LUPUS VULGARIS: A PLEA FOR EARLY AND ORGANIZED TREATMENT.*

BY

RUPERT HALLAM, M.D.,

PHYSICIAN IN CHARGE OF THE SKIN DEPARTMENT, ROYAL INFIRMARY,
SHEFFIELD.

COINCIDENTLY with other Northern European countries, Britain has a considerable number of its inhabitants who suffer from tuberculous infections of the skin. When compared with other skin infections the incidence of lupus vulgaris is low, but the extreme chronicity, the tendency to spread, and the unsightliness of its ravages make the disease, as its name implies, particularly abhorrent to all. Essentially a disease of poverty, a factor which handicaps severely any effort to assist the unfortunate sufferers, the complaint presents at the present time almost insuperable difficulties to those who are responsible for its treatment.

At the time of a reorganization of hospital service in this country it does not appear inopportune to consider whether any further effort can profitably be made to mitigate the difficulty. The first point to determine is whether efficient remedies do exist, and if so, secondly, to what extent they are available for the patients. It is outside the scope of this paper to give a detailed description of the modern methods of treating lupus vulgaris, but a brief review of the subject is necessary if the difficulties of the situation are to be appreciated.

It is clear from the pathology of the complaint that it is not a superficial disease. Sampson Handley and others have pointed out that it is a disease of the lymphatics, not limited to the skin, for both the superficial fat and the deep fascia are implicated, except in the very earliest lesions. The infection may be exogenous in origin; in that case the bacillus is implanted directly on to the skin—for example, lupus on the fingers or hand, which is met with occasionally in pathologists, farmers, and butchers—or, more frequently, is conveyed to the mucous membrane of the nose by the fingers, which have been contaminated by infected dust. The second mode of infection is by continuity from bone or gland, or by the blood stream. The resistance of the patient against the infection is often low, for, as previously pointed out, lupus vulgaris is a disease of the poor.

All are agreed, no matter where the site of the lesion may be, that treatment in the early stage is of paramount importance; also, that there is no single remedy which may be relied upon to effect a cure in all cases. A further difficulty is the fact that few, if any, are sufficiently expert to be able to give the appropriate treatment to every class of case. As an instance, an examination of the nose and mouth by a competent rhinologist will reveal that a large proportion (probably 50 per cent.) have some tuberculous infiltration of the mucous membrane. This is mentioned in most textbooks, nevertheless the examination is frequently dispensed with. Yet mucous membrane lesions call for treatment equally with those which are present on the skin. If they are not treated they are a constant source of reinfection of the skin. Again, it is an advantage for the patient, and also for economic reasons, that some of the earlier lesions should be excised by an experienced surgeon. This applies particularly to patients who are unable to attend regularly for the long periods necessitated by the other methods of treatment, such as Finsen light, caustics, etc.

Excision of patches of lupus, with or without subsequent skin grafting, was advocated many years ago by Lang of Vienna, who attained great proficiency in this branch of surgery. It has been practised by Sampson Handley and other surgeons in this country, and also by Thibaut in France. Recent experience has convinced me that excision is the method of choice in many early lesions, but

unfortunately patients usually apply for treatment when the disease has advanced beyond this stage; consequently it is necessary to have recourse to other methods, such as diathermy, Finsen light, Kromayer light, various caustic applications, etc. Furthermore, each case must be treated individually. Some patches will heal after repeated application of acid nitrate of mercury, others will not, and require destruction by diathermy. Local application of Finsen light is a proved remedy, and it is regrettable that such a limited use is made of it in this country, for in selected cases the result of the treatment is admirable. It is generally stated that the method is impracticable on the ground of expense, yet with a Finsen-Reyn lamp costing from £160 to £200 to install, about ten patients can be treated daily. The application requires, however, the whole attention of a specially trained nurse.

