CARE TO CURE CHRONIC PARONYCHIA

By

J. MATHIAS

Introduction ; This work was conducted with the purpose of obtaining the conditions known to be essential for curing chronic paronychia of the monilial type. This is an affliction of the nail plates and nail folds of fingers and toes, one or more of which may be afflicted simultaneously, and one which has proved recalcitrant to all simple and practical methods of treatment. Its recurrence has been more difficult to prevent although the circumstances under which it occurs and those which perpetuate the process are fairly well understood.

Definition and Description : Chronic paronychia is a condition where painful, bolster-like and erythematous swellings of the nail-folds occur. The nail plates themselves become secondarily hardened, thickened and grooved and often assume a brownish or blackish color. There is no matter beneath the nail-plate and the attack on it starts from its free edges adjoining the affected nail-folds. The cuticle is always destroyed and space beneath the nail folds contains whitish matter or a bead of pus which can be expressed by pressure. The course of the disease is characterised by intermittent flaring up of activity.

Incidence : The disease is ubiquitous but is known to affect only those whose occupation requires long immersion of their hands and feet in water together with contact with food particles and fresh organic matter. The class of people most affected are house - wives who do their own cooking and dishwashing, cooks dishwashers, pastry-cooks, soda-jerkers workers in fruit canneries and orange workers whose hands come in cantact with fruit juice. Dhobies have not been recorded to be affected probably because their work does not entail contact with food. Women in the USA are less affected than those elsewhere, as reported, as much of their household chores are done mechanically. The age group found most vulnerable is that from 20 to 50 yrs. which suggests that this is an occupational hazard

Pathogenesis : The cuticle is first injured both by trauma and rapid hydration and drying of it after its frequent immersion in water. This opens up the potential space under the nail folds encouraging secondary infection of it. Experiments by Stone & Mullins have served to verify this The organisms found in the discharge have been those normally inhabiting the alimentary tract viz : coliform., stap. aureus; proteus vulgaris; pseudomonas pyocyaneous and candida of different species, of which c. albicans predominates with or without cocci or bacilli Staph. aureus is considered the cause of the acute painful swelling. By fairly rapid invasion of the nail-fold and a tendency to burrow under the nail-plate candida readily colonise the stratum corneum softened by maceration, but it becomes invasive and gives rise to inflammation only under

special conditions which are still not fully understood, but which may be associated with a change from its yeast to its mycelial form in which form it is most frequently seen in the exudate. Whittle et al's experiments have suggested this.

Therapy : A review of the literature proves that whatever be the therapy employed, it is impossible to obtain cure without providing against contact with provocative factors. The types of treatment employed can be classified into those (i) using physical agents to guard the parts from coming into contact with moisture like barrier creams, rubber gloves, nail polish and silicone protetors (2) Using antibacterial and/or antifungal agents like antibiotics and chemicals. But it is found no attempt has been made to obtain a continuous state of dryness which is accepted to be most imperative to obtain the desired result.

Material and Methods : We tried to compare and contrast 3 types of treatment carried out simultaneouly on fiingers of each patient. If possible the affected fingers of one hand of the same patient were divided into 3 groups, one for each method, so as to ensure that as far as possible all the fingers under care were subjected to similar situations. To enable such a study, only patients having 3 or more fiingers affected in one or both hands were taken up. We also tried to determine the presence of any associated condition in the patient which might have influenced either the disease or the treatment. Routine blood, urine examinations were done. Age, sex, occupation, duration of disease, first finger affected, interval between first finger affected and the others were noted. Varieties of micro-organisms present in the discharge were determined from one finger of each patient.

Material : consisted of 1o2 nails affected in 23 patients. The groups into which these were divided consisted of (a) in those where a purely antifungal antibiotic Amphotericin-B : brand Fungizone supplied by M/S Sarabhai as a 3% lotion B. No 64080 dt. 8-6-65 in plastic droppers (b) in those where a purely antibacterial antibiotic Tetracycline : brand Achromycin Pediatric drops (aqueous) of Lederle containing Tetracycline 92.4 gms (equiv) to IOO gms. (c) the control group which was only dry-dressed.

Methods : Casuative or prevalent micro-organisms were first determided by direct examination of the dischrge in a wet smear in IO% KOH solution and a dry smear by Gram's stain under the microscope. This gave a relative idea of the microbiology of the matter. Cultures for bacteria and fungi were conducted and the species of candida and variety of bacteria and cocci were disiinguished.

Patients attended twice a week, when each time each affected finger was first thoroughly cleansed with methylated spirit. Overgrown nails were pared. Any matter under nailfolds was removed with a sterile needle. The respective drug was then instilled under the fold of the respective finger with a needle. Then

the affected part was warpped with a dry gauze (not sterilised) and over this to completely cover the area sticking plaster was wound round. In the control group no drug was instilled. Patients were advised never to remove the dressing or allow the parts to get wet. They were asked to use dry finger stalls and gloves dusted with french chalk to perform their tasks. In most there was no problem involved to meet these demands. At times if pain or irritation required the removal of the dressing, it was made imperative that the parts did not come in contact with food or water. In every case the sodden affected skin would peel off and new healthy skin would gradually replace this Swlling and pain of folds diminished most often after 2-3 dressing New nailplates and new cuticles were seen to grow healthily within a fortnight's treatment. More nails were dry dressed to prove the superfluousness of antibiotics in the care of this condition.

