"Rumadam"

HOW TO MANAGE A CASE OF MYCETOMA (MADURA)

AL SHAIKH MAHJOUB
Dept. of Microbiology & Parasitology
Faculty of Medicine.
University of Khartoum.

This is a simplified scheme for handling mycetoma cases. It is the result of eight years trial in the medical management of mycetoma:

Colour of Grains	Possible Organism	Therapeutic Regimen
Yellow	*Streptomyces Somaliensis*	Start with Dapsone 100 mg. b.d. Streptomycin Sulphate G I daily for one month and then on alternate days till end of treatment. If there is no response or anaemia and leucopenia appear replace dapsone by Sulphamethoxazole trimethoprim (Septrin®) tab. II b.d.
White	*Actinomadura madurae*	Dapsone and streptomycin as above.
Red	A. pelletierii	Septrin and streptomycin.
Black	*Madurella mycetomi*	Surgical excision of as much as possible followed by Griseofulvin G I in divided doses plus Procaine Penicillin G 400,000 Units daily.

Support all treatment with ferrous Sulphate and folic acid.

In all cases follow up treatment with Haemoglobin and total white cell count estimation. Do not worry about anaemia and leucopenia because they are reversible once treatment is stopped. If laboratory facilities are available try to confirm the diagnosis by culture, histopathology or serology. Average length of treatment is 8 months. Do not hesitate to do bulk-reduction-surgery if the lesion permits.

REFERENCES

1. MAHGOUB, E.S. & MURRAY, I.G. 1973 "Mycetoma" published by William Heinemann Medical Books Ltd., London.

2. MAHGOUB, E.S. 1972 "Treatment of Actinomycetoma with Sulphamethoxazole plus Trimethoprim Am. J. trop. Med. Hyg., 21, 332.

Mycetoma Plan - Medical Research Council G81/30.

At a meeting in the Province Medical Officer's of Health's office in Wad Medani on 9th. February 1964 the following people were present.

1. Dr. Mohamed Osman Abdel Nabi - P.M.O.H.
2. Mr. I.M. El Moghraby - Senior Surgeon, Wad Medani.
3. Dr. Satti - Director of Research, Ministry of Health.
4. Dr. I.G. Murray - Director of Mycological Reference Laboratory, London.

The subject under discussion was the nature and quantity of the Sudanese contribution to M.R.C. Plan G.81/30 designed to test therapeutic and diagnostic measures with regard to mycetoma. The following items were thought to be a reasonable Sudanese contribution :-

1. Two rooms in Wad Medani Civil Hospital furnished to serve as laboratories. Water and Electricity to be provided for these rooms free of charge.
2. Driver - suggested El Sir El Obeid (promised by Dr. Osman).
3. An unfurnished house of three bed rooms at least (to be rented by Ministry of Health).
4. Accommodation in the Nursing Sister's mess for a Public Health Nurse.
5. Clerk, J grade. (Promised by Dr. Osman Abdel Nabi).
6. Routine servicing of vehicles.

It is understood that these measures can be implemented only after the approval of the Government of the Republic of the Sudan has been obtained.

Dr. Mohamed Osman Abdel Nabi
Province Medical Officer of Health

Mr. I.M. El Moghraby
Senior Surgeon.

Dr. Satti.
Director of Research.

Dr. I.G. Murray
Director of Mycological Reference Lab. London.

MYCETOMA THERARY IN SUDAN

Proposàà for Laboratory & Field Trials

OBJECTS: 1. To compare the effectiveness of the available diagnostic procedures;-

(a) Biopsy, histopathology & culture.
(b) Skin tests.
(c) Precipition tests.
(d) Particle agglutination tests.

2. To assess the incidence of actinomycetoma in chosen areas; e.g.:-

(a) Khartoum Province.
(b) Gezira & Blue Nile Province.
(c) Other Provinces of the North.
(d) Southern Sudan.

3. To assess the effectiveness of different drugs and procedures in the treatment of mycetoma.

4. To extend the use of the best available drug treatment into rural areas.

5. To study the ecology of the causal organisms.

THE CAMPAIGN:

Phase 1 to be carried out in Khartoum. Main objects:-

(1) to select the most effective diagnostic method
(2) to select the most effective remedy.

