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NUMMULAR ECZEMA

Its relationship to internal foci of infection. A survey of 84 case records

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Devergie (9) described nummular eczema more than a hundred years ago. Since then the condition has been reported under different names, such as orbicular eczema, herpetoid eczema and parasitic eczema. In Chipman's excellent historical review (8) it is indicated that the neurotic eczema of Brocq (6), the recurrent eczematoid affections described by Pollitzer (29) and the orbicular eczema of Ormsby (27) are identical and suggested, in the interest of a simplified terminology that all forms should be considered under one name. Fowle and Rice (13) hold the Engman type of chronic infectious eczematoid dermatitis (12) to be identical with nummular eczema.

The designation nummular eczema has usually been applied in a purely descriptive sense to a form of eczema with a distinctive appearance and course, — a designation which there is no reason to abandon as long as the actual cause of the condition remains unknown.

Clinical features: Characteristically, nummular eczema occurs in sharply defined, coin-shaped erythematous plaques studded with small vesicles and papulovesicular elements or pinhead-sized crusts. The primary elements are small papules and papulovesicles which become grouped and then confluent, — forming plaques. The plaques may be single or multiple, and vary in size with an average of two cm in diameter. The location and distribution are characteristic, favouring the extensor surfaces of the extremities, especially the dorsum of the hands and the forearms. Not infrequently the thighs and legs are affected and patches of eczema may appear on the trunc and face in that order. The lesions enlarge by growth of the individual patches and by confluence with satellite elements. The oozing is characteristic in that it occurs from numerous small points — status punctosus — (16) in contrast to the diffuse oozing in other forms of eczema. The oozing leads to the formation of crusts. A tendency to central healing, — clearing up and peripheral extension — leads to ring-shaped and circinate lesions resembling a superficial fungous infection. This has led to the designation parasitic eczema. In short, there are edema and oozing in the acute stage, while in its chronic form thickening, dryness and scaling may be prominent features. Nummular eczema may be a stubborn condition and after healing recurrences may appear on exactly the same sites, — like a fixed drug eruption. The eventual prognosis, however, is good and even in cases which do not respond to therapy the disease "burns itself out".

Before considering our own observations, we shall review briefly the views of various authors on nummular eczema.

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Etiology and pathogenesis: Various unsubstantiated hypotheses have been offered to explain the nature of nummular eczema, but its etiology and pathogenesis remain obscure. Gross (16, 17, 18) believes that nummular eczema is due to a metabolic disturbance of the skin resulting in defective keratinization. He associates this form of eczema with asteatosis and asteatotic eczema, and considers that vitamin A deficiency is a dominant factor. He reported good results after administration of this vitamin. This view is also advocated by Benedek (2). Gross and his associates (18) also found impairment of the alkali-neutralizing power of the skin in nummular eczema and in housewives' eczema, but not in allergic contact dermatitis, atopic eczema or in patients without eczematous eruptions. It was their impression that housewives' eczema is nummular eczema precipitated by the chemical action of alkalies. Gross in his papers (16, 17) categorically maintains that nummular eczema is not a manifestation of bacterial allergy. However, in the discussion of Gross' paper (16) divergent views were expressed. Fox argued in favour of a bacterial etiology. Sulzberger and Wolf (47) suggest that although nummular eczema present many clinical and histologic features of eczema it may nevertheless be related to some other kind of dermatosis, e. g. herpes simplex or to an "id"-reaction. Weidman and Sawicky (52) suggest, after reviewing the records of 516 cases and studying 125 patients over a period of eight years, that nummular eczema is not a disease entity at all, but rather a syndrome caused by multiple etiologic factors. However, the findings of these authors do neither propose to establish nummular eczema as an atopic dermatitis, nor as a variant of dermatitis herpetiformis — such as has been suggested by other investigators (22, 26). Fowle and Rice (13) who studied 178 patients with nummular eczema also found multiple causes of the condition, depending upon the interaction of three etiologic factors: 1) *Nutritional* — vitamin B deficiency and excessive carbohydrate diet. 2) *Allergic* — sensitivity to endotoxins primarily of staphylococci and to lesser degree of streptococci. 3) *Bacterial* invasion of the skin by staphylococci. They consider that staphylococci play a major role in the etiology of nummular ezema. In their series vitamin A deficiency was noted only a few times and vitamin A administration under controlled conditions produced no improvement. They believe that the plaques of nummular eczema represent islands of sensitized skin. They relate the importance of foci of infection to the allergic component, i. e. bacterial allergens released from a focus of infection activate the plaques of sensitized skin. Bacterial allergy was also conceded by Schoch (40) to be part of the etiology; he found that improvement could be obtained by the use of sulfonamides. Accepting this view, Sutton (48) recommended removal of tonsils, eradication of dental, vaginal and sinus foci in addition to sulfonamide therapy. Sperber (44) believes that nummular eczema is often due to bacterial sensitivity, especially to the staphylococcus. In a disease in which focal infections play a part, it is important that the source of such infections be looked for. In his opinion the most common foci are the teeth, tonsils, sinuses, bronchi, gall bladder, gastrointestinal tract, prostata, cervix, bladder and kidneys.