Discussion and results : The 23 patients reported were those who came for treatment till either a complete cure i. e a fully grown healthy nail and cuticle or at least a new cuticle and partial healthy nail with subsidence of all symptoms were obtained.

In 17 patients complete or partial cure was obtained within 4 months of treatment and rapidity of cure was directly proportional to the patiens adhering to the required conditions. In one patient whose 4 fingers of the right hand were affected and which were only dry-dressed healed more rapidly as she did not let them get wet, than the 2 fingers of the left hand, each dressed with an antibiotic and which she could not prevent from getting wet, although treatment was carried out for over one year.

In our series the little finger seemed never to be the first to be affected, perhaps because it escapes trauma in the regular run of work. Thumb, middle, ring, index fingers were all affected primarily and of both hands equally.

Patients consisted of 17 women and 6 men. Occupations were those of house-wives, dishwashers and cooks. Age : 18 were in the 20-40 yrs. group 4 were in the 40 to 50 yrs. group; and one was in the 50 to 60 yrs. age group.

Duration of disease was from a few months to 5 years.

Organisms detected were candida albicans and tropicalis. In 9 patients gram and gram-ve bacilli were seen.

Achromycin was used in 22 nails of which 16 were cured and 6 relieved. Fungizone was used in 23 nails of which 18 were cured and 5 relieved. 57 nails were dry-dressed of which 49 were cured and 8 relieved.

To obtain cure, duration of illness did not affect duration of treatment. It was ONLY the patients' ability to maintain the required conditions that affected course of treatment. In 34 nails pain and swelling subsided within a week's

treatment in all methods. In 10 nails cuticle was seen within 2 weeks Others took 4 to II weeks. New nail plates were seen almost simultaneously with the cuticle.

Acknowledgement : This work was conducted under the guidence of Dr. S. C. Desai, Prof. and Head of the Department of Dermatology of the K. E. M. Hospital Bombay. I thank him for having permitted me to read this paper at the annual conference of the I. A. D. V. held in Bombay in Jan. 1970. and for all his help and guidance throughout the conduct of the work. I have to particularly acknowledge with gratitude the assistance rendered to me in the investigation of the micro-organisms by Mr. Rusi Mehta, and the other members of the staff of the department of dermatology of the K. E. M. Hospital, Bombay where this work was done.

BIBLIOGRAPHY

1. Gokhale B. B., Sassoon Hospital Poona, India. Year Book of Dermatology 1964-65 p. 44.
2. Garrard Hollis F. M. D., Miami, Fla Use of nail polish sealer in treatment of monilial paronychia .. Archives of Dermatology ... vol. 72 of 1955.
3. Goechika U ... Treatment of chr. paronychia. Excerpta Medicl Dermatology & venereology P. 693 Exc.365.
4. Juhlin L. & Liden S. (Dept.) of Dermatology, Uni Hospital. Uppsale. Acta Derm-venereal (Stockh.) 1966, 44/5(349-350) Tables I illus. I. Excerpta Medica Dermatology & venereology P. 560 Exc 2988. Effects of primaricin in chr. paronychia.
5. Meara R.H., M. B , M. R C. P., Physician, skin dept. the Middlesex Hospital & St. John's Hospital for disease of skin. Disease of nails the Practitioner May '66 No. II75 vol. 196.
6. Makee V. D., Polyclinic, Kroushtadt. U.S.S.R.-Vestn. Treatment of superficial fungus infections of skin with Trinitrotoluene preparations...
7. Reiter Charles Jr. M. D. San Antonio, Texas. A treatment of monilial paronychia. Archives of Dermatology vol. 73 1956.
8. Robinson Harry M. Jr. M. D. & Mark B. Hollanda, M. D... Topical use of Chlorquinaldol from division of dermatology. Dept. of Medicine, Uni. Maryland School of Medicine... Journal of Investigative dermatology. vol. 26. 1856 P. I43.
9. Robinson Harry Jr. M. D. & Isreal Zeligman., M. D. Local application of Erythromycin ointment.... Journal of Investigative Dermatology. vol. 20. 1953.
10. Roascheu-Nielsen (Finsen, Institutio, Copenhngen) "Nystatin in treatment of Paronychia with moniliasis. Year-book series of Dermatology by Baer-Kopf 1962-63 P. 54,
11. Stone O. J., Mullins J. F. Head E. Dept. of dermatology. Uni. of Texas. Med. Branch.
12. Galveston, Texas. Arch. Environment Hlth. 1964 9/5 (585-588) Chr. paronychia-occupational material-Excerpta Medica Dermatoiogy & venereology. Vol. 19. 1965. Exc. 2584.
13 Whittle Howard C. John L. Moffat & Royden A. Davis (Uni. of Cambridge) Paronychia or peronychia. Etiologic aspects discussed by : Year Book of Dermatology by Baer-Kopf 1959-60 P. 362.
14 Whittle Howard C. M. D., F.R.C.P., & G. Austin Gresham-Dept. of Dermatology, United Cambridge Hospital-dept. of pathology. The Uni. of Cambridge, England ... Paronychia exptily. Induced..... Journal of Investigative Dermatology Vol. 40 1963.