Methods employed in Phase 1:-

(1) select 20 cases of actimomycetoma and admit to hospital.
(2) carry out all known diagnostic procedures on them to various
(3) cultivate the organisms and assess their sensitivities to various drugs:- dapsone, sulphonamides & autibiotics:
(4) treat the patients by the method suggested by the invitro tests as most suitable.
(5) Observe the progress of the lesions; the following methods suggest themselves:-
    (a) photography at regular intervals; it would be essential to use standard positions and distances;
    (b) a special tape measure spirally applied between standard points. Girth measurements are unreliable except in in the calf.
    (c) Volume of lesion measured by fluid displacement; it is necessary to avoid errors caused by muscle wasting and to air bubbles.

(e) serological changes.

(6) discharge the patients to outpatient care when it is judged that sufficient progress has been made and admit a new batch; a different drug might be introduced at this stage.

(7) Concurrently with this trial the largest possible numbers of cases, geniune and suspected, should be subjected to all available diagnostic procedures. The ~~prare~~ primary object of items 1 to 6 is to find out which treatment(s) work(s) best and how long they (it) take(s) to achieve (a) clinical cure and (b) complete care, serological observations must be made throughout . The prime object of item 7 is to select the best possible diagnostic procedure; if this proves to be serological, it is necessary to find out at what stage in the development of the disease a reliable diagnosis can be so made.

Phase II The principal objects of phase ll are to:-

(a) assess the attack rate of the different forms of mycetoma, initially only in Khartoum Province and the Gezira.

(b) to extend the thesapeutic trial into rural areas on an outpatiant basis. The team would be responsible for diagnosis and follow up but drug administration would have to be largely in the hands of village dispensers and their helpers. The team would have to work out a travelling pattern which would take them regularly round perhaps a dozen villages.

Phase III Principal objects (a) assess attack rates in Sudan elsewhere than mentioned.
(b) institute campaigns of field treatment in those areas.

Phase IV Although numbered IV this phase could and should begin as early as possible after the onset of phase ll and should thereafter run concurrently with other programmes. The object quite simply is to discover the natural habitats of those organisms which cause mycetoma and to assess their distribution.

Side Issues There is not known effective medical treatment for maduro mycetoma and the recurrence rate following surgery is depressingly high. Is it possible to mininize recurrence by combined medical and surgical procedures? Would local instillations be of any value?

Staff Requirements

Phase 1

~~M.A.~~ Mr. I.M. El Maghraby (surgeon)) Sudanese
Dr. E.S. Mahgoub (Mycologist))
? A nursing sister) Expatriates
? Dr. Murray's "fellow")

Cont/3.....

e/c

MEDANI SURGEON

Phases 11 & 1V	Dr. Murray's "fellow"	Expatriate
	Nursing Sister	
	Lab. technician	
	Clerk	Sudanese
	Driver	
	Male nurse	
	Messenger and general factotum	

Phase 111 Highly speculative offerings from W.H.O.

Accommodation:

Phase 1 (a) Lab. space in Khartoum.
(b) Hospital Beds in Omdurman.

Phase 11 (a) Lab. space in Wad Medani.
(b) Hospital beds in Wad Medani.

Phase 111 (a) Travelling Laboratory.

Living space would be required for the expatriate staff initially in Khartoum and then in Wad Medani. During phase 111 the staff would probably have to settle for rest houses or hotels.

EQUIPMENTS:

1. At least 2 vehicles of Land Rover type, 1 preferably a pick-up truck and the other a passenger carrying station waggon. Later a fitted laboratory might be considered.
2. Surgical instruments.
3. Apparatus for culturing fugi.
4. " " histopathology.
5. " " serology.
6. Stationery and office equipment.
7. Photographic and dark room equipment.

PROPOSED PLAN FOR MYCETOMA THERAPY IN SUDAN.

STAGE I(PILOT STUDY).

Objects:

1. To assess the incidence of actinomycetoma in chosen areas, e.g. (a) Gezira.
   (b) Khartoum Province.
2. To compare the efficacy of the diognostic tests available, i.e. (a) biopsy with histology and culture
   (b) skin tests
   (c) precipitin tests
3. To select a trial area and assess the probable help available from local institutions and personalities.

