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Cutaneous Findings in Neonates: A Clinical Study from a Tertiary Care Center

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ABSTRACT

The neonatal period, defined as the first 28 days of life, involves rapid adaptation of the skin to extrauterine conditions. Neonates commonly exhibit a variety of skin lesions, which may be transient, physiological, or pathological. Early identification of these conditions is essential for proper management, relieving parental anxiety and avoiding unnecessary treatments. A cross-sectional study was conducted over 18 months (January 2019 to June 2020) at Bhaskar General Hospital, Yenkapally, involving 400 neonates. Data collection included demographic details, gestational age, birth weight, parity and maternal history. Neonates underwent detailed dermatological examinations with follow-ups within 28 days if additional skin changes were noted. Data were analyzed using SPSS version 26.0, with descriptive statistics applied to summarize findings. Out of 400 neonates, 276 (69%) exhibited cutaneous lesions. The most common findings included: Mongolian spots: 194 cases (48.5%), Physiological jaundice: 79 cases (19.75%, Sebaceous hyperplasia: 48 cases (12%). Lesions were observed in 69.4% of term, 66% of preterm and 66% of post-term neonates. Lesions were more common in neonates ≥2.5 kg (89%) compared to <2.5 kg (11%). Higher incidence of lesions was noted in neonates born to primigravida (69%) and second gravida (70.4%). Maximum cases (69.8%) occurred in neonates born to mothers aged 21-25 years. Cutaneous lesions are common among neonates, with Mongolian spots being the most prevalent. While most lesions are physiological or transient, recognizing and distinguishing these from pathological conditions is essential for timely intervention and parental reassurance.

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Key Words
Cutaneous findings, neonates, tertiary centre

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INTRODUCTION

The first 4 weeks (28 days) of extrauterine life is referred to "Neonatal period" or "Newborn period". Neonates can be term (between 37 and 42 weeks of gestation), preterm (before 37 weeks of gestation), post term (after 42 weeks of gestation)[1,2]. The skin of new born rapidly adapts to the changing environment and may exhibit a variety of lesions which may be transient, physiological or pathological. Early differentiation of these conditions is necessary to properly diagnose the benign physiological conditions and other pathological disorders such as infections or genodermatoses, which need proper intervention and treatment. This would thus be helpful in relieving the anxiety of the parents and avoiding unnecessary expenditure on treatments not otherwise required. The neonate skin differs from the adult skin by being thinner, less hairy and with weaker dermo-epidermal attachment. The full term newborn is predisposed to various physiological and pathological dermatoses even though they have a functionally mature skin. The early recognition is important to distinguish these lesions from more serious disorders[2-4]. In the normal term infant, the skin is soft, wrinkled, velvety and covered with a greasy yellow white material, the vernix caseosa, a mixture of desquamating cells and sebum. The body surface of the newborn will be less pigmented during the neonatal period compared to later in life. But certain areas in body like linea alba, areolae and the scrotum are often deeply pigmented because of high circulating levels of maternal and placental harmones. Superficial cutaneous desquamation or physiological scaling of new born occurs in up to 75% of normal neonates. Hence study was undertaken to know the incidence of cutaneous lesions in the neonatal period among the newborns delivered at Bhaskar General Hospital, Yenkapally.

MATERIALS AND METHODS

It was a Cross sectional study from January 2019-June 2020 (18 months) among 400 cases using (Formula-4pq/L2) at Bhaskar General Hospital, Yenkapally, Moinabad.

Ethical Clearance: Obtained from Institutional Ethics committee, Bhaskar General Hospital, Yenkapally.

Inclusion Criteria:

- Newborns delivered in the department of Obstetrics and Gynecology, Bhaskar General Hospital, Yenkapally.
- Neonates (<28 days old) presenting in outpatient department of DVL, Bhaskar General Hospital, Yenkapally.
- Parents of neonates who were willing to give consent for both physical examination and photographs.

Exclusion Criteria: Parents of neonates who were not willing to give consent.

Collection of Data: Newborn was examined within 24 hrs of birth. General physical, systemic and dermatological examination (skin, mucosa, hair and nails) was conducted. Informed written consent was taken from the parents for physical examination and photographs. The newborn was examined everyday till the day of discharge. Parents were counselled to bring the neonate to outpatient department of DVL at Bhaskar General Hospital, if they note any skin changes within 28 days of birth. The identity of neonate was concealed and the confidentiality was maintained. Details of the neonate like gender, birthweight, gestational age, maternal age, parity, consanguinity and mode of delivery were recorded. History of the maternal illnesses like fever, respiratory tract infection, viral infection, diabetes mellitus, hypertension, hypothyroidism etc, during the period of pregnancy was noted. The hospital records and case sheets were also referred for additional information. The age of the mother was calculated to the nearest completed year and the age groups of the mothers were categorised in an interval of 5 years. The neonates were classified according to maturity into preterm (<37weeks), term (37-42 weeks) and postterm(>42 weeks). Based on birth weight, neonates were classified into two groups i.e <2.5kgs (up to and including 2499 grams) and greater than or equal to 2.5 kgs. The cutaneous lesions were categorized into Physiological, Transient and noninfective, Nevi, Infections, Genodermatoses etc. Cutaneous lesions so found on examination were confirmed and diagnosed and managed where required. Appropriate investigations like blood counts, gram stains, swabs for microbiological study and other relevant investigations when indicated were performed. Neonates with specific dermatological problems were followed up at department of DVL at Bhaskar General Hospital.