The general rôle of bacteria has long been discussed. The original hypothesis of Unna (50) that all eczemas are caused by infection with the "morococcus" is no longer accepted since it has been shown by various authoritative in-

vestigators that the primary vesicles are sterile (21, 23, 49). The French school, lead by Sabouraud, used painstaking cultural methods to demonstrate the presence of streptococci and staphylococci in fresh lesions of eczema. Their significance was judged rather from their mere presence and ex juvantibus than on the basis of cutaneous tests. Terms like "streptococcides et staphylococcides eczématiformes" (39) and "dermoépidermite microbienne" (15) were introduced. Functional skin testings were carried out sporadically (28, 30, 41), but very little attention was paid to these reports and findings. It was not until Robert (31, 32) and later Storck (45) — encouraged by Miescher — succeeded in inducing true eczematous patch test reactions with microorganisms cultured from eczema lesions that the significance of bacteria in eczema was revived. It became clear that in various types of eczema cutaneous microbes were of major importance or of exclusive significance. Storck (45) after extremely extensive and detailed studies by means of autogeneous bacterial cultures and skin tests on eczematous patients and normal persons showed that there was usually a specific hypersensitivity of the eczema patient's skin to products of bacteria from his own body. He suggests it might be possible to hyposensitize or immunize such a patient, a view also held by others (13, 30, 32). Rajka (30), using the indirect passive transfer method in man, was able to demonstrate specific bacterial reagins, and in a few cases positive blood cultures were obtained at the beginning of the dissemination of an eczema. Staphylococcus aureus and streptococcus hemolyticus are usually most frequent and skin reactive (13, 19, 30, 32, 36, 37, 45). Heilesen *et al.* (19) showed that the specific manner in which the skin reacts *in vivo* to certain bacterial strains could be paralleled *in vitro* by agglutination reactions and phagetyping. Specificity exists and individual patients react only to individual strains. A great many people with healthy skin react with positive patch tests to bacterial strains inhabiting their own skin and may probably develop microbial eczema when any alteration of the host-bacteria relationship occurs.

The factor that is responsible for the cutaneous reactivity is a protein, probably a combination of bacterial products and organ extracts resulting in specific autosensitization. For further information in this interesting and promising field the reader is referred to the work of Miescher *et al.* (25) and Röckl (36, 37, 38).

Though the relationship between normal skin, eczema and bacteria by now is partly clear — at least as regards cutaneous microorganisms — the same clarity has not as yet been attained concerning the relationship of eczema reactions to focal infections of teeth, tonsils, the respiratory tract etc. The importance of focal infections in different dermatoses and nummular eczema in particular has nevertheless been pointed out and accepted by different authorities (5, 7, 13, 30, 42, 44, 45, 46, 47, 51). Concerning nummular eczema Hill (20) says: "The cause is unkown although there is some evidence to indicate that a partial cause may in some cases be a lowgrade infection with staphylococcus plus sensitization to the infecting organism." Röckl (34, 35) asserts that sharply defined eczematous plaques point to microbial contribution; furthermore that nummular eczema, or "nummuläres mikrobid" as he calls it (thus suggesting an etiologic factor) may usually be looked upon as a secondary skin manifestation of some internal focus of infection. The proof of such a clinical impression,

however, is difficult to establish. Proof usually consists in demonstrating the presence of microorganisms on culture in sites that have reputations as foci of infection and the clinical disappearance or remission of the eruptions after their eradication or following specific desensitization to the particular microorganisms involved (1).