In addition to the remedies already mentioned it is essential that all patients should have the advantage of frequent exposures of carbon arc light to the whole skin surface. After six years' experience of this treatment in a large number of cases I have no hesitation in asserting that it is indispensable in the treatment of tuberculosis of the skin. At the same time I find it necessary to state equally dogmatically that general arc light exposures must not be relied upon to cure patients without the help of local treatment. In the summer months advantage may be taken of the natural sunlight. Three years ago arrangements were made whereby the lupus patients in the Royal Infirmary, Sheffield, could attend, when weather permitted, various centres in the neighbourhood for exposure to sunlight. The necessities, such as screens, deck chairs, rugs, and lavatory accommodation, were obtained conveniently in the grounds of the tuberculosis sanatoriums, convalescent homes, and municipal hospitals outside the city. This out-of-doors treatment educates the patients to appreciate the advantage of open air and sunlight. They enjoy the change, become much more deeply bronzed than when exposed to artificial light, and the results are also superior.

The merits of gold preparations, tuberculin injections, and sundry other remedies I do not propose to discuss. It is sufficiently obvious that the armamentarium of those who are responsible for the treatment of the disease is necessarily extensive and costly. Also, that it is available for only a fraction of the number who suffer from the disease. This accounts in no small measure for the number of hopelessly infected patients who seek relief sporadically at the out-patient departments of our hospitals.

An equally important factor is the delay which ensues before treatment is sought. This is due largely to the following reasons: mistakes in diagnosis; the application of futile remedies such as ointments and fomentations; the apathy of the patients or their parents. The disease is painless, the patients are poor, and all too frequently incline to a policy of *laissez-faire*. On the other hand, some are anxious for treatment, but are not able to afford the time off work or the necessary travelling expenses. This delay leads to serious consequences, for the lesions gradually increase in depth and at the periphery. The time required for the treatment is thus not only proportionately greater, but also more costly. Many of these neglected cases attend the out-patient departments of the voluntary hospitals for periods of years. This entails much expenditure of time and patience of the nursing and medical staff.

From the age of 6 to 14 a child undergoes a systematic medical inspection at school, and afterwards, no matter how poor, has the opportunity of obtaining medical advice; but, as the following analysis of cases attending the Royal Infirmary, Sheffield, shows, the present conditions are deplorable.

Analysis of 113 Cases of Lupus Vulgaris attending for Treatment during Three Years—May, 1926, to May, 1929.

<i>Sex:</i>			
Males	...	...	73
Females	...	...	70
<i>Location:</i>			
Residing within the borough of Sheffield	...	...	75
" within 10 miles of Sheffield	...	...	29
" between 10 and 20 miles outside Sheffield	...	...	31
" between 20 and 30 miles outside Sheffield	...	...	5
" beyond 30 miles outside Sheffield	...	...	2

* Read in the Section of Dermatology at the Annual Meeting of the British Medical Association, Manchester, 1929.

This analysis indicates that almost half the total number of patients live outside the city, consequently regular attendance for treatment is in many cases prohibitive owing to the travelling expense.

Age of Patients.		Number.
Decade.		
1-10	...	18
10-20	...	64
20-30	...	27
30-40	...	19
40-50	...	8
50-60	...	4
Over 60	...	3

In the following table an attempt has been made to classify the cases according to the extent of the disease present when the patient first applied for treatment.

1. A stage in which there was a reasonable hope of a cure being accomplished ... 34
2. A stage in which the prospects of a cure were doubtful but perhaps possible under good conditions ... 85
3. A stage in which a cure was impossible ... 19
- Unclassified ... 5

It indicates that more than half the patients apply for treatment when the disease is already in an advanced stage.