Staff:

1. Expatriate.
   (a) Medical Officer
   (b) Public health nurse
   (c) Technician
2. Indigenous.
   (a) Driver
   (b) Clerk-Interpreter

Time:

6-8 months, preferably October-May (dry season).

Equipment:

1. Land Rover type of vehicle
2. Simple surgical instruments fobiopsies
3. Apparatus and media for culturing fungi
4. Apparatus for skin and precipitin tests
5. Stationary

Accommodation:

1. Laboratory in Khartoum
2. Laboratory in Wad Medani(two rooms in each place should suffice)
3. Living quarters for staff (they would be travelling so much that rest houses would suit best)

STAGE II(CLOSELY SCRUTINISED TRIAL).

Objects:

1. To collect a sufficient number of suitable patients within easy travelling distance of H. Q.
2. To treat, to compare and select the most suitable remedy.

Staff:

As in stage one but add the following indigenous personnel:-

1. A second clerk-interpreter
2. Nurse
3. Messenger and general factotum.

Time:

To follow as nearly as possible after the end of stage 1 and continue t o the end of the trial.

Equipment:

As listed in Dr. Murray's original paper to the M.R.C.

Accommodation:

1. Laboratory space
2. Living quarters

STAGE III (EXTENSION OF TRIAL).

Object:

To spread the selected therapeutic measures to a wider population by using satellite dispensaries and travelling teams.

Staff:

As in stage 11 but a second M.O. might be necessary He should preferably be a local man.

Time:

To commence perhaps a year after the initiation of stage 11 and proceed to the end of the trial - say 5 years from the beginning of stage 1.

Equipment & Accommodation:

As in stage 11.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

HUNTERIAN LECTURE

by

PROFESSOR JAMES BRENDAN LYNCH, M.D., F.R.C.S.

on

MYCETOMA IN THE SUDAN

on

Thursday, 12th March, 1964, at 5 p.m.

At the College, Lincoln's Inn Fields, London, W.C.2.

1. Mycetomas are relentlessly progressive chronic granulomata caused by a variety of organisms which fall into two groups a) Fungi, and b) Nocardia. They form a very serious medical problem in the Sudan by virtue of their severity in the individual patient, often requiring amputation, and their frequency in the population.

2. In the five year period 1958/1962, 620 Mycetomas were received for pathological examination. On the basis of the experience gained from these cases the clinical, radiological and pathological features of Mycetoma are described. Some of the problems raised in the fields of epidemiology, aetiology, diagnosis and treatment of this disease are discussed.

Clinical Trial on Sulphonamide Ro 4-4393

Centre of investigation	Date:

Name of patient (or initials)	Sex: M ☐ F ☐	Age:
Diagnosis:	Duration of illness:	

Effect of possible previous treatments*) good ☐ moderate ☐ bad ☐ Antibiotic employed ☐ Sulphonamide employed ☐

Ro 4-4393 Initial dose: (g)	Maintenance dose g/day	Duration:

Blood counts: before therapy: red blood cells leucocytes
after therapy : red blood cells leucocytes

Urinary Examination: before therapy: crystals cylinders albumine
after therapy : crystals cylinders albumine

Bacteriology: (culture if necessary) before therapy:
during therapy:
after therapy :

Other medications administered simultaneously:

Side effects:

none ☐	leucopenia ☐	renal involvement ☐
drug fever ☐	agranulocyte ☐	cyanosis ☐
exanthema ☐	purpura ☐	allergic reactions ☐
anaemia ☐	nausea, vomiting ☐	anaphylaxis ☐
	headache ☐	..... ☐

Result obtained with Ro 4-4393 used as a:
Chemotherapeutic ☐ Result*): very good ☐ good ☐ moderate ☐ bad ☐
Chemioprophylaxis+) ☐ Result : Exacerbation during prophylaxis: yes ☐ no ☐

Other remarks: (possible effect of a subsequent treatment)

*) Please turn over for explanation

+) or as a suppressive therapy

Clinician's signature: