



AN OBSERVATIONAL CROSS-SECTIONAL STUDY OF PHYSIOLOGICAL AND PATHOLOGICAL CUTANEOUS MANIFESTATIONS IN NEONATES

Dr Simran Salian

Post Graduate Trainee, Department Of Dermatology, kvg Medical College And Hospital, Sullia, Karnataka.

Dr Badrinath N

Professor, Department Of Dermatology, KVG Medical College And Hospital, Sullia, Karnataka.

Dr Spoorthi B

Post Graduate Trainee, Department Of Dermatology, KVG Medical College And Hospital, Sullia, Karnataka.

ABSTRACT

Introduction: The rapidly adapting neonatal skin, being anatomically and physiologically distinct from an adult, may exhibit a variety of entities, ranging from mild self-limiting to the severe life-threatening ones. The transition of neonatal skin from an aqueous to an air-dominant environment results in various changes, both physiological and pathological. Physiological and pathological dermatoses should be differentiated to avoid unnecessary treatment and psychological distress to parents. The present study was carried out to determine prevalence and patterns of physiological and pathological cutaneous manifestations among neonates in a tertiary care center. **Materials and Methods:** This hospital-based, descriptive, observational study was carried out at a tertiary care hospital over a period of 4 months. After due informed consent, a total of 100 neonates delivered during this time were included in the study. A detailed history was taken, and dermatological examination of each neonate was carried out. Laboratory procedures were performed to confirm diagnosis if required. Data were collected in a pre-designed proforma. **Results:** Out of 100 newborns, 74% were male and 26% female. 96% had physiological changes and 54% had pathological changes. The physiological skin changes milia (24%), sebaceous hyperplasia (1%), physiological desquamation (10%), physiological jaundice (58%). Cutis marmorata, harlequin skin changes, and lanugo hair were seen more in low-birthweight and preterm neonates. Similarly, Erythema toxicum neonatorum (8%), acrocyanosis (10%) and infections were noted, and were significantly associated with birthweight less than 2.5 kg. **Conclusion:** Most of early neonatal dermatoses are physiological and transient in nature. Hence, it is important to identify and differentiate them from other serious conditions, thereby avoiding unnecessary diagnostic and therapeutic procedures and providing reassurance to over enthusiastic dermatologists, pediatricians, and parents.

KEYWORDS :

INTRODUCTION

The first four weeks of life outside of the womb are known as the neonatal phase. Neonatal skin is different from adult skin in a number of ways. The rapidly adapting neonatal skin, being anatomically and physiologically distinct from an adult, may exhibit a variety of entities, ranging from mild self-limiting to the severe life-threatening ones. The transition of neonatal skin from an aqueous to an air-dominant environment results in various changes, both physiological and pathological.

Skin thickness in newborns ranges from 40% to 60% that of skin in adults. It produces less perspiration and has weaker intercellular bonds. A variety of symptoms ranging from mildly pathological (such as the physiological Mongolian spot and temporary eruption known as Erythema toxicum neonatorum) to very pathological Neonatal lupus erythematosus is visible in newborns' skin. Most neonatal cutaneous lesions are physiological and don't need treatment¹.

However, these don't just worry parents; they also worry doctors who aren't accustomed to these skin abnormalities in newborns. In newborns, it's important to distinguish between benign and clinically significant skin lesions.

Congenital melanocytic nevi are clinically significant due to the likelihood of developing malignant melanoma in the future². Pigmented birthmarks like Mongolian spots are benign and always go away after a few years. In order to prevent unneeded therapy for the neonates and give their parents confidence in a positive prognosis for these skin manifestations, it is crucial to be aware of the temporary skin lesions in newborns and distinguish them from other significant conditions³. Additionally, newborn skin alterations exhibit a great deal of regional and racial diversity.

The present study was carried out to determine prevalence

and patterns of physiological and pathological cutaneous manifestations among neonates in a tertiary care center.

METHODS

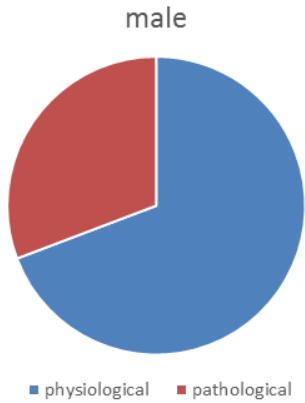
With institutional ethical approval, a cross-sectional, prospective investigation was carried out at a hospital. After obtaining the parents' permission, a thorough medical history was obtained, including information on the mother's age, parity, history of maternal sickness, and use of drugs throughout pregnancy. It was noted the delivery method and any consanguinity history. One hundred newborns were thoroughly examined in the daylight, and the morphology of skin lesions and other findings were noted.

Each instance also included the sex, birth weight, age at examination, and birth order.

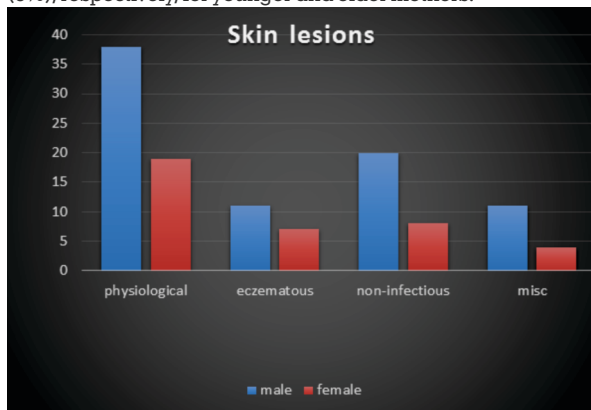
The duration, onset, and progression of the lesion, the neonate's immunisation regimen, and any additional treatments administered were all noted in the history. From head to toe, the baby underwent a general examination that measured things like length, head and chest circumference, icterus, clubbing, respiration rate, and temperature. The newborn was examined on the skin for any lesions. The location and how the lesions, whether localised or generalised, were distributed were documented. Eyes, including the sclera and upper and lower palpebral conjunctiva, were examined.

The buccal mucosa, tongue, lips, and palate of the mouth were all inspected. The mucosa of the nasal and genital tracts were checked for lesions. Colour, texture, and density of the hair were all assessed. We checked the colour and brittleness of the nails. For each newborn, a comprehensive systemic examination was performed.

RESULTS



In this study, we included a 100 neonates that presented to the OPD/ examined in IP for physiological and pathological skin changes. Of these, 70 (70%) males and 19 (19%) females out of 100 neonates were born at term, 9 (9%) preterm, and 2 (2%) post-term, respectively. Neonatal weight ranged from 2.50 kg in 58% of cases to >2.50 kg in 42%; history of consanguinity was present in 44% of cases but lacking in 56% of cases. A caesarean section was used to deliver 31 (31%) and 69 (69%) of the newborns, respectively. The majority of moms, 84 (84%) were in the 20–30 year age range, followed by 13 (13%) and 3 (3%), respectively, for younger and older mothers.



The majority of cutaneous lesions in newborns were physiological, accounting for 143 (57.0%), followed in decreasing order by eczematous eruptions (50 (18.2%), transitory, non-infectious diseases (28 (10.2%), birthmarks (9 (9.1%), and others (15 (5.5%).

The majority of newborns have multiple physiological skin lesions, with 24 (24%) of them having Mongolian spots, of whom 16 (16%) were female and 8 (8%) were male. The lumbosacral region was the most frequent site of placement, followed by the buttocks and extremities. 22 (22%) of the newborns had milia, which were most frequently found across the forehead.

Ten (10%) full-term and four (4%) preterm infants showed physiological scaling. One preterm baby (1%), who also had Epstein pearls, did not have hypertrichosis. Three of the female neonates had vaginal bleeding or discharge. Another frequent neonatal observation is hyperpigmentation, and we found that Mongolian patches were typically the culprit.

Pathogenic Alterations

In 6 (6%) males, erythema toxicum neonatorum was observed. Two (2%) full-term newborns were affected by it. 25 neonates (25%) with eczematous eruptions and scaling, of which 16 were premature, were seen. It was determined that this difference between term and preterm infants was statistically significant. There were 32 neonates with nappy dermatitis, the majority of them were male.

Congenital melanocytic nevi and sebaceous nevi were two examples of pigmentary birthmarks that were observed in one (1%) newborn who was a male infant.