Own material: During the last six years we have, in our department, treated 102 patients whose condition when discharged was diagnosed as nummular eczema. Each case record have been reviewed and analyzed. The assumption was that this distinctive eruption was partly due to allergens emanating from some remote internal focus of infection and carried to the skin by the hematogeneous route. "Id"-reaction of other morphology and origin have not been included in this material. Eighteen cases were excluded from the material since they did not satisfy our diagnostic criteria.

The diagnosis was dependant on the presence of the essential clinical features described earlier in this paper, together with an accurate history, thorough physical examination, appropriate laboratory investigations and sufficient observation of the course of the eruptions. The demonstration of internal foci of infection and disappearance or remission of the eruption following eradication of the infective focus were of decisive weight.

As regards differential diagnosis, eczema due to primary irritants and allergenic contact substances has been ruled out based on the history, clinical appearance and course together with negative patch tests to possible contact substances. All skin lesions were thoroughly examined for exclusion of fungi before the diagnosis was established. Atopic dermatitis, where nummular-eczema-like lesions are not uncommon, was considered and excluded. Dermatitis herpetiformis which from time to time may simulate nummular eczema was also considered. Negative patch tests to potassium iodide and absence of eosinophilia were considered of value in these cases. A questionnaire was sent to each patient asking whether they still had nummular eczema, continually or in periods in the same way as earlier; and if "cured", when did the cutaneous manifestations disappear. They were further requested to return to the department for re-examination. Five patients were dead since their discharge from our department and in four cases the patients could not be traced. Fiftyfour patients answered the questionnaire, but only sixteen met for reexamination. This may partly be due to the difficult geographical circumstances in the western part of Norway.

During their stay in hospital the patients had been subjected to a full clinical examination and history-taking. Investigations had been made to determine any easy accessible foci of infection with special regard to teeth, sinuses, ears, throat and lungs and included roentgenological and bacteriological examinations, blood count, sedimentation rate and estimation of the serum antibody titres. Anti-staphylolysin titres (AstaphT) above 2.5 units per ml were considered as increased, according to Dobias *et al.* (10, 11). Regarding antistreptolysin titres (AST), — which depend on the geographical latitude (24) — values exceeding 250 units per ml were considered as elevated on the basis of investigations made in the southern Norway (43). Sedimentation rates exceeding 12 mm read after one hour were considered as being elevated.

A brief summary of our findings follows:

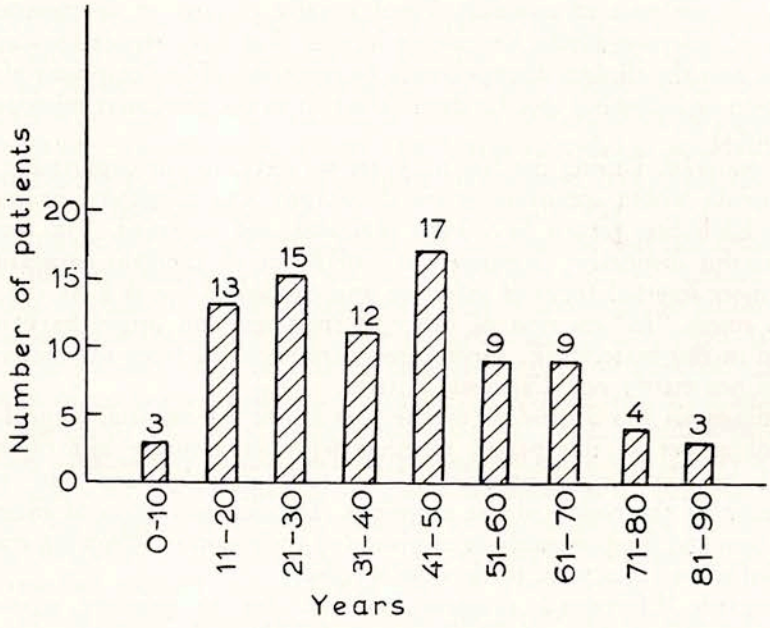

Fig. 1. Age at first admittance.

Sex: Of 84 patients, 56 were male and 28 female, or exactly twice as many males as females. This ratio may probably be accounted for by the selection of the cases.

