DERMATOLOGY OF THE INFANT*

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Children under 3 comprise 9% of the cases in my private practice. Infancy, of course, is supposed to end at 2 years, but skin diseases do not always respect this boundary. Consequently I have extended it to 3 so as to broaden the perspective of my survey. Taking 2,000 consecutive White patients referred to me, 3.5% were under 1 year, 3% between 1 and 2 years, and 2.5% between 2 and 3. Four disease groups together make up roughly 70% of these cases, viz. infantile eczema together with infantile seborrhoeic dermatitis, 42%; papular urticaria, 14%; scabies, 6.5%; and pyodermas, 6.5%.

Dermatologists tend to be favoured with a certain type of infant patient and, in what follows, this selective emphasis will be apparent. My own offerings on this subject represent little more than one man's view of the dermatoses of White infants seen in consultation in Pretoria. It is hoped that they will make it simpler for those with other experiences to assess their observations from other places and populations within the Union.

ECZEMA

Eczema is the dermatosis of infancy *par excellence*. In my cases of eczema in children below the age of 3, only 10% were between 2 and 3, while 90% were under 2. Most authors apparently find it easier to classify the cases than I do. The clinical variations of eczema in infancy are almost as complicated as in adults. In most cases, one merely has to decide if the baby has infantile eczema or seborrhoeic dermatitis, and this can be done by referring to a table of comparative criteria. This is at any rate what one is often led to believe. Almost everything from 'acidity' (*suur*) rashes on the cheeks to severe generalized dermatitis must be brought home to one of these alternatives. In between these two extremes one may consider sudden morbilliform rashes when the baby touches the cat, 'sweat' and 'heat' rashes, eczematous reactions to non-specific traumata, scattered eczemas of a type seen in adults, fixed impetiginous eruptions, acute follicular exanthemata, etc., which would not readily be related to infantile eczema but for their occurrence in infants. Accredited treatments are similarly confusing to my mind. Paediatricians may refer confidently to vipenta drops, noctec, daxalan, kolpix D, happy-tappy crackers and so forth without always creating a clear impression of why and wherefore.

About a third of my cases refuse to be classified with ease. Here are some clinical features of these problem cases:

(*a*) A number of cases under this heading are mentioned in the sections on follicular disorders and impetigo.

(*b*) Lesions in the elbow and knee flexures are the starting point of a variety of types of disorder. They may start early or late in infancy. They may or may not itch, may be glazed or dry, smooth or lichenified, annular or flame-shaped, vaguely or sharply outlined, and may disseminate elsewhere with annular or poral eczematides, with outlying papules having a resemblance to insect bites. Anaemic haloes may surround many of the papules.

(*c*) It is commoner for seborrhoeic dermatitis to metamorphose into infantile eczema than for infantile eczema to develop features of an eczematide. Theories depending on coincidence to explain these interrelationships are rather strained.

(*d*) Cases of typical seborrhoeic dermatitis may show otherwise a perfect atopic constellation of associated features.

(*e*) As in adults, so may infants present a type of fixed eruption in seborrhoeic dermatitis.

(*f*) Scattered patchy eczemas are not rare, and may be virtually confined to the limbs. They may either lichenify or change to the picture of pityriasis alba.

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The next vexation comes from the explanations offered for these findings. However benign, modest or gracious a writer may be, it is still misleading to put in the foreground classifications that depend on things that the clinician cannot put to the test. A soothing dispenser of dogma is actually no trouble to take apart, but one may be diverted by false emphasis into thinking that many statements are secure which have been accepted without adequate support. Allow me to paraphrase some of the kinds of statement here which to my mind are open to objection.

Here is one about seborrhoeic dermatitis which bristles with unproven hypotheses: 'Seborrhoeic dermatitis is not primarily allergic, but may occur in allergic infants. The babies with seborrhoeic dermatitis are greedy feeders and eat more than the skin can handle, which causes aggravation of the rash.'

Here is another about atopic dermatitis which embodies some irrational ideas: 'Atopic dermatitis is an immunological disorder, in which immunological treatment attempts to get at the cause. Failures are due to the intervention of an additional X factor, whose intrusion does not invalidate the basic mechanism. The immunological mechanisms involved often require both higher quantities of the allergen and longer times for action than may normally be expected, but the original sensitizing substances may depend on what the mother was exposed to in pregnancy, or what the animal ate whose food products are eaten by the patient. Removing the offending substance is often followed only gradually by clinical improvement. Wool acts as an allergen by inhalation, picking out the weak spots in the skin. It also acts as a contact sensitiser. Itching is a constant symptom.'

My own treatments differ in no way from the empirically established methods, and there is little known on the subject that has not been adequately discussed by many writers. As others have done in the past, we are at present thinking of alterations in the ionic environment of the skin as a possible guide to treatment.

