

Notes on the carbolic treatment of leprosy / by J.M. Fleming.

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NOTES
ON THE
CARBOLIC TREATMENT
OF
LEPROSY.

BY

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[*Reprinted from the Indian Medical Gazette, with some additional cases
and remarks.*]

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NOTES

ON THE

CARBOLIC TREATMENT OF LEPROSY.

[Reprinted from the "*Indian Medical Gazette*."]

THE black leprosy, variously styled by European writers as Elephantiasis Græcorum, Lepra tuberculata, Lepra anæsthetica, &c., and known to the natives of India as *juzám*, or *rakka-pití*, is generally looked upon as *quite incurable*. This, I think, is the universal opinion of the natives of this country, and that it is generally shared in by European practitioners, seems sufficiently shewn by the leprosy report of 1867.

Some time ago it occurred to me to try the effects of that invaluable medicinal agent, carbolic acid, and the results have been so favourable, that I think I need not hesitate in making them generally known. The cure, as might be anticipated from the nature of the disease, is a *slow one*, and it is not always easy to get patients to continue long enough under treatment. I believe, however, that, with perseverance, it will be found *infallible*, at least in cases that have not advanced beyond the first stage.

I leave the following cases to speak for themselves, arranging them in the order in which they came under treatment:—

I.—*Madár Khán*, æt. 36, Mussulman, admitted into Khandwa Dispensary, 17th March 1869.

His entire skin is thickened and quite insensible; his ankles and feet very much swollen, perfectly black, and covered with bullæ; toes beginning to ulcerate; nose flattened.

24th March.—For the past week has been taking Liq. arsenicalis. State, as on admission.

Liq. arsenicalis to be discontinued, and to have—

Acid Carbolic	...	... 3i
Ol. Lini	...	... 3ii

applied freely over all parts of his body night and morning.

4th April.—Bullæ have now entirely disappeared; the swelling of his feet and ankles is very much reduced, and the blackness has entirely given way to the natural brown of his skin. Complains only of *anæsthesia*, which seems to be complete over his whole body.

9th April.—A small bulla forming over outer right ankle.

13th April.—Bulla burst, giving exit to a little yellowish fluid.

15th April.—A fair amount of sensibility in skin, except below the elbows and knees. In every way very much improved.

19th April.—Left Hospital without leave two days ago, and has not returned.

Thus in about three weeks a very marked improvement had taken place, and sensibility had returned to a considerable part of the surface.

II.—A second case came under treatment on 24th May 1869, but did not remain sufficiently long in Hospital to admit of any marked improvement.

III.—*Múnda*, æt. 35, Kumhár.

1st March 1870.—Came to Hospital this morning, stating that he had suffered from leprosy (*rakka-pití*) for many

years, and had, on account of it, been discharged from his regiment about $4\frac{1}{2}$ years ago.

Entire body covered with large, elevated, tubercular patches of a dark, almost black, colour; face very much swollen; fingers and toes swollen, stiff, and bent—has not the power of straightening them; complains of constant running of water from his eyes, and of aching in limbs. Entire surface almost devoid of sensibility. In a very emaciated condition, and complains of loss of appetite and general malaise. Bowels confined.

To have *kalá dáná* ʒi at once, and carbolic acid ʒi, sweet oil ʒii, to be rubbed over entire body night and morning.

6th March.—Skin looks brighter; is able slightly to move his fingers.

15th March.—Patches seem reduced in size, and of a lighter colour than formerly. Complains of a pricking sensation all over his body, which is so severe at night as to prevent sleep. General health and mobility of fingers much improved. Appetite much better. Wishes increased diet.

To continue carbolic acid and oil, and to have opium, gr. i at bed-time. Mutton diet.

26th March.—Is now free from the pricking sensation. Opium to be discontinued.

1st April.—Much better. Can now move his fingers *well*, and has no pricking of skin. Soles of feet tender and chapped, and nails of great toes black and loose.

Simple ointment to be applied to feet, and carbolic acid and oil continued.

5th April.—Looks better, but complains of some pain in his joints.

To have tinct. opii ʒxx at bed-time, and continue applications.

11th April.—To wash his body thoroughly with soap and water every morning before applying the oil.

15th April.—Improving ; water from eyes stopped.

26th April.—Every way much improved.

Omit tinct. opii.

6th May.—Eruption has almost disappeared. Is quite fat, and expresses himself as *perfectly well*. The only signs of the disease are now a slight swelling of the toes and fingers and bridge of the nose, and imperfect sensibility of the extremities. Nails of great toes have come off, and new, healthy ones are growing.