Frequency: During the last six years 1807 patients were treated for different types of eczema (866 male and 941 female) in our department. In 4.6 per cent the diagnosis of nummular eczema was made.

Age: Fig. 1 shows the age distribution of the patients on admittance to our department.

Duration: Fig. 2, based essentially on the history, deals with the duration of the condition from the onset till the patients came to the clinic. In many cases the patients had consulted other clinics and private physicians before they were admitted. In general, the duration varied from a few weeks to 25 years. It appears that the majority of the patients were admitted in the first year after onset. This may partly be accounted for by the health service system in Norway.

Distribution of lesions: Table 1 summarizes the most common locations of the eruptions. This is in agreement with the findings of others who have studied this dermatosis. The figures which refer to distribution take into account that in many patients the lesions were present in more than one site. The eruptions were always observed on the sites of predilection alone or together with lesions of the face, trunc etc.

Atopic history: Ten patients gave a history of atopic disease like asthma, hay-fever and/or atopic eczema among their close relatives. One patient had atopic eczema himself as a child. These findings do not tend to establish nummular eczema as an atopic dermatitis, — a view also held by others.

Soap and detergents: A history of exposure to external irritants, particularly soap and water, oil, grease and other macerating factors was spontaneously told by 38 patients and nearly everyone mentioned the fact that even normal use of soap and

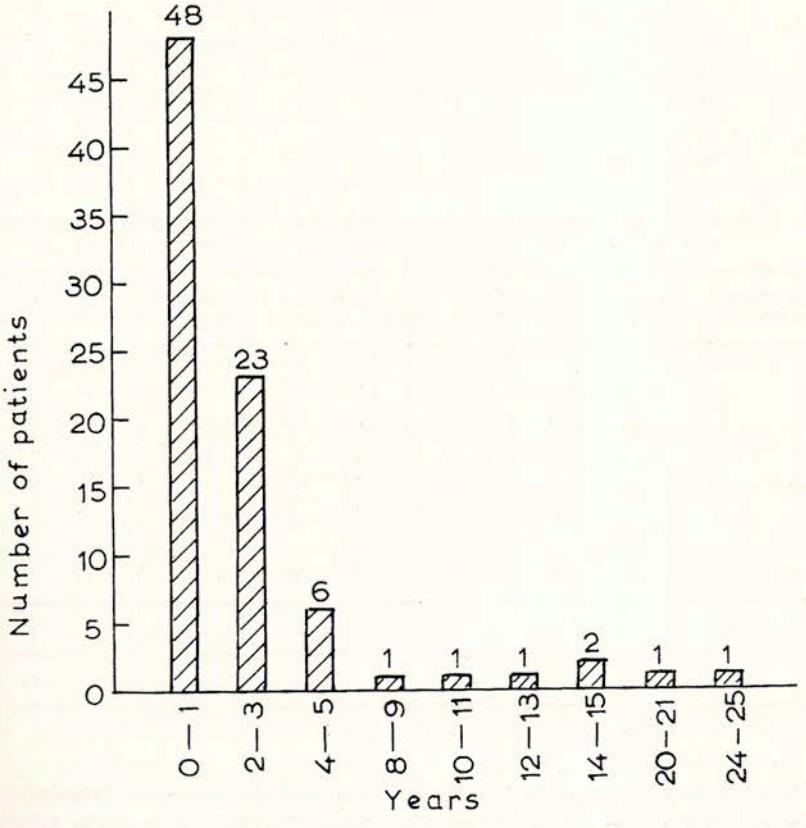

Fig. 2. Duration before admittance.

detergents aggravated the already existing eruptions. Neither this information nor the occupation of the patients permit conclusions regarding the significance of these factors since the risk of exposure in the population as a whole is unknown.

