doses should be reduced. On the other hand, in patients who are taking ephedrine regularly or have severe attacks of asthma, a $\frac{1}{2}$ grain dose is frequently insufficient and a grain or 2 grains is necessary. If 2 grs. of ephedrine fail to ease an attack, then adrenaline rather than further doses of ephedrine should be given. Besides being used for the relief of attacks this drug may be used for preventing attacks, particularly nocturnal attacks in children. Taken before going to sleep ephedrine will prevent attacks occurring at night. Here again the dose varies according to the severity of the attacks and the length of time the preparation has been used. In children this preventive effect, is accompanied by a hypnotic effect, but in adults, unless the patient goes to sleep before the drug takes effect, it is apt to cause sleeplessness. In adults,

therefore, special care must be taken that the ephedrine is taken just before going to sleep. If after taking ephedrine for some time the larger dose begin to lose effect, it should be discontinued and recommenced a few months later, when it will be found that the smaller doses will again be effective.

While ephedrine is probably the commonest drug in use, adrenaline by injection is undoubtedly the most efficient preparation in the treatment of an asthmatic attack. The patients whose attacks are not controlled by ephedrine or other measures should be instructed how to give themselves the injections. Adrenaline is safer than insulin and there is no addiction to it. The unpleasant effects of over-dosage, which are the same as those of ephedrine, are easily recognized by the patient, and subsequent doses can be suitably diminished. The usual dose is from 3 to 5 minims, but many patients find that 10 minims suits them best, while others may require 15 minims. As with ephedrine, the dose varies according to the severity of the attack, and the earlier in an attack it is given the greater its efficiency.

In *status asthmaticus* very large doses of adrenaline may be required. It is given at the rate of a minim per minute for a few hours if necessary. On some occasions we have had to give about 150 minims before the attacks were eased. The guide as to the maximum dosage is a sensation of the hair standing on end. While the injection is proceeding we frequently rub the patient's hair, and inquire if it feels as if it is beginning to stand on end. As soon as this occurs the injection is stopped, and in the vast majority of cases, the attack ceases. Occasionally, in a further two hours time from 5 to 10 minims of adrenaline may be necessary should wheeziness recur.

This method of treatment will relieve the majority of cases, but occasionally relief is not obtained, and then intravenous adrenaline is recommended by some writers. Not more than 3 minims and preferably only 1 minim should be given, as large doses are followed by severe shock. If used intravenously it is well to dilute the adrenaline considerably before use, as the effect of small doses can then be satisfactorily judged.

Should adrenaline fail after being tried for a few hours, or if the condition of the patient is getting steadily worse in spite of large doses, the next method of treatment, and one which we have frequently found life-saving in *status asthmaticus*, is rectal administration of a mixture of equal parts of olive-oil and ether. The usual dose is 6 oz. of the mixture, but we vary this, of course, according to the weights of the patients—between 5 oz. for a small person and about 7 oz. for a heavy person. The olive-oil and ether are thoroughly mixed, no cleansing enema is given, and about 20 minutes are allowed for its administration. Under this treatment the patient will become more restful and able to lie back propped up on pillows, expectoration becomes productive and breathing easier. In about a dozen cases in which we have tried the treatment the result has been dramatic. This treatment was first described in 1931 (Mytum, 1931), and further reports (Kahn, 1935; Gwathmey and McCormick, 1935) have confirmed its value and freedom from danger.

Intravenous euphyllin in doses of 0.24 gm. has also been recommended in *status asthmaticus* but in the few cases we have tried it we have found it disappointing.

Morphia appears to be given fairly frequently for all varieties of asthmatic attacks. Except in doses of gr. 16 it is a dangerous drug in asthma. Except when used in real emergency, addiction is more than a possibility. When used in *status asthmaticus* a dose of gr. 16 or $\frac{1}{4}$ may be of value for some cases, but in others a fatal result seems to be related to the administration, and therefore as a routine measure it should be avoided.

Another treatment frequently used for the attacks is inhalation of various medicaments from "vaporizers." We have found "Bronchovydin" (Francis Riddell, Ltd.) very helpful in many cases. It appears to be more helpful than ephedrin, and has no unpleasant after-effects. Its disadvantage is its slightly higher cost. The use of adrenaline 1:100 in "vaporizers" has, in our experience, been rather disappointing.