22nd June.—Has now perfect sensibility as far as the knees and elbows, but not beyond. All appearances of leprosy are completely gone, with the exception of some swelling of the toes and fingers, and of the bridge of the nose, and a slight eruption on the upper lip.

To continue applications.

18th July.—Has been shewn to several persons, who can detect no signs of leprosy about him. There is still, however, slight swelling of toes and fingers and a little discolouration of bridge of nose, and he has a tingling sensation in his hands when he claps them briskly.

1st August.—In every respect quite well, and is anxious to return to his regiment. Has not applied the carbolic acid since 26th July.

His skin is now of a bright bronzed colour and perfectly free from eruption of any kind ; all tenderness and swelling of toes and fingers are gone, and he appears to have perfect sensibility over the whole surface of his body and limbs. Healthy nails have grown on his toes.

6th August.—Discharged quite well.

Duration of Treatment.—Five months.

IV.—*Abraham Isáji*, æt. 50, Jew ; came from Bombay for treatment, having heard of the preceding case.

4th June 1870.—States that he has been suffering from leprosy for one year, and that his friends have excluded him

rom his house, and obliged him to live in a hut by himself. Has tried various remedies, European (administered by a native doctor) and native, without benefit.

Present condition.—A thin, emaciated man, of a sallow complexion, and stone deaf (has to be communicated with by writing). There is a ring of *rose-coloured raised spots* round his right nipple, another similar ring *above* the left nipple, and a number of *raised spots* on his chest and shoulders. His eyebrows are very much swollen, giving him a peculiar frowning (*leonine*) appearance [Leontiasis, *Dá-ul-Asad*]; there are numerous *raised tubercular spots* on his forehead and cheeks, another patch on back of neck, very much raised, a number of smaller ones on back and loins, and a few on front of legs.

Altogether a very marked sample of the first stage of *true leprosy*.

Treatment.—To have his body thoroughly washed daily with soap and warm water, and to apply, night and morning, a mixture of carbolic acid 3i, oil 3vii.

8th June.—A very marked improvement has taken place: the raised spots round the right nipple are now represented only by a *slight rosy colour* of the skin, all *swelling* having completely disappeared; the swelling of his forehead is also considerably less.

22nd June.—The spots on breast have now all but disappeared; those on forehead are much reduced in size, and are assuming a dull colour; there is also a considerable, though not so marked, improvement in the raised spots on the back of the neck.

18th July.—One of the spots above left nipple, and another on left shoulder, which assumed a black colour a few days ago, have become abraded; the large raised spots on the back of the neck are now of a deep black colour, and those on the eyebrows are ash-grey. Most of the smaller spots

on different parts of the body have completely disappeared, and his general appearance is very much improved.

Abraded spots to be smeared with simple ointment, and carbolic acid and oil continued to other parts of surface.

21st July.—Presents a singular appearance: all the *larger raised spots* on the chest, legs, eyebrows and back of neck, are now of a *perfectly black colour*, as if they had been carefully pencilled over with *nitrate of silver*. They are not in the slightest degree painful, and the skin over them is dry and inclined to peel off. In a few parts it has actually peeled off, leaving either a narrow white cicatrix or a superficial wound covered with healthy-looking granulations. Continue applications.

23rd July.—His hands are now becoming *black*, while the cuticle is peeling off the parts formerly blackened, and leaving a healthy granulating surface below. He is well pleased with the progress he has made, and, yesterday, wrote to his wife in Bombay stating that he expected to return home quite well in another month.

1st August.—The parts from which the cuticle has peeled off present a peculiar mottled appearance, white, dotted with minute black points, as if a slight deposit of black had occurred in a perfectly colourless cutis.

18th August.—The blackness of the skin is gradually disappearing; the swelling of the eyebrows and neck is much reduced; and he is getting much fatter.

23rd August.—Blackness almost gone; considers himself much better.

29th August.—Applied pure carbolic acid to three of the most marked spots above left breast and on neck.

30th August.—Does not complain of any pain from the application of the carbolic acid. It has blackened the parts touched, the cuticle of which seems inclined to peel off. Three points on forehead similarly touched.

3rd September.—Cuticle at points touched with pure carbolic acid on 29th ultimo has come off, leaving a healthy surface; swelling all but gone. Skin blackened at points touched on 30th. Looks well, and has become quite fat. Is anxious, however, to return to his home in Bombay, as he says that his wife is ill.

This patient left hospital on 5th September all but well, and I have since heard that he continues to progress favourably.