Focal infections, sedimentation rate, AST and AstaphT: Easily accessible foci of infection were searched for in 69 patients and discovered in 47 cases. These are listed in Table 2 according to distribution and occurrence. In three cases there were dual foci of infection, i. e. a dental focus together with either bronchiectasies, chronic sinusitis or chronic otitis media. The fifteen cases in which foci of infection were not searched for have been excluded. None of the patients had urinary symptoms, and none showed pyuria. However, further investigations in order to exclude any urinary focus of infection have not been carried out. Symptoms and signs pointing towards gastrointestinal focal infection were not observed. AST and AstaphT and sedimentation rate examinations were carried out in all patients. Table 2 summarizes the elevated and normal values in relation to different foci of infection. No significant difference exists regarding sedimentation rate and the serum antibody titres in the group where the foci were found as compared with the group where no focus was discovered. AST was found elevated in 22 cases, varying between 280 and 1600 units per ml. In 12 of these cases focal infections were discovered. On the other hand, AST was found normal in 38 cases where foci of infection were discovered simultaneously. In one patient with chronic sinusitis AST as well as AstaphT were elevated. In this case

Table 1. *Distribution of lesions.*

Dorsa of hands and extensor aspects of upper extremities	66
Extensor aspects of lower extremities	44
Trunc	25
Face	6
Other places	10

Table 2. *Occurrence and distribution of foci of infection in relation to serum antibody titres and sedimentation rate in 69 patients with nummular eczema.*

Foci of infection examined	Number of foci*	AST normal	AST increased	A Staph T normal	A Staph T increased	SR normal	SR increased
Teeth	33	26	7	33	0	22	11
Sinuses	10	6	4	8	2	6	4
Ears	2	2	0	2	0	2	0
Lungs	3	3	0	3	0	1	2
Tonsils	2	1	1	2	0	1	1
Subtotal	50	38	12	48	2	33	18
No foci found	22	12	10	20	2		6
Total	72	72		72		72	

* In three cases a dual foci of infection was found.

staphylococcus aureus was grown from the nose and streptococcus hemolyticus from the throat. Regarding AstaphT which was found increased in 4 cases, sinusitis was present in two cases where staphylococcus aureus from the nose could be cultured. No actual cause was found in the other two patients.

Bacteriological examinations: In 30 patients cultures were made from plaques of nummular eczema on admission. Of these 22 grew staphylococcus aureus, capable of hemolysis and coagulase production, 5 showed nonhemolytic streptococci, 4 showed beta-hemolytic streptococci and 2 showed enterococci. These bacteriological findings are essentially the same as those reported in a series of 37 patients studied by Fowle and Rice (13). However, these findings differ qualitatively very little from the microorganisms found on normal skin. We have no quantitative knowledge of the bacteria residing on the cutaneous eruptions in our material and measured by the "contact culture" method (45). The bacteriological examinations from nose and throat in our material have, unfortunately, been taken more or less hap-hazardly and allow no conclusions. In 16 cases, however, staphylococcus aureus, capable of hemolysis and coagulase production was recovered from nose, throat and skin lesions simultaneously. This finding is of some interest. Unfortunately, the staphylococci were not phagetyped.

Treatment: Topical medication according to general dermatological principles was used in all patients concerned. Recent experience suggests that the most satisfactory local treatment is the use of hydrocortisone preparations in combination with local antibiotics followed in three to four days by pastes or ointments containing 2—5 per cent crude coal tar, pure coal tar or different colourpaintings. Systemic antibiotics have been used whenever severe local infection existed or when focal infection has been discovered. Bacterial sensitivity tests have always been made prior to the systemic administration of antibiotics. Treatment along these lines usually showed good im-

Table 3. *Result of treatment of foci of infection.*

Foci of infection	Number of cases	No recurrence	Recurrence	Information lacking
Dental	20	20	0	0
Sinuses	10	5	3	2
Ears	2	1	1	0
Lungs	3	0	3	0
Tonsils	2	1	0	1
Total	37	27	7	3

Table 4. *Result of treatment of foci on cutaneous eruptions.*

Foci of infection	Nummular eczema		
	"Cured"	Not "cured"	Information lacking
Treated with success	17	4	9
Not treated or chronic	0	13	7
Sum	17	17	16

mediate response. According to our view, eradication of any identified focus of infection was considered of major importance for a lasting remission or cure. Since all the patients also have been treated with local remidies, it is obviously difficult, if not to say impossible to judge the immediate result. On the basis of questionnaires and reexamination it was our intention to get an impression to what extent eradication of foci of infection influenced the further course of nummular eczema, or at best had brought about a lasting remission or cure. With the exceptance of 13 patients with dental foci of infection, who declined having their teeth extracted, all diagnosed foci of infection were adequately treated.