Duration of the Disease on Admission of Patients for Treatment.		Patients who had either no treatment or only ointment before Admission.	Treatment by Caustics before Admission.	Surgical, Diathermy, Light, X Rays before Admission.	No Record.
	No.	No.	No.	No.	No.
Less than 1 year	15	16	—	—	0
Between 1 and 2 yrs.	19	16	—	—	3
.. 2 and 3 ..	6	3	—	1	2
.. 3 and 4 ..	11	6	—	2	3
.. 4 and 5 ..	8	4	1	2	1
.. 5 and 6 ..	2	2	—	—	—
.. 6 and 7 ..	9	5	—	1	3
.. 7 and 8 ..	5	3	1	—	1
.. 8 and 9 ..	3	1	—	2	—
.. 9 and 10 ..	2	2	—	—	—
Over 10 years	52	14	3	26	9
Unclassified	10	—	—	—	—
Totals	143	72	5	34	22

It will be noted from the figures in the first two columns of this table that a large number of patients applied for treatment years after the commencement of the disease, without having had any treatment in the interval.

It is hardly necessary to stress the suffering which many of the patients endure, for every dermatologist is only too familiar with the terrible disfiguration of the face and limbs which may result from the spread of the disease. To many of the lay public the disease exists only in name, for lupus patients have difficulty in obtaining employment, and, conscious of the unsightliness of their deformity, are apt to seek seclusion.

For economic reasons it is desirable that all patients should be treated by the best available methods as soon as the disease is recognizable. To further this end I have ventured to submit the following suggestions, which for convenience may be dealt with under the following headings: (1) prophylaxis; (2) education of the medical and lay public; (3) establishment of treatment centres; and (4) systematic following up of cases.

Prophylaxis.

The value of prophylaxis in all varieties of tuberculous infection is universally recognized as an important social problem, largely concerned with the distribution of sufficient suitable food, the prevention of overcrowding, and the segregation of infected persons. These measures are, of course, equally applicable in the prevention of lupus vulgaris, and do not require further comment.

Education of the Medical and Lay Public.

Taking into consideration the abundance of material available for teaching purposes and the consistency in the appearance of the tuberculous lesions of the skin, there appears to be no adequate reason why the diagnosis should present any great difficulty. It does not seem to be too much to expect that every senior student should be able to recognize tuberculosis of the skin in the early stages, and, furthermore, that he should know the seriousness of the consequences if it be untreated. The increasing popularity of post-graduate instruction will no doubt tend to reduce such errors.

If practitioners and school medical officers consistently explain to the patients, or to their parents in the case of children, the disastrous results of neglected treatment, the public are likely to follow their advice, provided that facilities for treatment are obtainable.

Establishment of Treatment Centres.

The foundation of a special treatment centre similar to the world-famed Finsen Institute at Copenhagen would be of inestimable value to this country. Although one centre would be able to cope with only a limited number of cases, it would serve a further important purpose in acting as a stimulus to those who are interested in the treatment of the complaint; for new methods could be tried out systematically, approved treatment could be demonstrated, and advice given on the organization of smaller centres. Such an institute would naturally require to be well equipped and have an adequate staff, in order to enable a high standard of treatment to be carried out. In view of the complexity of the treatment, the building should preferably be attached to, or within easy reach of, one of the larger hospitals, in order that advantage might be taken of the services of the consultant staff. A few beds would be required for the use of patients undergoing operative treatment, but the ideal would not be attained unless there was, in addition, an annexe of, say, 100 beds situated either in the country or at the seaside, where part of the treatment would be carried out. The annexe would be constructed and maintained on the lines of a convalescent home; the cost per bed would therefore be considerably less than in the case of a general hospital. Again, as the patients would not be confined to bed, they could be employed advantageously in doing domestic work, gardening, and poultry farming, thus reducing the expenses still further. It is probable that the beds would be used more profitably if a relatively large number of patients had short spells of six to twelve weeks' institutional treatment, rather than if a comparatively small number monopolized them for long periods. If the annexe contained the number of beds suggested—that is, 100—it would, in addition, enable patients from smaller affiliated centres to have the advantage of convalescent treatment. Preference would, however, in all circumstances have to be given to cases in which there was a reasonable chance of a cure being obtained.