V.—*Govind, Káchi*, æt. 45. This man was sent into jail on 11th July 1870 as a debtor prisoner, and as the other prisoners objected to his being near them, I obtained permission to keep him in the dispensary.

His condition on admission was as follows:—

11th July 1870.—Has been suffering from leprosy for four years. Is not aware of any of his family having been affected. Both hands very much swollen, and fingers severely ulcerated; feet also swollen; and face and whole anterior surface of body covered with prominent tubercles.

He was put on the carbolic acid treatment, and on 1st August the ulcerated state of his fingers had completely gone, only a little swelling remaining, and there was also a marked improvement in the eruption over his body.

On that date he obtained his discharge from prison and left the hospital.

IN the two following cases the *internal* administration of carbolic acid was pushed as far as was considered safe, but did not seem to have any direct effect upon the disease, the progress being at much the same rate as when it was only employed *externally*.

VI.—*Ghulám Rasûl Khàn*, Mussulman, æt. 29, a prisoner in Khandwa Jail.

20th August 1870.—States that he has been suffering from leprosy for about two years.

Present condition.—Whole of chest and abdomen covered with circular, red, raised spots; a considerable number also on back, neck, arms and knees, across bridge of nose and under eyes; ears swollen and lobulated; general insensibility of surface; bowels constipated.

Treatment.—As in former cases.

2nd September.—Considerable improvement. The patches are becoming smaller, and the healthy skin between them is extending.

To continue *external* application of carbolic acid and oil, and have, in addition,—

Carbolic Acid	...	...	℥i
Glycerine	...	...	3ii

internally three times a day.

10th September.—Very much improved. The patches are smaller and becoming darker in colour, they are now nearly level with the skin. States that sensibility is returning to his body.

Carbolic acid increased to ℥ii three times a day.

25th September.—Improvement continues. The larger patches on the chest and back are breaking up into groups of smaller ones. Slight symptoms of dysentery.

Discontinue carbolic acid internally.

1st October.—Carbolic acid resumed in doses of ℥iii three times a day.

28th October.—Increased to ℥iv.

14th November.—Face quite clear of patches. Those on body very small and rapidly fading.

30th November.—All but well; and symptoms of the disease have disappeared from his face, ears, neck, arms and legs, and only a few slightly discoloured spots remain on his chest.

12th December.—Released from jail.

18th December.—Came to dispensary and stated that his friends were highly delighted to see the improvement in his condition. Was advised to continue the external application of the carbolic acid for some time, and took a supply with him as he was leaving the place.

VII.—*Miriam*, Jewess, æt. 22; has suffered from leprosy for five years. Her husband has made her live by herself for nearly two years. Has had two children—a boy, aged 7 years, and a girl, aged 20 months. The latter is with her and is still being nursed; she is a weak, puny child, but shews no signs of leprosy.

5th September 1870.—*Present condition*.—Feet very much swollen and ulcerated; edges of the ulcer of a bright red colour. States that small white pimples are continually forming, which after a time become red, and then ulcerate at the summit, and the ulcers shew no tendency to heal. Similar ulcers on the hands, but not so numerous. Skin of nose and chin and under eyes very much swollen, and covered with a papular eruption. Lobes of ears very much thickened and tuberculated.

Treatment.—As in former cases.

6th September.—To have carbolic acid ℥i, glycerine ℥ii, *internally*, three times a day, and to continue the *external* application.

10th September.—Carbolic acid increased to ℥ii, three times a day.

23rd September.—Left leg swollen and painful.

To discontinue application of carbolic acid and oil, and apply fomentations.

1st October.—Swelling gone.

To resume application of carbolic acid and oil, and have ℥iii *internally*.

15th October.—Very much improved in all respects. Face is almost free from eruption, and ulcers on feet and hands are rapidly healing.

22nd October.—Carbolic acid increased to *m.i.v* three times a day.

30th November.—General appearance very much improved, but complains of some griping and looseness of bowels.

Carbolic acid to be discontinued *internally*, but continued *externally*.

15th December.—Dysenteric symptoms quite gone. Considers herself in every way very much improved.

1st January 1871.—Only a few very small spots remain on face, the lobulated appearance of the ears is nearly gone, and the ulcers on the feet and hands are quite healed, leaving only a few slightly elevated cicatrices.

31st January.—Made an out-door patient. All that now remains of the disease is a slight swelling, and discolouration of the hands and feet. In other respects quite well.

Continued to attend for a short time as an out-door patient and then left for her home in Bombay.