Table 3 shows the distribution and result of treatment of 37 foci of infection treated while the patients stayed in our department. In 27 cases we know that the treatment was carried out with success, while in 7 cases chronic focal infections were discovered. These have since from time to time relapsed, and the patients relate exacerbations of the nummular eczema with flare-up of the focal infection concerned. In three cases information as to the further course is lacking.

Table 4 shows the result of treatment as regards the cutaneous manifestations, comparing the group of patients where the focal infections were not treated (13 patients with dental foci) or treated without success (7 patients with chronic focal infection) with the group of patients in which focal infections were eradicated successfully. In 17 cases the patients have been "cured", i. e. they have not had recurrences of nummular eczema after an observation of from one to five years after discharge. Prior to treatment the disease had lasted from a few months to fourteen years with more or less frequent recurrences, usually one or two each year. Concerning the 17 patients registered as "not cured", there were chronic focal infections in 7 cases, and in 6 cases the patients refused having their dental foci eradicated. In the remaining 4 cases in

Table 5. *Outcome in patients treated with topical remedies only.*

Foci of infection	Number of cases	Nummular eczema		
		"Cured"	Not "cured"	Information lacking
Not treated	13		6	7
Not discovered	22	6	8	8
Not searched for	15	5	3	7
Total	50	11	17	22

this group there were dual foci of infection, i. e. dental foci combined with chronic sinusitis, chronic otitis media and bronchiectasies respectively. The result of treatment of focal infections as regards nummular eczema is highly significant when the cases where information is lacking are not taken into account. Assuming that the outcome in these patients are proportionately the same as in the patients in whom we know the result, the therapeutic result is still statistically significant, as tested by the χ^2 method with Yates' correction. If one enlarges the error which may be introduced by taking into account the patients where information is lacking there is no significant difference between the two groups.

Table 5 summarizes the different cases where focal infections were not searched for, found or treated. This group constitutes 50 cases which have been tabulated to show the outcome in patients treated with topical remedies only. In 11 cases the disease "burnt itself out" after having relapsed from two to ten years periodically. On the other hand 17 patients still had recurrences two to twentytwo years after the first attack. Regarding the remaining 22 patients we have no information since the discharge from hospital.

Comment: Well aware of the limitations of a retrospective analysis of a material based on simple questionnaires and clinical records and where the investigation has not been precisely planned in advance, the present study was nevertheless undertaken in the hope of obtaining some information regarding the duration of and relationship between nummular eczema and focal infection. Last but not least we hoped that our study might contribute to the planning of further investigations. In addition to the mentioned limitations there are several others which prevent exact conclusions in our material. In the first place we have no control group and periodic follow-up studies have not been made. Furthermore the material is selective, since it was based on hospital records. Thus the obvious preponderance of male patients in our material prevents any conclusion as to sex distribution of nummular eczema. In a material based on out-patient case records the ratio might probably have been different since a majority of the housewives are treated outside the hospitals when such a condition is concerned. Furthermore, certain investigations have not been carried out to prove or disprove different etiological hypotheses advocated by various workers.

The importance of nutritional deficiencies in nummular eczema and the use of vitamins in its successful management have been stressed several times. The importance of mal-nutrition — and vitamin deficiencies in particular — as

possible etiological factors cannot be denied. In our material, however, there is no clinical evidence to support this assumption; furthermore, this seems unlikely in view of the generally high nutritional standard in Norway and because of vitamins often being incorporated in various foods. Gross (16) who advocated the use of vitamin A in the treatment of nummular eczema also used tar ointments; tar is still one of the best therapeutic agents for the treatment of this disease. It is therefore difficult to differentiate between the effect of vitamin administration and the activity of local treatment in his patients.

The significance of aggravating factors such as detergents, and particularly water and soap has been emphasized by most authors who have made a study of this dermatosis. Logically, such elements should be avoided in nummular eczema in accordance with the principles for the treatment of eczemas in general. However, the prevalence of slow alkali neutralization among patients with nummular eczema has been nicely shown by Gross and associates (18). This may account for the frequent statements by patients that soap and other alkalies aggravate the condition. Investigations along these lines have, however, not been carried out in our material.