LICHEN URTICATUS (STROPHULUS; PAPULAR URTICARIA)

In Pretoria this is a disease which starts in the summer months, from November to February. I have good records of two summers, and the highest peak was reached in January, 1956. I have seen hardly any cases which started between April and October. The ages of my patients ranged evenly between 6 and 32 months, indicating that the age of the infant was of negligible importance compared with the time of year. Lichen urticatus is not a disease limited to infancy, and the cases occurring in childhood include patients with bullous prurigo, which lie outside our survey.

Regarding the cause, I have found that lichen urticatus of atopic origin cannot account for more than 5% of all lichen urticatus cases I have seen in infants. The parents have sometimes blamed water-melon, grapes, tomatoes, apricots and ice cream as causes. Now diet in lichen urticatus is a topic on which one may separate medical writers into the tender-minded and the tough-minded, just as one can do with attitudes on other subjects. The tender-minded will say: 'Let us try to get this baby well soon, and even if raw fruit is not the only cause, it will be wise to withhold it.' The tough-minded will think: 'Let us give this baby all the food and fruit that the parents think are bad for it and see what happens. If the rash fails to come out, the sooner we stop being hedged about by nonsense the better.' The tough-minded have seemingly won the day and have shown, despite the most suggestive evidence to the contrary, that lichen urticatus is unconnected with atopy or any article of diet. As one of the tough-minded has told me: 'Either grandmothers derive their observations from reading dermatological text-books or, if they don't, then the text-books are written by those with the mentality of grandmothers.'

Looking over my own cases there are several points which have persuaded me indirectly of the importance of insect bites in the aetiology. The seasonal factor has been noted already. I have seen several cases brought on by severe onslaughts from mosquitoes or fleas such as may happen if a mosquito net is left off for a night or if the family goes for a holiday to a flea-ridden farm or to the coast. It should be noted, though, that according to my observations, lichen urticatus may start more than a week after the first exposure to a strange bloodsucking population. Parents who hastily deny that the trouble is related to bites can seldom tell one how the baby's skin reacts to an actual mosquito bite. However, to prevent an insect sucking blood, one merely has to bind up a limb with elastoplast, and I have found that lichen urticatus heals and remains clear on the limb so protected. It is so simple that I would like more people to try it on their cases. In a few of my cases an anti-diphtheria inoculation seemed to bring on an attack of lichen urticatus, but the observations are too scanty to warrant conclusions.

For prophylaxis and treatment during infancy, one can usually insist on a mosquito net, though when one is outside the malaria belt, it is harder to get people to sleep under nets. Mosquito repellents, such as dimethylphthalate (Mylol) may be used, but do not always work, and some mothers object when the solution takes the paint off their finger nails. Besides these measures, I have been using a watery shake lotion with 2% phenol and 5% DDT to be applied twice daily in a thin layer to the whole skin surface. This is aimed at fleas and the itching. If the regime is strictly followed, there are seldom any new spots over the 10 days required for the old spots to heal.

IMPETIGO

Looking through my records of impetigo in infancy, it seemed justifiable to separate them into 3 groups. The *first* group includes the extensive cases in the first few weeks of life, viz. pemphigus neonatorum and Ritter's disease. In half a dozen of these cases personally treated, none of the dreaded septicaemic complications in Ritter's disease seemed imminent, and I have not seen grounds for the gloomy picture painted in the text-books. While in Ritter's disease the trouble usually starts somewhere on the head or the head mucosae, one of my cases began with a bullous impetigo of the buttocks containing a heavy pure infection of *B. proteus*. In treatment I have found aureomycin surgical powder useful, mainly because it is an antibiotic in powder form and also for the convenient shaker-container in which it is packed. It is doubtless worth while to have cultures and sensitivities of the organisms determined in advance, in case of complications.

The *second* group is the only one where impetigo was present in its typical form, as one sees it in childhood. It started at the end of the infancy period, from roughly the second year onward. The cases here are of the usual sort, running a short and manageable course.

The *third* group of my cases in which the diagnosis of

impetigo was made, was one which lay in the intermediate age-period, between 3 months and 2 years. From the clinical features and course many may regard the patients as having some phase of infected eczema. In some cases an eruptive follicular eczematide and something resembling epidemic follicular keratosis were associated, as well as the commoner infective flexural lesions resembling seborrhoeic dermatitis, For treatment I have been using a watery shake lotion, the formula of which was recommended by Prof. Miescher, containing 0.25% terramycin, 0.5% proflavine and 5% vioform. It forms a yellow cake which absorbs exudate, disinfects, and prevents spread of the infection. If practicable, I combine it with occlusion of the lesions.