ADDITIONAL CASES AND REMARKS.

Since the above was published, eight additional cases have come under treatment, two of which have been conducted to a successful termination, *viz.* —

VIII.—*Nàdir Shàh*, Afghàn, æt. 22.

18th November 1870.—Applied at the Khandwa Dispensary for treatment. States that his father died from leprosy, and that he has suffered from it from childhood.

Present condition.—A thin, emaciated man. Walks with a slouching gait, with his body bent to right side, and cheek resting on left shoulder. Features pinched; almost entire body covered with *dark papular eruption*; fingers ulcerated and crooked, cannot straighten them; large sores on both

legs; toes severely ulcerated, so that he can hardly walk—goes about leaning on a stick. Eruption very marked under both eyes, and the skin under left eye so much puckered and contracted as to cause complete eversion of lower lid. No whiskers or beard; eyebrows and eyelashes completely gone, and eyes red and ferretty; tongue very much thickened, and covered with papular eruption; palate covered with a similar eruption, and perforated by a hole large enough to admit the point of the little finger; voice so harsh and nasal, that it is difficult to understand what he says.

To be placed under carbolic acid treatment.

After attending for a few days, he left Khandwa, and, shortly afterwards, made his appearance at the Burhànpùr Branch Dispensary, where the treatment was continued by the Sub-Assistant Surgeon.

20th March 1871.—Returned to Khandwa. Eruption has now all but disappeared from his body and limbs, but continues slightly on his hands, so that he can only partially straighten his fingers. There is also a large and deep ulcer on lower surface of left great toe. Face very much improved, and eversion of eyelid considerably less. Mouth and palate as on first admission.

Carbolic acid treatment to be steadily continued.

23rd March.—

R Carbolic Acid ...	... ʒi
Glycerin ...	... ʒi

To be applied night and morning with a small piece of sponge to his tongue and palate.

28th March.—A patch on left side of chest, another on back of left shoulder, and a third on left thigh have become black.

3rd April.—Healthy granulation has been set up in the palate, and the opening is now nearly closed. Eruption has

disappeared from the tongue, except a little along the centre and at the tip. Voice much clearer. Eversion of eyelid considerably less ; feet quite well ; hands well, except right fore-finger, which is still superficially ulcerated and crooked. Cuticle has peeled off blackened patches, leaving a healthy surface.

10th April.—Right wrist has been pretty severely blistered owing to his sitting in the sun after applying the carbolic acid and oil. The skin is now peeling off and leaving a quite healthy surface. He bears himself much more erect, and his voice is almost natural. Fissure in palate seems quite closed.

13th May.—Body quite free of eruption. Face looks clear, with the exception of a slight eruption under the eyes and across the point of the nose ; eyelashes are growing ; a slight appearance of hair on eyebrows ; mouth almost well, only a slight redness along mesial line of palate and at back of tongue.

11th June.—Eyebrows and whiskers evidently growing.

9th August.—Left on a pilgrimage to Mecca. Quite free of all signs of the disease, with the exception of a slight swelling and discolouration under the eyes. Hair on face growing rapidly. Has quite recovered his bodily powers, and has been able to dispense with his stick for the last three months.

IX.—*Bachù Ayà Ràj*, æt. 35.

16th April 1871.—Came from Nandora for treatment. Whole body covered with large irregular patches of a tuberculated character ; cheeks and nose swollen and covered with similar patches ; ears swollen and lobulated ; fingers of both hands much swollen and bent ; toes also swollen, and of three outer toes of each foot have fallen off.

Says that he suffered a great deal from primary and secondary syphilis, and received treatment from native

hakíms. While suffering from secondary syphilis, the *leprous* patches began to appear on his body and face. He then got free from syphilis, but leprosy steadily increased. Has been treated for it by native *hakíms*, but without benefit. The disease first appeared about six years ago.

To be placed under carbolic acid treatment.

25th April.—Can straighten his fingers considerably.

To continue application of carbolic acid and oil, and take internally Infus. Chirettæ $\bar{3}$ i, Acid Nitro-hydrochlor. dil. $\mathfrak{m}$ x, three times a day.

30th April.—Swelling of face much less; eruption on body breaking up into small patches; skin looks much clearer; swelling of fingers reduced, can very nearly straighten them; general health much improved.

7th May.—Considers himself much better. The smaller patches on chest and abdomen have disappeared, and his face is much clearer.

22nd May.—Swelling of face almost gone. Legs nearly free from eruption, and skin, which was formerly harsh and rough, feels quite soft and smooth.