It is generally thought that cold weather is an important predisposing factor in nummular eczema. Our findings do not weaken this assertion, but we do not believe that this feature is particularly characteristic of nummular eczema since various dermatoses show similar seasonal variations (clearing up in the summer and recurring in winter time).

Concerning nummular eczema and its relationship to focal infection we still depend on clinical impressions. Nearly every dermatologist has seen recovery and improvement of a stubborn eczema after extirpation of an infective focus. Proof has as yet not been established. Nevertheless, Gordon (14) in Loewenthal's book "The Eczemas" says: "Carpenter *et al.* (7) produce evidence in support of a relationship between focal sepsis and nummular eczema." However, this is a verity with reservations in light of the small and selective material and the lack of follow-up studies from which the conclusions are drawn.

Our clinical observations do not allow any conclusions in favour of the etiologic significance of focal infections in nummular eczema. In our series we have seen recovery and remissions after extirpation of an infective focus. Similarly, exacerbations have occurred which coincided with a flare-up and eradication of the infective focus. Whether focal infection is an etiologic, precipitating or contributing factor remains un-answered.

Staphylococci and streptococci may play a leading part in the etiology since they are most frequently recovered from the usual foci of infection and from skin lesions. There is no reason to believe, however, that they are the only microorganisms of importance. We suggest that any bacteria or bacterial product, without regard to pathogenicity may act as allergens and give rise to skin manifestations when conditions otherwise are favourable. The results of bacterial examinations of the infective focus followed by a positive patch test with the particular strain might favour this hypothesis.

As suggested by the findings in our material, focal infections should be discovered and attacked by medical and/or surgical means. In the present state of our knowledge the etiologic factors in this disease are but poorly understood and arbitrary statements are superfluous. It is our opinion, however, that if

careful attention is given to focal infection and bacterial allergy, precisely planned investigations may shed further light on the etiology and pathogenesis of this puzzling disease.

SUMMARY

A brief review of the literature and of current concepts on nummular eczema is presented.

Eightyfour hospital case records with this diagnosis have been carefully reviewed and studied with special regard to the etiologic significance of focal infections and their treatment. The results do not allow conclusions to be drawn regarding the etiologic significance of focal infection in this type of eczema. The search for foci of infection and their adequate treatment seem however to be of absolute value in nummular eczema.

Whether focal infection is an etiologic, precipitating or a contributing factor in nummular eczema remains unknown.

RÉSUMÉ

On donne un bref aperçu sur la littérature et les opinions prévalantes concernant l'eczéma nummulaire. 84 observations ainsi répertoriées ont été soigneusement analysées, en s'attachant surtout à la signification étiologique des infections focales et à la thérapeutique. Les résultats n'autorisent aucune conclusion formelle. Cependant, la recherche des foyers infectieux et leur éradication paraissent essentielles. Mais il reste à préciser si ces foyers représentent un facteur étiologique déterminant ou accessoire.

ZUSAMMENFASSUNG

Es wird ein kurzer Überblick über die Literatur und die herrschenden Meinungen über das nummuläre Ekzem gegeben.

84 Krankengeschichten mit dieser Diagnose wurden sorgfältig ausgewertet, wobei besonders die ätiologische Bedeutung der Fokalinfektion und die Behandlung berücksichtigt wurde. Die Ergebnisse erlauben keine Schlüsse hinsichtlich der Rolle der Fokalinfektion für die Ätiologie des nummulären Ekzems. Die Suche nach Foci und deren adäquate Behandlung scheinen jedoch von absolutem Wert beim nummulären Ekzem zu sein.

Ob die Fokalinfektion ätiologisch gesehen ein primärer Faktor ist oder ob sie nur einen zusätzlichen Faktor darstellt, bleibt ungeklärt.

RESUMEN

Se hace una breve revisión de la literatura y conceptos modernos del eczema numular.

Ochenta y cuatro casos de hospital con este diagnóstico han sido cuidadosamente estudiados y revisados, especialmente lo que se refiere al valor etiológico de las infecciones focales y al tratamiento. Los resultados no permiten concluir sobre el papel de la infección focal en la etiología de este tipo de eczema. Sin embargo, la exploración de focos infecciosos y su tratamiento adecuado parecen ser de absoluto valor en el eczema numular.

Pero continúa sin aclarar si la infección focal es un factor etiológico, estimulante o colaborador en el eczema numular.

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