Regarding proprietary preparations for the relief of asthma we would give a warning. This is particularly important for those who are sensitive to aspirin. If they take the smallest dose of aspirin either by itself or combined with other drugs, a severe attack of asthma follows, and as many of the proprietary preparations contain aspirin, such patients should be careful in the trial of any new remedy. Some of the most severe attacks we have seen have followed the use of remedies containing aspirin unknown to the patient, although they were aware of their aspirin sensitivity. These cases also frequently show idiosyncrasy to iodides and to morphia. Nasal operations are badly tolerated by these patients, being usually followed by severe asthma. The prognosis in this group of asthmatics is distinctly worse than in other cases. In cases of asthma generally, nasal operations and tonsillectomy should be avoided unless there is a definite indication apart from the asthma, and, if decided upon operations should be avoided during the seasons of heavy pollination.

Breathing Exercises

Turning now to the non-specific forms of prevention of attacks, probably the best of the measures calculated to reduce their frequency is the use of special breathing exercises, such are described in a booklet published by the Asthma Research Council. These aim at the re-education of automatic movements of the diaphragm, at increasing the expiratory phase, and at relaxing spasmodically contracted muscles. The results published by Livingstone and Gillespie in 1935, showed that 20 per cent. are clinically cured while another 50 per cent. are improved, leaving 30 per cent. unimproved. If the results are further analysed it is found that of those in whom the asthma began under the age of 10 years, 30 per cent. are cured and another 50 per cent. improved.

It would therefore appear that in children this form of treatment should be particularly beneficial in the correction and prevention of chest deformities, as well as in reducing the frequency of attacks.

In the past much attention has been given to the nervous factor in asthma, and in the older text-books of medicine

asthma was defined as a neurotic affliction. The term "neurosis," however, is now omitted from its definition. It is usually agreed that an anxiety state or emotional disturbance can be an important factor in producing the attacks in patients who have had asthma. In general, in the treatment of asthma one must treat the patient with all his problems as well as the local complaint, but in our experience it is distinctly unusual to find the nervous element the main factor in etiology.

Desensitization

It was first suggested in 1910 by Meltzer that asthma might be an anaphylactic phenomenon, and that foods and inhalants might be the causes. Since that time the literature on this aspect has become enormous, and it is now generally recognized that asthma is an allergic reaction, and that it develops in those who come of an allergic stock. The study of its allergic familial incidence and the finding of particular antibodies in the blood of asthma patients (called atopic reagins) has put the theory on a firm foundation. The main treatment of every asthmatic patient should be directed at the finding and elimination from the diet and or from his environment, the various allergens concerned. Multisensitivity is almost the rule, and the asthmatic who is only sensitive to one substance, such as feathers, horse-hair or egg, is indeed fortunate. In general foods play a more important part in children than in adults but there is no hard and fast rule, and in our experience food sensitivities occur in most adults. In every asthmatic there is a tendency for the sensitivities to change, for new sensitivities to develop and for immunity to develop substances to which they were previously sensitive. Thus, if a person with asthma, as the result of elimination of certain foods or certain inhalants, becomes free from asthma for several years and later develops asthma again; his whole case must be completely reviewed, as new sensitivities may have developed and old sensitivities been lost. These cases are not infrequent and the subsequent results are good. Sometimes, of course, the recurrence is due to slackness on the part of the patient. In tracing various sensitivities the greatest help is obtained by taking a good history, and by careful observation of any dietary or environmental changes prior to the attacks.

Skin-testing, particularly when done by the intracutaneous method often gives considerable help, but too much reliance must not be put on this procedure. Skin tests are guides in the first approach to the treatment of an asthmatic patient. A negative skin test to a food which may later be proved to be the cause of the attacks is not infrequently found, and a positive skin test does not of necessity mean that the patient is actively sensitive to that substance. Still, these tests, particularly when taken in conjunction with the history, are very helpful.

Hospital treatment of asthmatics is of particular value in those who have frequent attacks and are almost continuously wheezy. Like all other asthmatics, they are better in hospital than at home. Freedom from attacks for a period gives them a chance to improve in themselves, and it is only during periods of freedom from attacks that the various methods of testing for sensitivities should be carried out.

The practice at Llandough Hospital is to put asthmatics in a room free from feathers and horse hair and on a diet excluding the foods *likely* to cause asthma—egg, wheat, milk and potato. When they are free from attacks, which may take a few weeks, foods are added one at a time at intervals of a few days and the effect of each addition is noted. Afterwards they are put on feathers and later on horse-hair. The effect of these various substances on the patient can thus be observed. In most cases of asthma, however, hospital treatment is not necessary, and in some cases not advisable, as it is better to study the patients under their home conditions than in a hospital.