As already stated, an institution of this character could only deal with a small proportion of the cases in the country, but, in addition, it would serve equally important functions. If after a trial these anticipations were fulfilled, it would then be desirable to consider whether a more comprehensive scheme should be attempted—namely, an increase in number of these special lupus institutes, together with the formation of subcentres at some of the voluntary and municipal hospitals—and thus enable all cases of lupus, unless already too far advanced, to have a reasonable chance of being cured. Many of the larger voluntary hospitals are already more or less completely equipped for the treatment, and with an increase of staff could extend the service and give further facilities, such as evening clinics, for those employed during the daytime.

Systematic Following Up of Cases.

Although the majority of patients are anxious to avail themselves of treatment, others, usually for economic reasons, are irregular in their attendance; consequently no scheme of organized treatment would be complete unless travelling expenses were afforded to necessitous cases.

Added to which there should be a systematic following up of patients to encourage the delinquents, and also to ensure the early detection of any recurrent lesions.

In conclusion, I beg to point out that an admirable organization for the treatment of venereal disease already exists under the aegis of the Ministry of Health. That movement rescued this branch of medicine from the realms of chaos, and has proved of great service to the community. It seems justifiable, therefore, to ask that equal facilities should be given to a class of patients who are at least equally worthy of consideration.

DIFFERENT PREPARATIONS OF BISMUTH IN SYPHILIS THERAPY:

RATE OF ABSORPTION AS A GUIDE TO THEIR EMPLOYMENT.*

BY

SVEND LOMHOLT, M.D.,
COPENHAGEN.

BISMUTH is already adopted, only eight years after its introduction into syphilis therapy, by practically all syphilologists throughout the world as a substitute superior to mercury. It is obviously both more efficient and less toxic than this old remedy. Still there remain a few exceptions to this rule. Bismuth can be administered by intramuscular injection alone, as it is absorbed to a very small extent only through the skin and through the intestine. For these methods of administration resort must still be had to mercury. This rapid development of bismuth therapy has brought many hundreds of preparations on the market; it is therefore not easy for the doctor to make a right choice.

The following investigation is not intended to be an examination of a series of factory preparations, but merely a general outline, according to which the proper choice can be made.

Very little is known with regard to the characteristics of bismuth in its effects on a syphilitic organism and the syphilitic infection itself. The blood contains only very small quantities of bismuth (Levaditi et alii,^{1 2} Sei and Weise,¹⁸ Lomholt,^{4 7 8 9} Biro Istvan,¹⁰ Levy and Selter,¹¹ Grulhitz and Sultzberger,¹³ Leonard^{14 15 16}), probably so small that we can disregard a possible direct effect on the spirochaetes similar to that generally produced by disinfecting solutions of heavy metals *in vitro*. Levaditi^{1 2} has tried to give a specific explanation of this strong effect on the spirochaetes. He suspects the formation of a special compound of bismuth and the protein substances of the organism ("bismoxy"). He thinks that this compound possesses a particularly strong effect on the spirochaetes.

Though nothing definite is known about the characteristics of bismuth in its effects on the syphilitic infection, it is a well-established fact—obtained from clinical experience as well as from experiments on rabbits with syphilis—that a complete cure is attained only after a prolonged course of bismuth therapy. The best effect is obtained when large quantities of bismuth are introduced, creating a strong bismuth concentration in the organism. Of course, the concentration should never reach the point of intoxication, as this would only weaken the organism. Consequently the aim of the bismuth treatment must be to introduce into the organism the largest possible quantities without intoxication, maintaining thereby a strong saturation over a long period. Under bismuth treatment proper attention should be given to the fact that elimination of the metal is rather slow; consequently an intensive introduction of bismuth causes a rapid accumulation of the metal in the organism, and if continued for a long period will result in an intoxication.