SCABIES

The cases I see have sometimes been treated already with penicillin, cortisone and antihistamines without benefit. Most of the infants have acquired the infection from older school-going children in the house who attend to them. Native nurses are in my experience a less frequent source of infection. When there are cases of infected scabies in the house, it may be hard to prove that the baby's trouble is anything more than an infective eczema, which may persist after antiscabies treatment. The most useful single clinical clue to scabies in infancy is to my mind a septic condition of hands and feet, although the sepsis in itself may hamper recovery of the acarus, which is needed to prove the diagnosis. The most misleading single condition in diagnosis is a papulofollicular eczematide discussed below.

FOLLICULAR AND LICHENOID SYNDROMES

It has been mentioned above that some of the eczematides may turn into non-erythematous generalized scaling states which may resemble ichthyosis. Here I wish to mention two more predominantly non-erythematous conditions which are not rare, and may offer even more diagnostic trouble.

The simplest is an acute asymmetrical, centrifugal, fawn-coloured follicular-lichenoid and confluent dermatitis in infants of about a year or more. It is probably a poral eczematide. It starts usually on one buttock with a sheet of fine red-brown follicular lichenoid micropapules. Some central clearing with a suggestion of circinate lesions may become evident. Often the trouble then spreads in a diffuse broad zone for a variable distance down one thigh and leg, later involving the opposite buttock and thigh. I have also seen it start on one ankle and spread upward. There is seldom much irritation, at any rate not at first. When one thigh only was involved, I used to think of contact dermatitis to hand cream of the mother from carrying the baby with one arm, but have since abandoned the idea. Loewenthal, in discussing the problem with me, has suggested an infection whose spread was favoured by lying on the affected side in a soiled cot. Questioning the parents with this hypothesis in mind, it appeared that the rash spread down the leg that was usually uppermost in bed. This would relate the rash to sweating in some way. It reminds one of the statement of Kuno, that the body sweats particularly from the side lying uppermost when perspiration is stimulated during recumbency. A lotion of 3% resorcin has readily cured most of my cases, with or without an antibiotic ointment applied overnight.

Another condition of which I have seen a few examples is a fawn-coloured grouped follicular eczematide starting on the upper trunk in children between 1 and 2 years of age. Lichen scrofulosorum or pityriasis rosea may be suggested. Redness is variable. Scattered papules may also be numerous, resembling prickly heat, and changes to a warm climate may indeed induce an attack. In this, as in the foregoing syndrome, some of the larger scattered follicular papules may be more raised and white, and I have several times been deceived into thinking of early molluscum contagiosum or lichen urticatus. The eruption was also sometimes asymmetrical, and could spread over successive regions of the trunk and limbs in a slow progressive march, with progressive clearing in the parts earlier affected. Here again there was a tendency to form a diffuse *craquelé* dermatitis. My impression is that this type of eczematide is slower to spread and slower to heal than the foregoing, more liable to relapse if healed, and more liable to itch severely. These patients gave me no grounds as a rule to think that the disease was one of the ide eruptions.

The cases of both types mentioned here were seen outside the times at which lichen urticatus occurred. Some of these follicular disturbances were remarkably sudden in onset, and cleared within a few weeks. In 2 cases there was slight purpura with fawn-coloured staining of the skin. Epidemic follicular keratosis and purpuric eczematide were at times regarded with favour in the diagnosis of these cases. A focus of impetigo, flexural eczema or a sore throat preceded some of the widespread follicular rashes without one being able to tell what the relation might be. I have seen one or two examples of a similar sudden non-erythematous patchy and diffuse follicular ichthyosis and purpura in older children, which cleared within a few weeks without a definite diagnosis having been made. My patients in this group were treated similarly to those of the foregoing types, but with less success, and in one case meticorten was needed to control the itch.

OTHER CONDITIONS

Ichthyosis. I have seen only a few infants with undoubted ichthyosis vulgaris. These have started during the first year with a picture of follicular ichthyosis. They have not been 'allergic' children. The more typical cases start a little later in life. More common, though still infrequent, has been a picture of generalized *craquelé* dermatitis which has been part of an eczematide of infancy. These eczematides have tended to be of a type resembling pityriasis alba or of the gyrate variety, which have changed either spontaneously or with treatment into a non-erythematous general scaling. The condition is reversible, and is unrelated to true ichthyosis. It is important in the differential diagnosis of the xerodermas of infancy, particularly in the second year of life.

Pityriasis Alba. This complaint has always appeared to me to be an eczematide rather than an impetigo. Ringworm and leprosy have been considered in the differential diagnosis by general practitioners as a rule. In infancy there had not been any foregoing skin dryness. The clinical associations have all suggested a relationship with infantile seborrhoeic dermatitis. The disease may begin with the characteristic scurfy spots on the face and arms within the first year, and I have noted the characteristic deficiency of tanning in the spots at this early period as well. Most mothers have tried emollients and antibiotics without success before I see the baby. The best single treatment is to my mind one of the hydrocortisone-antibiotic combinations locally applied, though sometimes I

have been satisfied in mild cases with a resorcin or a coal-tar lotion. Pityriasis alba is far commoner in older children, and may be seen at times even up to the late twenties.