The procedure at our Asthma Clinic is to take a history and carry out the skin tests. The case is then reviewed, and complete elimination of the foods and inhalants to which the person is *likely* to be sensitive is advised. The case is then seen again after about a month to six weeks and the effects of the elimination noted. If the patient has carried out the instructions and is better, then he carries on in exactly the same way for a few months. At the end of that time foods are re-added to the diet, one each week, and the effect of each

addition observed. If, on the other hand, the patient has carried out the instructions but is no better, and, as so often happens in these patients, house-dust is one of the allergens, desensitization with house-dust solution is carried out. While this is being done a careful watch on the diet is maintained, particularly in relation to further attacks of asthma. The difficulties with regard to desensitization are that although in a few cases a course of 12 to 24 weekly injections is sufficient, in other cases weekly or twice-weekly injections have to be given for one to two years. The maximum dose is that at which the patient keeps well, and the injections are discontinued by gradually lengthening the time between each injection.

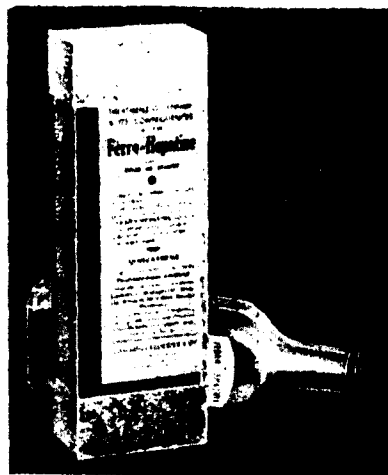
There are only two substances against which desensitization is commonly carried out. They are house-dust and pollen. The reason is that the results of elimination are much better than those of desensitization; all other allergens can, and should be eliminated.

It cannot be over-emphasized that by elimination is meant complete elimination. In an egg-sensitive child, for example, not only eggs, but all foods which contain eggs, such as cakes, pastries, ovaltine, etc., must be excluded completely from the diet.

With regard to "vaccine", there are a number of middle-aged asthmatics, with negative skin tests to whom vaccine appears beneficial.

Other forms of treatment, such as injections of calcium, peptone, liver-extract, milk, tuberculin, autohaemotherapy, N.A.B., etc., are very disappointing.

In conclusion I would say that of all the theories which have been advanced in the explanation of asthma, the allergic theory rests on the firmest foundations, and is the one on which treatment should be based.



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An Address by Dr. V. Krishna Row, L. M. & S.

Medical Officer, Presidency College, Madras

BEFORE

The Trichinopoly District Medical Association

ON

9-12-1939

National health policy to build a healthier and fitter Indian citizen.

Moving a formal resolution "that this meeting of the Trichy District Medical Association resolves to recommend to the various provincial Governments and premier political organisations to frame a national health policy, to build a healthier and physically fitter citizen and a Nation"—

Dr. Krishna Row, Medical Officer, Presidency College, pointed out that the present system of education including the Wardha Scheme of education, sponsored by Mahatmaji, has ignored the principle—*mens sana in corpore sano*. The medical and health services have been keen on *cure* of diseases rather than on *prevention*. 'To cure is the voice of the past, to prevent the divine whisper of to-day'. The health reports of the municipalities and the Governments show a distressing state of health of the population. The common diseases of childhood are the eye-troubles, dental diseases, ear-ache, tonsillitis, stomach-ache, heart disorders, and venereal diseases too. It is these same diseases that are responsible for the rejection of the Army recruits by 37% in later adult life, 60 to 70% of children are sick, unhealthy, under-fed, undeveloped, and ailing from one disease or another. Nearly 53% of the College students are suffering from the same physical defects. The percentage of students suffering from heart diseases, lung diseases, and excitable temperament are on the increase during the last 5 years. My research work into the chief causes of students' absence from College studies reveals that nearly 75% of them complain of remediable diseases, while 20% of them repeatedly complain of their sicknesses. The Army report for

1937 confirms that the percentage of physical defects is on the increase. The low average life of Indian, the high rates of infantile and maternal mortality (which are preventible), the low level of health and poor physique—all these do indicate that Indians have no national health policy to build a healthier and fitter citizen. The Indian leaders have been indifferent to this major pressing problem. The Madras Health Act has failed to tackle this question. A national health policy is as much an important and pressing problem, as are politics, prohibition, agriculture, and other beneficial reforms.

