contraindication. Certainly from a practical point of view any such contraindications are non-existent, and I have been restrained in only one case—a heart case in which compensation was poorly established. From the cardiovascular point of view it is not apparent why organic disease of this system, provided it is well compensated, should contraindicate the use of convulsive therapy, even though the heart be recently weakened as in Case 2, in which malarial treatment had been given a short time before.

It is not easy to conceive of a method that will accurately estimate the increased work that is thrown on the diseased heart during the one or two minutes of the convulsion. At a very outside estimate, however, it should not exceed, say, one hour's heavy exercise (as indulged in many times over in the working day by a manual labourer with heart disease but seeking admission for a complaint originating in an altogether different system, both cardiovascular disorders being found accidentally and presumably existing for a considerable time before being discovered) or the day's work of a nurse (Case 4), with the considerable amount of physical strain entailed and the superimposition of a further strain from a hyperexcitable disposition extending over years on a heart presumably diseased. There is, however, the essential difference between the additional work imposed on the heart by normal effort and that endured from the cardiazol convulsion; for in the latter the increased work occurs under anoxaemic conditions, as during the convulsion the patient either does not breathe or takes at the most one or two short gasps when the clonic stage of the convulsion is nearing its end. That such conditions do undoubtedly affect the heart is shown in my previous paper, but the affection so resulting is of a temporary nature, though others have arrived at a different conclusion (Schmitt, 1939).

Summary

The main purpose of this paper is to demonstrate that cardiovascular disorders of even a severe degree—provided they are well compensated, and whether existing alone or in the presence of advancing years and of diseases of other systems—are not contraindications to the employment of convulsive therapy. Further, electrocardiographic examination in these cases provides no criteria indicative of how well or how badly the patient will stand up to the convulsion.

I am indebted to Dr. A. D. Briggs, superintendent, Dr. A. Dick, visiting psychiatrist, Southern General Hospital, Glasgow, and to Dr. A. MacNiven, superintendent, Glasgow Royal Mental Hospital, for permission to publish these cases. I am also indebted to Dr. R. G. Lendrum, Western Infirmary, Glasgow, for his kind collaboration in connexion with the electrocardiography.

REFERENCES

- Good, R. (1940). *J. ment. Sci.*, **86**, 260.
Schmitt, D. (1939). *Z. ges. Neurol. Psychiat.*, **166**, 108.

R. Chevillard (*Thèse de Paris*, 1940, No. 314), who records twenty-two cases, one of which is original, states that owing to failure to diagnose correctly the extent of an injury a foreign body may penetrate the orbit and remain there for years without being recognized. The fact that an intra-orbital foreign body may remain unsuspected depends on its nature, size, degree of asepsis, and, most of all, on its location. As x-ray examination is the only certain means of revealing the presence of an intra-orbital foreign body, every injury to the face requires a radiographic examination whenever the penetration of a foreign body is possible, even if penetration appears unlikely. The symptoms which, after a variable time, reveal the presence of a hitherto unsuspected foreign body are sepsis or motor paralysis. When these symptoms appear extraction of the foreign body is urgent. The operation of choice is orbitotomy.

THE BENZYL BENZOATE TREATMENT OF SCABIES

BY

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Scabies, which in normal times is regarded as a trivial disease, has been raised to a position of considerable importance during the past year owing to the outbreak of hostilities. The massing of large numbers of troops under cramped and unsanitary conditions, the evacuation of children from slum areas, and the overcrowded and unhygienic sleeping arrangements in public air-raid shelters provide perfect conditions for a wide dissemination of *acarus* infection.

According to the official history, half of the admissions to hospital from the armies in the field during the war of 1914–18 were due to lack of cleanliness and to infestation by vermin. Scabies was by far the commonest of these diseases. Uncomplicated scabies was found to be rare, nine-tenths of the total number of cases showing the presence of boils, secondary infected sores, or pyogenic dermatitis. It is also recognized that the scratching of the skin caused by the intense itching gave impetus to the spread of lice-borne infections such as trench fever, relapsing fever, and typhus.

Search for a Non-irritant Sarcopicide

A constant search for an effective non-irritant sarcopicide has continued for many years, and though a large number of drugs have been recommended, sulphur in its various forms has continued to be widely used. This agent, especially in the form of the ointment, is dirty and tedious in application, and often produces a dermatitis worse than the disease it is intended to cure. Indeed, the use of sulphur has coloured almost the entire field of the therapeutics of scabies, and all the well-known methods of treatment have this substance as their basis. The sodium thiosulphate–hydrochloric acid method as advocated by Huber (1938) depends on the reduction of the thiosulphate by the acid, with the production of a fine deposit of sulphur on the skin. Six applications are necessary to produce a cure. McKenna (1933) recommends "mitigal," a proprietary sulphur-containing lotion, as the safest treatment, and states that a cure can be obtained in ten days. The kathiolan of Ehlers-Marcussan, which is said to bring about a cure in twenty-four hours, is recommended by Roxburgh (1936) and others. These methods, however, as with all sulphur remedies, often cause a disagreeable and resistant sulphur dermatitis, as well as being uncertain in their action.

The Benzyl Benzoate Method

Although many sulphur-free remedies, such as creolin, rotenone, and others, have been used, the only one to achieve certainty of action together with ease and rapidity of application is the benzyl benzoate method introduced by Kissmeyer (1937). This treatment, which has been adopted as a general routine in Denmark, has failed to achieve in this country the recognition that its qualities merit.