Sandworm (*Ankylostoma Braziliense Larva*). As soon as a child in the Transvaal can play outside, he is liable to get sandworm of the buttocks and perineum from sitting in damp sand. Sandpits, building sand, river-shore sand and sifted ground have all been responsible. My youngest patient was 13 months. Since sandworm causes an eosinophilic granuloma going down to the fat, I have used systemic meticorten in short courses with conspicuous lessening of the infiltration and itching in severe infestations. The worm can be killed with Lortat—Jacob's cryocautery provided the advancing end of the track is clear. It is undoubtedly the handiest method of freezing, since it is not very painful, and can be accurately applied to small areas on the perineum with ease. It permits freezing under pressure, and it is hard to believe that a worm larva in the epidermis can withstand —80°C for 10-15 seconds under 1 kg. pressure. Judging by results, 50-80% of tracks are abolished on one such treatment. A total of 1-5 treatments extending over several weeks may be needed to cure a case where the worms are intermittently active and one has to repeat a treatment that was unsuccessful earlier. I can imagine nobody who uses a cryocautery wanting to freeze with ethyl chloride again. Though I have no personal experience of them, the freons as refrigerants seem to share the disadvantages of ethyl chloride.

Geographical Tongue. I have seen 5 infants, 4 of them girls, with typical chronic migrating geographical tongue, and have been thus persuaded that its onset at any time within the first 2 years of life is not unusual. This fact is not mentioned in dermatological works, and the conditions deserves more study at all ages. Histological specimens from adults have shown, in my material, a polymorph-infiltrated necrobiosis in the tongue epithelium at the site of the milky advancing edge of the lesion. One of my infant cases had associated choking attacks from an intermittent oedema of the tongue. No other associated features were noted. I tried meticorten for 4 days (2.5 mg. *b.d.*) in one baby without result.

Nodular Allergide. I have had one case in a girl starting at the age of 6 months and persisting nearly a year, with a clinical picture of fixed white petaloid and papular infiltrations on the legs that became red at times. Clinically the diagnosis of urticaria pigmentosa was suggested, but the biopsy showed a nodular allergide. She had had recurrent tonsillitis since her 11th week.

Ringworm. Cats are the usual source of ringworm in infants, and so far I have isolated nothing but microsporon canis from the few cases seen. The age of onset obviously depends on when the baby first starts playing with the cat.

Alopecia Areata. I have seen a few cases of abortive alopecia areata in children just over 2 years of age. The loss of hair was characteristically incomplete and the patches ill-defined. Many may question the diagnosis.

Angiomas. Relatively few cases of angioma come my way, and I am in some doubt as to how other practitioners in South Africa treat them. A satisfactory situation would be the treatment of these cases by a critical dermatologist versed in radiotherapy who is prepared to follow the cases, publish and openly discuss his results, and work in a centrally placed paediatric clinic. With anything less than this we cannot be sure that the patients will get a square deal. Alternative schemes seem unlikely to succeed fully and an ideal scheme may also not easily be realized. Ever since radiologists found out that they were the country cousins of the atom scientist, therapeutic services have been liable all over the world to vicissitudes and explosions.

Other Tumours etc. The rarer conditions such as urticaria pigmentosa, naevoxanthoendothelioma etc. have no special place here, and everyone has seen his own group of wonders. Other varieties of moles, warts, pyogenic granulomas etc., possess to my mind no extra interest when they occur in infancy.

Urticaria and Angioneurotic Oedema. Urticaria and angioneurotic oedema are disorders seldom referred to me. The infants I have seen have appeared to develop the condition from inoculations and various soothing and teething medicines.

Erythema Multiforme. I have seen 2 severe cases in children of about 2 years of age, with a chronic course and no discoverable cause. The occasional case of toxicoderma from medicaments was also seen.

Pityriasis Rosea, Psoriasis. These conditions are rare, besides being difficult to identify under the age of 2. Several cases of pityriasis rosea may lurk in my group of generalized eczematides, as noted above. I have seen a small number of apparently genuine pityriasis rosea cases in infancy, in one of whom the mother developed the same condition 3 months later.

Acne of Infancy. I have had one typical case in a female starting at 10 months, and distinguished by a particularly slow evolution of the papulopustules over a month or two, before draining and forming depressed scars. There were no discoverable signs of tuberculosis, virilization or contact with oils. The name acne neonatorum is misleading. This disorder has escaped the notice of a recent author on paediatric dermatology despite its having been frequently described. Achromycin syrup worked fairly well in my patient in aborting the deep pustules.

SUMMARY

A survey is presented of the practical problems in the diagnosis and treatment of the dermatoses of infancy as seen in dermatological practice in the Transvaal.