The aim of a national health policy is "to improve the health of the individual and the community life of the future, to insure a better second generation, and a still better third generation; and to promote a healthier and fitter Nation and race."

The main plans to execute a national health policy, to enable a citizen to be fit for any walk of life are:

1. Compulsory medical examination of school-children, to insure their health. It is the cheap ounce of prevention to spare the adoption of the costly pound of cure;
2. Compulsory physical training and exercises, as suits the child's physique, age and capacity with the objective of making them physically fit—"to stand the tests of peace and tasks of war"; and,
3. Nutrition policy for every child, so that he may have a reasonable opportunity of getting a satisfactory diet.

Other supplementary programmes to these three main schemes are:

- i. Slum clearance campaign as part of Health Minister's policy;
- ii. Collection of family budgets as part of Labour Minister's policy;
- iii. Legislation; and,
- iv. Co-operation of existing Insurance companies and existing health agencies.

The school health-programme for the health education of children that could be carried out without much expense and trouble by the educational and school managements are:

- i. to provide for the correction of physical defects;
- ii. to provide physical activities, suited, to the individual child;
- iii. to teach pupils health knowledge;
- iv. to train pupils to live hygienically while at school and outside; and,
- v. to arrange for hygienic conditions of teaching.

The present child welfare scheme is defective and it should be made more active, attractive, and to function more efficiently, so that its advice and service are available to every citizen, regardless of social, economic, or moral status. In this connection, a regular course of health education and teaching for candidates for medical degree should be made compulsory.

Schemes of medical and physical training and nutrition policy have been submitted to the various Governments by the author. I claim my schemes are practical, self-contained, self-supporting, and economic propositions, well worth consideration at the hands of the public and the leaders. The army has been made healthy and fit. Why not the civil population too? I appeal to the national pride in every man and woman to make efforts to place India in the forefront among Nations, physically fit and healthy, and to go forward with courage and confidence in our own ability to accomplish this great task of building a healthier and fitter India, than which there is nothing more important in our national life, for the "*onward march of a Nation depends upon the feet of little children*". I dare to say that within 5 years a healthier and physically stronger India would have been built, and the Provincial Governments and political organisations would have earned the gratitude of the nation.

A Method of Timing Heart Murmurs

BY

BERNARD FARFEL, M.D., HOUSTON, TEXAS.

It seems that many physicians have little difficulty in learning to recognize normal heart sounds or in detecting the presence of a cardiac murmur but often their determination of time of a murmur in the heart cycle is faulty. Cabot states that the commonest of all errors in diagnosis of diseases of the heart is the misinterpretation of systole for diastole.

In routine examinations, many physicians rely on the ear alone, calling on palpation or observation of the apex, carotid or radial impulse when in doubt. That present clinical procedure is not entirely satisfactory is borne out by the frequent errors every physician sees or makes himself. Mackenzie writes from his experience with recognized internists that many doctors never acquire the ability to time murmurs. Warfield, writing in Tice, points out the possibility of mistaking a seesaw murmur in mitral stenosis with regurgitation for a prolonged systolic murmur. It would be presumptuous to dwell on the importance of proper timing of murmurs for physical diagnosis.

The method I am about to describe requires none of the intricate types of apparatus that have been devised. It requires nothing that the physician does not ordinarily have at the bedside. My own experience with palpation coincident with auscultation has been one of difficulty in correlating the two sensations so as accurately to time the murmurs I hear. I felt that I would better be able to time the murmurs heard were I able to employ vision in conjunction with hearing, and I particularly sought some method which could be used in all cases. I have utilized the method to be described in numerous instances and have found it useful. I taught the method to several of my associates, with gratifying results.

Briefly, the following technic is employed: After I have taken the patient's blood pressure, I leave the cuff in place and set the mercury column at about midway between the systolic

and diastolic blood pressure readings. This is done so as to obtain good excursions of the column with each beat. If one listens to the normal heart, it will be found that the upward excursion of the mercury column is coincident with the second heart sound. In this way one has already established a point at which systole ends. Cabot teaches that the mistaking of systole for diastole would not occur if the physician were sure just when systole takes place. Knowing that the second heart sound and the impulse given to the mercury are coincidental, one should note whether the murmur in question immediately precedes this phenomenon, as would be true of a systolic murmur, or follows it, which would be the case with a diastolic murmur.

