

Cutaneous Defects In The Newborn

Elemile P. O, Joel-Medewase V. I, Fadero F. F, Oyedeji O. A

Department of Paediatrics,
College of Health Sciences,
Ladoke Akintola University of Technology, Osogbo, Osun State, Nigeria
Correspondence to: Oyedeji O. A, email:soltomoyedeji@yahoo.com

Abstract

Background: *There is a dearth of information especially in the African literature, on cutaneous defects in the new born. Anecdotal reports suggest that they are rare.*

Aim: *To determine the prevalence and types of cutaneous defects seen among babies delivered to mothers at the State hospital, Osogbo, South-Western Nigeria.*

Method: *Consecutive newborns admitted with their mothers in to the post natal ward between January 1st and March 31st 2006 were studied. The mothers were questioned about the ages and sexes of their babies as well as about any defects they had noticed on their babies' skin. Subsequently a thorough physical examination was carried out on all the babies. The information obtained was recorded in a proforma.*

Results: *Of the 132 babies studied 22(16.7%) had one or more forms of skin defects. The 22 babies consisted of 10 boys and 12 girls giving a male to female ratio of 1:1.2. The anomalies recorded in the study were supernumerary nipples in 8(6.1%), pre-auricular pits in 6(4.5%), sacral dimples in 3(2.3%), vaginal tags in 3(2.3%), accessory tragi cyst in 2(1.5%), aplasia cutis congenita in 1(0.8%) and redundant skin, in 1(0.8%). Two babies had double*

cutaneous defects. None of the defects seen was associated with any medical complications or underlying congenital anomalies. Regardless of their educational status, none of the mothers whose babies had defects had noticed them

Conclusion: *Cutaneous defects in the new born are not uncommon. The new born should be properly examined in order not to miss them. Further studies need to be done to follow up the affected babies to find out the course of the defects.*

Keywords: *skin, defects, neonates.*

Introduction

Skin lesions are common findings in the newborn. A good knowledge of the cutaneous lesions on neonates in a particular locality is imperative for the practicing physician because aberrations on the skin of newborns vary from physiological and transient to grossly pathological changes.¹ Cutaneous defects (CD) of the new born are diseases in which there is pathology in the morphology of the skin. These abnormalities may present as swellings or deficiencies in the surface of the skin. Common examples of such swellings include, thyroglossal cysts and accessory tragi, while examples of deficiencies or defects in the skin include dimples, branchial clefts, sinuses and constrictive bands.²

Examples of other forms of CD are aplasia cutis congenita and redundant skin in which there is a developmental absence of skin on the scalp and loose folds of skin respectively.²

There is a general dearth of information on CD in the newborn. This is probably because these defects are not usually associated with any serious complications, morbidity, or mortality and their effects are usually limited to cosmetic appearances. Most of the previous studies on the new born skin focused on the minor evanescent lesions such as miliaria, mongolian spots and erythema toxicum.^{3,4} To our knowledge there is no previous study on the newborn skin that has focused mainly on Cutaneous defects. Evidence from most of these previous studies suggests that cutaneous defects are very rare. However our personal experiences in clinical practice are contrary to these findings. This prompted our desire to objectively determine how rare or common cutaneous defects are in the newborn.

Materials and methods

Consecutive newborns admitted with their mothers in to the post natal ward at the State Hospital, Osogbo, South-Western Nigeria, between January 1st and March 31st 2006 were studied. Informed consent was obtained from all the parents before recruiting them. Details such as age and sex, of the baby, educational status of the parents and specific questions on whether or not the mother had noticed any abnormality on the skin of the baby, were obtained and recorded in a proforma. This was followed by a thorough physical examination of the babies by one of us (O.O.A), between the first and seventh day post delivery. The babies were stripped naked in a well lit warm room and examined to determine their gestational age and detect the

presence or absence of cutaneous defects. Babies with cutaneous defects were also further examined for the presence of dysmorphic features, congenital anomalies and possible associated medical complications.

All the defects observed in the neonates were recorded in a proforma. Identification of defects was based on characteristic descriptions from standard texts and atlases.^{2,5} Karyotyping was not done due to a lack of the facility.

The data was analyzed using the SPSS for Windows software version 11.0 (SPSS Inc., Chicago, IL). The results were also expressed as ranges, simple ratios and percentages in form of simple descriptive statistics. Pearson chi-squared (χ^2) equal or less than 0.05 was taken as statistically significant.