29th May.—Sensation returning to his limbs. Can straighten all his fingers, except two on each hand.

3rd June.—Has a very fair use of all his fingers. Eruption on back almost gone.

To continue tonic, but omit carbolic acid and oil, and apply instead—

Glycerine	...	...	$\bar{3}$ ss
Water	...	...	$\bar{3}$ iss
Carbolic Acid	...	...	$\bar{3}$ i

4th June.—States that the new liniment, though containing the same proportion of carbolic acid as the former, causes considerably more smarting, which is, however, not so severe as to necessitate a reduction of the strength.

16th June.—Only a few black spots now remain on legs ; swelling on face very slight.

27th June.—All signs of leprosy gone, except a little puffy swelling below the eyes.

To continue remedies as a precautionary measure.

19th July.—Discharged quite well.

In a third case, that of a boy suffering from *white* leprosy, (*Baras* or *Korh*) encouraging results were also obtained, although the patient did not remain sufficiently long under treatment to allow of a perfect cure being effected. The particulars were as follows :—

X.—*Kabir*, Mussulman, æt. 14.

19th June 1871.—Came to Hospital this morning. Says that he has had some small white spots on his legs since he was a child, and that they have continued to spread slowly but steadily.

Present condition.—On left leg, a long, white, depressed scar almost surrounding the ankle, and a number of small irregular white spots running up from this nearly to the knee ; on right leg, a similar line of small white spots ; on left side of loins, a circular white patch about an inch and a half in diameter, and on right side, two similar but smaller patches. All these spots, when closely examined, are found to be surrounded by a dark zone, about an inch in width, on which the skin is slightly rough, and apparently studded with minute tubercles—the appearance being very much the same as that of the incipient stage of black leprosy, only that the skin is not so much thickened or so distinctly tuberculated. The white spots seem to be the cicatrices left by the spreading of this dark circle. The skin on them is of a pure pearly white, and quite smooth, apparently differing from the healthy skin merely in colour.

Treatment.—As in the former cases.

27th June.—The zone round the white spots is now of an *intensely black* colour. The white patches have assumed a rosy tint, and the natural brown of the skin *seems* to be encroaching on them.

29th July.—The whole of the spots of a more or less red and brown colour, and much reduced in size, *natural colour spreading rapidly from the edges*. The cuticle has peeled in small dry flakes off the blackened parts, leaving an apparently healthy surface.

1st August.—Left Khandwa as his family was leaving the district.

REMARKS.

A FEW remarks on the action of carbolic acid in this disease may not be inappropriate, and *first*, as to the *blackening of the skin* under its use. The normal action of carbolic acid on the animal tissues, whether healthy or diseased, is, as is well known, to *whiten* them, but its effect on the skin of a leper is, as will be seen, quite the reverse. There is, therefore, clearly some foreign substance present, of a nature essentially different from the ordinary animal tissues. What is this?

Now, it is noteworthy that, while *animal tissues* are whitened by carbolic acid, the *lower cryptogamic vegetables*, are invariably *blackened*. May we not here have an explanation of the proximate cause of the disease, namely, the presence of a slowly-spreading fungus which, like a blight, gradually destroys the vitality of the parts over which it extends, depriving them first of sensibility, and then of life; and, as a secondary effect, producing that derangement of the general health which invariably attends advanced cases?

This, of course, is offered merely as a hypothesis which further observation may establish or disprove. It seems,

however, to explain the principal features of the malady, and also the probable *modus operandi* of the carbolic acid in removing the diseased condition, and ultimately the cachexia and other secondary symptoms resulting from it.

Secondly, of the strength of the carbolic liniment that may be employed. In some of the first cases, it was applied in the proportion of 1 : 8, and occasionally some of the worst spots were touched with the pure acid. Latterly, it was found more convenient to employ it in a more dilute form 1 : 16 (3i to 3ii). The particular diluent employed does not seem of much consequence: the most generally useful is tilli oil, but any other bland oil would, of course, be equally applicable, and glycerine and water (as employed in case IX) produces a more elegant and very useful liniment.

In the more advanced cases of the disease, some care is required in not pushing the application too far, as otherwise considerable excoriation of the cuticle is apt to take place, while, from the general insensibility of the surface, the patient is unable to give warning when this is likely to occur. Cases IV and VIII give examples of this. In both of these, however, on leaving off the application for a few days, and anointing the parts with sweet oil or simple cerate, the lost cuticle was soon replaced, and but little inconvenience resulted.

KHANDWA, C. P.,

October 1871.