That the second sound is dependant on aortic tension is pointed out by Howell who quotes Williams work on animals in which he shows that the second sound disappeared as an animal bled to death and the heart failed to throw out a sufficient supply of blood to maintain aortic tension. That the sudden thrust upward of the mercury should occur at the moment when the second sound takes place may be at least partially explained physiologically. Best and Taylor describe the rebound of the distended aortic wall at the close of systole, causing the aortic valves to close and forcing the blood along to the periphery as well.

It will also be observed, in using the method described, that the period during which the mercury falls slightly, just prior to the sudden rise, will usually coincide fairly well with the interval between the first and second sounds, namely systole. The technic given offers another means of timing murmurs. This communication is forwarded in the hope that a method that has proved useful to many of my associates and myself may be of some aid to others.

(J. A. M. A., 28th October, 1939).

Chronic Rheumatic Infection and Mental Illness

(*Indiana State Medical Assn. Journal, Indianapolis*)

Chronic rheumatic infection might be the etiologic factor in certain cases of long-standing mental illness. In the necropsy service of the Central State Hospital of Indianapolis, Bruetsch and Bahr observed that, in some subjects with old rheumatic changes on the heart valves, gross lesions in the form of small or large infarctions were present in the brain and at times in other organs. In most of these instances the clinical record did not give reference to a previous rheumatic infection and none of the patients had gone through an acute attack of rheumatic fever while an inmate of the institution. Particular attention was given to the presence of rheumatic valvular heart disease in the necropsies of 500 mental patients. Other forms of endocarditis, such as the subacute bacterial form, were ruled out by gross and microscopic examination. The anatomic investigation disclosed chronic rheumatic valvular disease to be present in 4 per cent. Microscopic examination of all the organs of these patients showed that the long continued rheumatic infection had involved not only the heart but also the brain and other organs, such as the kidneys, spleen and pancreas. The changes in the brain consisted of an obliterating rheumatic endarteritis of small and larger vessels having resulted in gross and microscopic infarctions and in numerous minute areas of incomplete softening (acellular areas). Small connective tissue scars originating from proliferating vessels and extending over several cortical cell layers were frequently observed. Glial nodules were occasionally seen in the cortex and in the white matter. Two patients with a psychosis of short duration had a rheumatic encephalitis. Some of the cases were diagnosed as dementia praecox, others as manic depression or as involutional and senile psychoses. In two cases the diagnosis was psychosis with cerebral arteriosclerosis because residual signs of a "stroke" were present. If the rheumatic infection produces brain lesions in childhood, mental deficiency may result.

Roentgen Therapy for Otitis Media

(*From Am. J. Roentgenol. and Rad. Therapy, Springfield*).

Brown and his co-workers state that the roentgen treatment of acute and chronic otitis media is rational because of all the body cells the lymphocytes are the most sensitive to the rays. Lymphocytic infiltration is a major and constant feature of inflammation and infection of the middle ear, and breaking down these cells relieves pressure within the cavity and thereby relieves pain. Roentgen irradiation also promotes phagocytosis, which progresses rapidly until the lymphocytes are almost entirely destroyed. The polymorphonuclears and eosinophils undergo disintegration somewhat less rapidly. In addition to this cellular destruction and phagocytosis, the x-rays are believed to liberate enzymes, anti-bodies and other unknown principles which also aid in the processes of autolysis and liquefaction. The technic that the authors employed has varied. At present they are using 85 kilovolts (peak), 5 milliamperes, 16 inch target-skin distance and 1 mm. of aluminium filter. They do not follow a hard and fast rule as far as dosage is concerned but take into consideration the severity or duration of the condition and the age of the patient. In mild cases in infants they have used from 50 to 60 roentgens and in young children and adults the dosage has varied from 60 to 100 roentgens. Their cases of acute catarrhal otitis media required only one treatment. In cases of acute purulent otitis from three to seven days elapsed between treatments, depending on the condition of the ear. Patients with chronic purulent otitis received treatments about ten days apart. In acute otitis media if the temperature was not more than 99.6 F., with bulging of the drum and obliteration of the short process, irradiation was not preceded by myringotomy. Only one of thirty-one cases of acute catarrhal otitis media required myringotomy following therapy and in this instance myringotomy had been refused by the parents and roentgen therapy was tried as the only resort. The majority of the cases were seen within the first twenty-four or forty-eight hours. The average number