In a series of 100 cases of scabies occurring in a naval establishment, 80% of which were infected and of longer than two weeks' duration, treatment by one application of benzyl benzoate lotion proved completely successful. No unpleasant after-effects were noted, except a slight generalized burning sensation, which usually lasted for about fifteen minutes. In 3 cases of gross pyodermitis

due to a scabies infection of very long duration the application was repeated after an interval of four days owing to a recurrence of nocturnal itching. This resulted in the disappearance of all irritation, and a rapid response of the septic skin condition to simple treatment. Except for a slight increase of the burning sensation no unpleasant effects were noticed. In none of the cases was there any irritation of the skin following this treatment, and relief from itching was invariably instantaneous. All cases treated were examined at least twice during the following two weeks, during which time no relapses occurred.

In order to investigate the effect of repeated applications of benzyl benzoate on the skin the following test was performed. The lotion was applied to a small area of the left forearm of several healthy patients, and repeated at intervals of five days during the next four weeks. In none of these controls did any form of local or general irritation of the skin occur.

The Lotion.—This consists of equal parts of benzyl benzoate, industrial spirit, and soft soap (*B.P.*, 1932). In the original formula isopropyl alcohol was used as the vehicle. It has been found that substitution of this by industrial methylated spirit does not detract in any way from the efficacy of the treatment, and the reduction in cost is considerable. The amount of this lotion used in the complete treatment of one case is $1\frac{1}{2}$ oz.

Method

Anoint the body with soft soap, rubbing it with special care into those parts commonly attacked by the acarus (i.e., the groins, inner aspects of thighs, abdomen, axillae, wrists, and between the fingers). Then soak for ten minutes in a bath at 100° F., the patient rubbing the affected areas thoroughly during this time. While the body is still wet apply the lotion vigorously for five minutes by means of a pig-bristle shaving-brush. (This must be done very thoroughly, and all parts must receive attention, particular care being paid to the infected areas.) Allow the lotion, and the lather produced, to dry on the skin, and again apply the lotion vigorously for a further five minutes, then dry the body with a towel.

The patient now resumes the clothes worn before treatment. Twenty-four hours later a bath is taken and clean clothes are put on. The discarded underclothing and the bedclothes used by the patient should be sterilized by boiling. It is important that the close contacts of the patient—that is, other members of the family or, in the case of a large establishment, those sleeping in close proximity—should be treated on the same day, even though they show no sign of the disease.

It must be emphasized that those portions of the skin showing severe pyogenic infection must be treated as energetically as the unabraded areas.

Commentary

It will be seen that this mode of treatment presents many advantages over others in general use at the present time. The patient is ambulant throughout, and is subjected to a minimum of inconvenience and discomfort, no matter how severe the infection. The sarcopticidal action of benzyl benzoate is immediate and reliable, and no post-therapeutic irritation of the skin results. Pyodermitis due to infected scabies can be thoroughly treated and rapidly cured. The whole treatment is completed in thirty minutes, at the small cost of fourpence per head.

In the small series of cases described this mode of treatment has proved to be entirely satisfactory and far in advance of any of the methods I have previously used.

I have no hesitation in recommending it as safe, reliable, and rapid.

I am indebted to Surgeon Captain J. Bruce Ronaldson, R.N.V.R., for permission to publish this paper, and to Leading Sick-berth Attendant W. Haythornthwaite for his assistance.

REFERENCES

- Huber, A. (1938). *Lancet*, 1, 285.
Kissmeyer, A. (1937). *Ibid.*, 1, 21.
McKenna, R. W. (1933). *Diseases of the Skin*, London.
Roxburgh, A. C. (1936). *Common Skin Diseases*, London.

A ONE-LAYER OPERATION FOR INGUINAL HERNIA

BY

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The excellent paper by Mr. J. F. O'Connor on the treatment of hernia which appeared in the *Journal* of July 27 (p. 113) has encouraged me to write these notes. The simple operation described here for the radical cure of inguinal hernia has been performed by me in many hundred cases during the past thirty years, and in only two have I been able to trace authentic evidence of recurrence. This does not mean that there have not been other recurrences. The lack of evidence of these may be due partly to the fact that there was no follow-up of after-histories and partly to the fact that I never stayed in any one locality for long until I went to Singapore. There I worked for thirteen years, and most of my inguinal hernia operations were performed on local residents, European and Asiatic, some of the hernias being of large size; yet here no recurrences except the two mentioned above were brought to my notice.

Theories of the Cause of Inguinal Hernia

As several theories of the cause of inguinal hernia are held and various operations have been described for its cure, no standard operation has yet been adopted for it, so that these notes may at least provoke thought and criticism.

When, during the last war, I was for a time in charge of the hernia cases in the Cambridge Hospital, Aldershot, many of the admissions were for recurrent inguinal hernia. This was remarkable, as the patients were all strong healthy young recruits, and yet most of the recurrences followed only a few weeks after a radical operation for hernia. A second operation revealed no trace of suture material. In all of them an attempt seems to have been made to restore the valve-like mechanics of the part. And in these favourable and straightforward cases it is hardly likely that shortness of convalescence need be considered as contributory to recurrence.

During development certain structures travel out of the abdominal cavity through gaps or holes in the parietes which normally become shut or closed; but in man development seems commonly to become arrested, and it is generally at these weak gaps or holes in the abdominal wall that hernia occurs. The abdominal wall may be compared not inaptly to a rubber tyre, the covering corresponding to the abdominal muscles and the canvas lining to the fibrous aponeuroses and fasciae. However thick a tyre, the rubber covering will not prevent a "blow-out" if the canvas lining is defective or damaged; and similarly the abdominal muscles, however strong, will not prevent sooner or later a hernia if the fibrous layers or rings are defective. In support of this are several indisputable facts. Hernia is commoner in men than in women, though male muscles are stronger than female.