Results

Total Population Studied

One hundred and thirty two babies were studied, 71 were boys and 61 girls, giving a male to female ratio of 1.2:1. The ages of the babies ranged from 1 to 7 days, and their mean age was 3.6 days. The ages are shown in Table 1. One hundred and eighteen (89.4%) of the babies were delivered at term, while 14(10.6%) were preterm. Of the 132 babies studied 22 (16.7%) had cutaneous anomalies. Two of the 22 babies had double cutaneous defects, thus making the total number of defects 24. The twenty two babies with cutaneous defects consisted of 10 boys and 12 girls, giving a male to female ratio of 1:1.2. Twelve (19.7%) of the 61 girls studied had cutaneous defects compared with the 10(14.1%) of the total 71 boys. $\chi^2 = 0.390$, $P = 0.53$. Yate's correction was applied and the differences were not statistically significant.

Types of anomalies

The most common CD noticed in this study was supernumerary nipples followed by pre-auricular

Table 1: Age distribution of the babies with cutaneous defects

| Ages in days | Number of babies | Percentage of total 22 |
|---------------------|-------------------------|-------------------------------|
| 1 | 5 | 22.7 |
| 2 | 2 | 9.1 |
| 3 | 5 | 22.7 |
| 4 | 1 | 4.5 |
| 5 | 4 | 18.2 |
| 6 | 4 | 18.2 |
| 7 | 1 | 4.5 |

pits. These two anomalies account for more than half of the defects found. The other cutaneous defects recorded are sacral dimples, vaginal tags, aplasia cutis congenita and redundant skin folds. Of the two babies with double cutaneous defects, the first had pre-auricular pit and accessory tragi, while the other had supernumerary nipples and aplasia cutis congenita. The types of cutaneous defects seen are shown in Table 2

Sex distribution of babies studied

Supernumerary nipples and aplasia cutis congenita were found predominantly in boys while vaginal tags, accessory tragi and redundant skin had a female predilection. Pre-auricular pits had no sex predilection. The sex distribution of the lesions is shown in Table 3

Table 2: Types Of Cutaneous Defects

| Cutaneous Defects | Number of cases seen | Percentage of 24 cases | Percentage of 132 |
|--------------------------|-----------------------------|-------------------------------|--------------------------|
| Supernumerary nipples | 8 | 33.3 | 6.1 |
| Pre-auricular pits | 6 | 25.0 | 4.5 |
| Sacral dimple | 3 | 12.5 | 2.3 |
| Sacral dimple | 3 | 12.5 | 2.3 |
| Accessory tragi cysts | 2 | 8.3 | 1.5 |
| Aplasia Cutis Congenita | 1 | 1 | 0.8 |
| Redundant folds | 1 | 1 | 0.8 |
| Total | 24* | 100.0% | 18.3 |

* Note: Two of the babies had 2 cutaneous defects each, thus making the total number of cutaneous defects 24 in the 22 babies.

Table 3: Sex Distribution Of The Cutaneous Defects

| Anomalies | Number of male affected | Number of female affected |
|-------------------------|-------------------------|---------------------------|
| Supernumerary nipples | 6 | 2 |
| Pre-auricular pits | 3 | 3 |
| Sacral dimple | 1 | 2 |
| Sacral dimple | 0 | 3 |
| Accessory tragi cysts | 0 | 2 |
| Aplasia Cutis Congenita | 1 | 0 |
| Redundant folds | 0 | 1 |

Location of the defect on body surface

The supernumerary nipples were located on the milk line and usually spanned the thorax to the upper abdomen, while the pre-auricular pits were located anterior to the ear; it was bilateral in a case and unilateral in the remaining cases. Accessory ear tragi were also located anterior to the ear. Vaginal tags and sacral dimples were found on the external female genitalia and sacral areas of the body respectively. Aplasia Cutis Congenita lesions were located symmetrically on the radial border of both wrists in a neonate while the posterior aspect of the neck was involved in the baby with the redundant folds.

Educational status of the mothers and observation of anomalies

The educational status of the mothers of the babies studied were grouped into 3

Ten mothers were recorded in the group of those with no formal education, uncompleted primary school or completed primary school. The numbers of mothers who completed primary six or had incomplete secondary school training or completed secondary school and or had equivalent training with any of these levels of education were 7. The remaining mothers who had post secondary school training

were 5.

Associated complications, congenital defects and need for referral.

No medical complications were associated with any of the cutaneous defects. None of the studied babies was found to have an underlying congenital defect. None of the parents, whose babies had CD saw the need for a review by a plastic surgeon.

Discussion

Cutaneous birth defects are not uncommon findings in Nigerian neonates, as has been shown in the present study. The prevalence figure of 16.7% obtained in this study is much more than that obtained from previous studies.^{4,6-8} The values obtained from these previous studies were in the range of 0-3.8%, thus, suggesting that cutaneous defects are rare in newborn. The high prevalence figure obtained in the present study may be as a result of differences in the methodology and geographical areas where the studies were carried out. Concerning methodologies, the aim of the present study was to identify and document cutaneous defects, so that we may have found and recorded more. It is quite possible that some of these defects were missed in the

previously cited studies, because the researchers were not primarily looking for them.