Erythema toxicum nodosum (8%), acrocyanosis (10%), and were significantly associated with birthweight less than 2.5 kg. Neonatal acne in 6 (6%), epidermolysis bullosa simplex in 1, Addisonian pigmentation in 1, and staphylococcal scalded skin disease in 1 (1%), were among the other neonatal dermatoses that were seen.

DISCUSSION

It's essential to recognize typical events and to distinguish them from the neonate's more serious cutaneous diseases.

The skin lesions that were most frequently observed in this study were Mongolian spot, napkin dermatitis, and Milia. The frequency of skin lesions is comparable to the findings of the earlier investigation. except for napkin dermatitis, which has a significant frequency (32%) in the current study,^{5,8,9,13}

The percentage of Mongolians Spots in Indians ranges from 72 to 89%^{4,10,11,12}. However, in the current study, ONLY 24% of babies had this birthmark, contrary to the results of the study done by Dash et al.⁴.

38 neonates (38%) were found to have diaper dermatitis, with the perineal area and buttocks being the most prevalent sites of involvement. They affect 4 to 35% of newborns and their prevalence triples in infants who have diarrhea. Wearing a soiled diaper for an extended period of time is the main cause of napkin dermatitis. Neonatal skin can become irritated by prolonged moisture, abrasion, and ammonia compounds generated through urine. Napkin dermatitis can also be caused by soap and detergent residue that is left on cloth diapers after washing. The skin in the buttocks and perineal area may be elevated or swollen, with erythematous papules and occasionally pustules. The rash may make the newborn uncomfortable and in pain, which may make them fussy. The primary consequence of serviette dermatitis is thought to be a secondary infection.

CONCLUSION

Most of early neonatal dermatoses are physiological and transient in nature. Hence, it is important to identify and differentiate them from other serious conditions, thereby avoiding unnecessary diagnostic and therapeutic procedures and providing reassurance to overenthusiastic dermatologists, pediatricians, and parents.

REFERENCES

1. Chang MW, Orlow SJ. Neonatal dermatology. In : Freedberg IM, Eisent AZ, Wolff K, Austen KF, Goldsmith LA, Katz SL, editors. Fitzpatrick's dermatology in general medicine. 6th Ed. New York: Mc Graw – Hill; 2003.p. 1366-86.
2. Dohil MA, Bauh WP, Vascular and pigmented birthmarks. Peadiatr Clin N Am 2000;47:783-810.
3. Darmstadt GL, Dinulous JG, Neonatal skin care. Pediatr Clin North Am 2000;47(4):757-82.
4. Dash K, Grover S, Radhakrishna S, Vani M Clinicoepidemiological study of cutaneous manifestations in the neonate, In J Dermatology Venereal Leprol 2000;66:26-28.
5. Rivers JK, Frederickson PC, Dibdin C. A prevalence survey of dermatoses in the Australian neonate. J Am Acad Dermatol 1990;23(1):77-81.
6. Shajari H, Shajari A, Sajadian N, Habiby M. The incidence of birthmarks in Iranian neonates. Acta Medica Iranica 2007;45(5):424-426.
7. Hidano A, Purwoko R, Jitsukawa K. Statistical survey of skin changes in Japanese neonates. Pediatr Dermatol 1986;3:140-144.
8. Ferahbas A, Utas S, Akcakus M, Gunes T, Mistik S. Prevalence of cutaneous findings of hospitalized neonates: a prospective observational study. Pediatr Dermatol 2009;26:139-142.
9. Pruksachatkunkorn C, Duarte AM, Schachner LA. Skin lesions in newborns. Int Pediatr 1999;14(1):28-31.
10. Kulkarni ML, Singh R. Normal variants of skin in neonates. Indian J Dermatol Venereol Leprol 1996;62:83- 86.
11. Meenakshi S, Surjeet K, Madhu N. Dewan SP Cutaneous lesions in newborn. Indian J Dermatol Venereol Leprol 2002;68:334-337.
12. Nanda A, Kaur S, Bhakoo ON, Dhall K. Survey of cutaneous lesions in Indian newborns. Pediatr Dermatol 1989;6:30-42.
13. Moosavi Z, Hosseini T. One year survey of cutaneous lesions in 1000 consecutive Iranian newborns. Pediatr Dermatol 2006;23:61-63.