Intensive bismuth treatment should not be continued very long. It may be borne well in the beginning, especially if the remedy used is one of slow absorption, but after some time the organism will be oversaturated and an

intoxication will appear. This fact is to be taken into account in planning the scheme of treatment. The old scheme of intermittent treatment (Fournier) permits the use of larger doses than does the continuous method without interruption, proposed by some modern authors. The intermittent scheme has given undeniably excellent results, and its rhythmic character may be considered to agree well with the rhythm of vital processes. The essential thing in all bismuth treatment must be to secure a uniform and regular absorption. Otherwise a sudden strong absorption may bring a dangerous intoxication; or, on the contrary, a lack of absorption may cause a deficiency of the therapeutic effect. For this very reason the internal and percutaneous administration of bismuth must be left out of the question. Ointments may give an absorption of bismuth, but this is always weak and very irregular (Klauder,¹⁹ Oelze,²⁰ Giemsa,²¹ Engelhardt²⁶). Applied on injured skin bismuth may be absorbed to quite a large extent—a fact well known since ancient times from the treatment of extensive burns with bismuth ointments. Even fatal accidents have occurred. Internal administration produces also a very weak absorption (Engelhardt²⁶), probably due to the fact that insoluble BiOCl is formed in the stomach, owing to the effect of HCl upon the bismuth compound in question. If no HCl is present, but only organic acids such as lactic acid, complex compounds of bismuth may be formed and absorbed in the same way as the many alkaline bismuth tartrates used in bismuth therapy from its very beginning (Levaditi,¹ Gérard and Daunic,²² Perrin and Ducas²³). Consequently bismuth must be used in the form of injections.

The *intravenous* injection gives decidedly the quickest and most regular absorption, but clinical experience has shown that it is rather dangerous, several cases of death having been reported. Besides, it is not especially efficient. The bismuth injected leaves the blood stream quickly. Sei and Weise³ found in rabbits that after one hour the bismuth content in the blood was reduced from 11.5 mg. per 100 c.cm. to 0.17 mg. Accordingly the elimination was found by most authors (Jeanselme,²⁹ Engelhardt²⁶) to set in and increase quickly, to reach its maximum and fall to a minimum again in rather a short time. In consequence of this rapid passage of bismuth frequent injections are necessary, preferably every day, which makes this treatment rather troublesome. Besides, the treatment gives rise to a particular strong neuralgia in the trigeminal nerve, which occurs immediately after the injection. Intravenous treatment has now been given up even by its original adherents (Pautrier).

Subcutaneous injection cannot be recommended. It causes greater pain than the intramuscular method, and abscesses occur more frequently; also the absorption is slower and more irregular.

Intramuscular injection remains the treatment to be preferred. The single injections should be given in the upper and outer part of the gluteal muscle. The number of preparations made for this purpose is most embarrassing, and it must be admitted that it is possible to obtain quite good results with practically all of them. At a very early date Levaditi¹ pointed out that even quite small quantities of bismuth were able to give a marked antisymphilitic effect. But this is not the same as a maximum effect, and our aim must always be to find just that preparation and that method of treatment which secures the very best result to the patients. The investigation of these problems is simplified by the fact that the antisymphilitic effect is due to the bismuth ion itself—or rather to the bismuthyl ion. As regards the different bismuth preparations, their bismuth metallic content is alone of importance. However, an exception is provided by certain bismuth compounds, in which the bismuth is bound so firmly that the organism is unable to dissociate it (for example, triphenylbismuth, Giemsa²⁶). With these the therapeutic effect will prove to be less than would otherwise be expected. The essential thing must always be to have a preparation with an absolutely regular and uniform absorption rate. These two things depend to a large extent on another quality—that of the rate of absorption.

If a certain quantity of bismuth is injected into a muscle, and if it is not absorbed immediately, the surrounding

* Read in opening a discussion in the Section of Venereal Diseases at the Annual Meeting of the British Medical Association, Manchester, 1929.