Supernumerary nipples and pre-auricular pits were the most common cutaneous defects observed in the present study. A previous study at Ile-Ife however reported a lower prevalence of 0.3% each for these defects.⁹ The differences in the prevalence figures obtained for supernumerary nipples and pre-auricular pits may again be explained by differences in methodology and location. Supernumerary nipples were found to be the most common cutaneous defect. Fortunately supernumerary nipples rarely undergo malignant change. However, the CD may need to be excised in future for cosmetic reasons. Pre-auricular pits and sinuses have sometimes been associated with other anomalies of the ear and face. On the other hand Accessory tragi may occur as isolated defects or in chromosomal first branchial arch syndromes.² Our findings that pre-auricular pits and accessory tragi are very common defects are consistent with those of a previous study.⁸ Our finding of a predilection of skin dimpling commonly occurring at the sacral region agrees with findings of some other authors.^{2,10}

Sacral dimples and vaginal tags affected equal number of babies in the present study. Also, Aplasia Cutis Congenita and redundant folds accounted for less than 10% of the remaining defects. There is no information on these cutaneous defects in most of the previous studies on the skin in neonates.⁶⁻⁹ These defects though not as common as those previously referred to, still occur. Often times they are innocuous, however once in a while a sacral dimple may be a pointer to spinal dysraphism.¹⁰ Redundant skin folds may sometimes be associated with some syndromes such as Turners, Downs and Noonans. Detection of these anomalies is therefore not only for record keeping purposes, but also to assist in a proper evaluation and management of the affected neonate.

The mothers of babies with cutaneous defects, irrespective of their educational status did not know that their babies had these anomalies prior to being examined. It is possible that since 54.5% of the babies were in their first 3 days of life, it was yet early for the mothers to have noticed the defect. On the other hand the mothers may have regarded them inconsequential and even perhaps normal. Thus we see that none of the mothers saw any reason for a plastic surgical review. Cutaneous defects may be missed, if a careful comprehensive examination of the baby is not performed before discharge from the hospital. It is therefore imperative for the physicians to be conversant with these defects and the usual areas of the body where they are found. No associated medical complications or underlying chromosomal anomalies were present in the present study. It is possible that there were no such conditions; also it is possible that though present they were missed either because of our inability to investigate or follow up these babies.

In conclusion, cutaneous defects of the newborn are not rare. Large scale follow up studies need to be conducted in future in this field in order to detect other cutaneous defects and to find out if there are any underlying chromosomal defects or associated complications. There is also a need to determine if these defects have any adverse effect on the health or quality of life of the affected babies.

Acknowledgement

We wish to thank all our patients and their parents for their cooperation. We appreciate the contributions of Prof. G.A Oyedeji on this manuscript also, the contributions of Prof. Emmanuel are gratefully acknowledged.

References

2007; 12:93-95.

1. Oyedeji OA, Joel- Medewase VI, Ogunlesi TA, Oyedeji GA. Dermatoses in the Nigerian newborn. Research Journal of Medical Sciences. 2008; 2:19-22
2. Darmstadt GL. Skin. In: Behrman RE, Kliegman RM, Jenson HB (eds.) Nelson's Textbook of Pediatrics 16th Edition. Philadelphia. W.B Saunders Company 2000; 1970 - 74.
3. Onayemi O, Adejuyigbe E.A, Torimiro S.E.A, Oyelami O, Jegede O.A. Prevalence of Mongolian spots in Nigerian children in Ile-Ife, Nigeria. Niger J Med 2001;10: 121-3
4. Moosavi Z, Hosseini T, One-year survey of cutaneous lesions in 1000 consecutive Iranian newborns. Pediatr Dermatol 2006;23:61-3
5. Olumide Y.N. Neonatal skin In: Olumide YMA (ed) A pictorial self instructional manual on common skin diseases. Lagos, Unilag Press 1993: 3-4
6. Odueko O.M, Onayemi O, Oyedeji G.A A prevalence survey of skin diseases in Nigerian children. Niger J Med 2001; 10: 64-7
7. Nobby B, Chakraborty N Cutaneous manifestations in the New born. Indian J Dermatol Venereol and Leprol. 1992;58:69-72
8. Tsai FJ, Tsai CH. Birthmarks and congenital lesions in Chinese new born. J Formos Med Assoc 1993;92:838-41
9. Onayemi O, Adejuyigbe E.A, Jegede O.A, Oyelami O, Torimiro S.E.A. A hospital survey of dermatoses and developmental defects in the Nigerian neonates. Niger Med Pract. 1999; 37: 85-7
10. Lee A.C.W, Kwong N.S, Yong Y.C. Management of sacral dimples detected on routine new born examination. HK J Paediatr