of roentgens was 72.9 and the number of days required for the drum to return to normal was 3.15. Of eighteen cases of acute purulent otitis media myringotomy was performed in twelve, while spontaneous rupture of the drum membrane occurred in the other six within twenty-four hours of being seen. The duration of the symptoms before the first examination varied from three days to six hours. These patients received an average of 1.33 treatments, with an average 70 roentgens. The ears were dry and the drums were normal within an average of 8.16 days. Four patients required two treatments and one patient three treatments. None of the eight cases of chronic purulent otitis media with a history of an intermittent discharging ear of from four months to eight years, required myringotomy, the opening in the drum being of sufficient size to afford excellent drainage. Six patients received only one treatment, one received two treatments and one received three treatments. An average of 64.54 roentgens was given. The ears were dry within an average of 11.63 days. In nine of eleven cases not classified an initial roentgen treatment was given and the patient did not return for further observation, one was finally cured and one was afforded considerable relief. In conclusion the authors state that instead of mastoidectomy it now seems that not only will a short series of roentgen treatments suffice to cause an ear to become dry and free from pain, but hearing will be fairly normal in it. None of their cases have shown any complication following this mode of therapy.

The Trichinopoly District Medical Association

(Branch of the Indian Medical Association)

TEPPAKULAM, TRICHINOPOLY

Statement of Account for the month of August 1939

RECEIPTS			PAYMENTS		
	Rs.	A. P.		Rs.	A. P.
Cash in hand	...	3 14 0	Clerk's pay (July)	...	18 0 0
Cash at bank	...	336 6 9	Office-room rent	...	5 0 0
Members' Subscription	...	55 8 0	Printing Charges	...	33 2 0
Advertisement charges received	...	95 0 0	(Miscellany)	...	3 0 0
			Postage & Telegram	...	2 11 0
			Miscellaneous Exps.	...	0 6 0
			Bank charges on cheques	...	0 11 0
			Stationery	...	427 14 9
			Cash at bank	...	
TOTAL	...	490 12 9	TOTAL	...	490 12 9

N.B.—The cheque for Rs. 15 - from Messrs. Calcutta Publicity Service has not yet realised.

Statement of Account for the month of September 1939

Bank balance	...	427 14 9	Clerk's pay (August)	...	18 0 0
Members' Subscription	...	62 0 0	Office-room rent	...	5 0 0
Advertisement charges received	...	78 0 0	Miscellany Printing	...	27 11 0
Clerk K. R. Krishna-swamy's security deposit	...	50 0 0	Postage	...	7 0 0
Sale of old cycle	...	8 0 0	Stationery	...	1 1 0
			Cycle account	...	48 13 0
			Bank commission	...	0 12 0
			Miscellaneous Exps.	...	0 1 0
			Clerk K. Krishna-moorthy's security amount returned	...	50 0 0
			I. M. A. Subscription remitted	...	189 0 0
			Cash on hand	...	0 1 0
			Bank balance	...	278 7 9
TOTAL	...	625 14 9	TOTAL	...	625 14 9

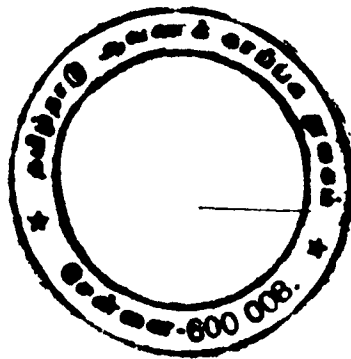
N.B.—The cheque drawn in favour of I.M.A. for Rs. 189 - has not yet been cashed.

Statement of account for the month of October 1939

RECEIPTS			PAYMENTS		
	Rs.	A. P.		Rs.	A. P.
Cash balance	...	0 1 0	Clerk's pay (September)	15	0 0
Cash in bank	...	278 7 9	Office-room rent	...	5 0 0
Members' Subscription.	46	8 0	Postage	...	3 5 0
Advertisement charges received	...	107 12 0	Stationery	...	1 4 0
			Cycle a/c	...	0 7 0
			Bank commission	...	0 4 0
			Miscellaneous Exps.	...	2 4 0
			Printing charges	...	3 0 0
			Cash on hand	...	1 7 0
			Cash in bank	...	400 13 9
TOTAL	...	432 12 9	TOTAL	...	432 12 9

N.B.—Cheque for Rs. 6/- received from Calcutta as advt. charges (from Calcutta Publicity Service) not yet realised.

T. N. SUBRAMANIAN,
Treasurer.



JL
on 21/9/39, 435MS
13.6.10-11

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