Statistical Analysis: Data were analyzed using SPSS version 26.0. Mean, standard deviation, median and interquartile ranges were used to summarize continuous variables. Categorical variables were expressed as frequencies and percentages.

RESULTS AND DISCUSSIONS

Table 1: Distribution of Lesions According to Type

	Total	
Cutaneous Lesions	**Number**	**Percentage**
Mongolian Spots	194	48.50
Physiological jaundice	79	19.75
Sebaceous Hyperplasia	48	12.00
ETN	48	12.00
Physiological desquamation	34	8.50
Neonatal acne	25	6.25
Miliaria	23	5.75
Milia	21	5.25
Obstetric trauma	14	3.50
Vaginal discharge	07	1.75
Epstein pearls	06	1.50
Increased pigmentation on finger tips	05	1.25
Congenital candidiasis	04	1.00
Seborrhiec dermatitis	04	1.00
CALM	04	1.00
Hypertrichosis	03	0.75
Nevi	02	0.50
Diaper rash	02	0.50
Hyperpigmentation of scrotum	02	0.50
Cutis marmorata	02	0.50
Hemangioma	01	0.25
Meningomyelocele	01	0.25
Epidermolysis bullosa simplex	01	0.25
Aplasia cutis congenita	01	0.25
Harlequin Ichthyosis	01	0.25
Nevus depigmentosus	01	0.25
Nevus anemicus	01	0.25
Cleft lip	01	0.25
Others	14	3.50
Total	549	100

As per (table 1) Out of 276 cutaneous lesion cases, mongolion spots were seen in a maximum of 194 cases, followed by physiological jaundice 79, sebaceous hyperplasia-48, erythema toxicum neonatarum-48, physiological desquamation-34, neonatal acne-25, miliaria-23 and milia in 21 cases. The least number were seen in hemangioma, meningomyelocoele, Epidermolysis bullosa simplex, Aplasia cutis congenita, Harlequin ichthyosis, nevus depigmentosus, nevus anemicus, cleft lip with 1 (0.003%).

Table 2: Distribution Based on Birth Weight

Cutaneous Lesions	**WT <2.5**		**WT≥2.5**	
	N=56	**%**	**N=344**	**%**
Mongolian Spots	20	35.7	174	50.5
Physiological jaundice	10	17.8	69	20.0
Sebaceous Hyperplasia	06	10.7	42	12.2
ETN	04	7.1	44	12.7
Physiological desquamation	06	10.7	28	8.1
Neonatal acne	04	7.1	21	6.0
Miliaria	03	5.3	20	5.8
Milia	02	3.5	19	5.5
Obstetric trauma	02	3.5	12	3.5
Vaginal discharge	00	00	07	2.0
Epstein pearls	00	00	06	1.7
Increased pigmentation on finger tips	00	00	05	1.4
Congenital candidiasis	00	00	04	1.2
Seborrhiec dermatitis	00	00	04	1.2
CALM	01	1.8	03	0.9
Hypertrichosis	00	00	03	0.9
Nevi	00	00	02	0.6
Diaper rash	00	00	02	0.6
Hyperpigmentation of scrotum	00	00	02	0.6
Cutis marmorata	01	1.8	01	0.3
Hemangioma	00	00	01	0.3
Meningomyelocele	00	00	01	0.3
Epidermolysis bullosa simplex	01	1.8	00	00
Aplasia cutis congenita	00	00	01	0.3
Harlequin Ichthyosis	00	00	01	0.3
Nevus depigmentosus	00	00	01	0.3
Nevus anemicus	00	00	01	0.3
Cleft lip	00	00	01	0.3
Others	03	5.3	11	3.2

Out of 400 newborns, 344 were weighing ≥2.5 kg and 56 weighed <2.5 kg.Of these 276 had cutaneous lesions. Among them, 245(89%) of 276 babies weighing ≥2.5 Kg had cutaneous lesions as compared to 31 (11%) of 276 low birth weight babies as shown in (table 2).

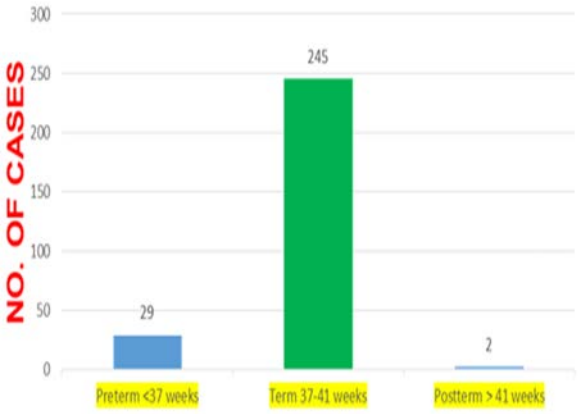

Fig. 1: Distribution of Lesions According to Gestational Age

Out of 400 newborns, 353 were term, 44 preterm and 3 post term babies. Among them 245(69.4%) of 353 term babies had lesions, 29(66%) of 44 preterm babies had lesions and 2(66%) of 3 postterm babies had cutaneous lesions as shown in (fig. 1).

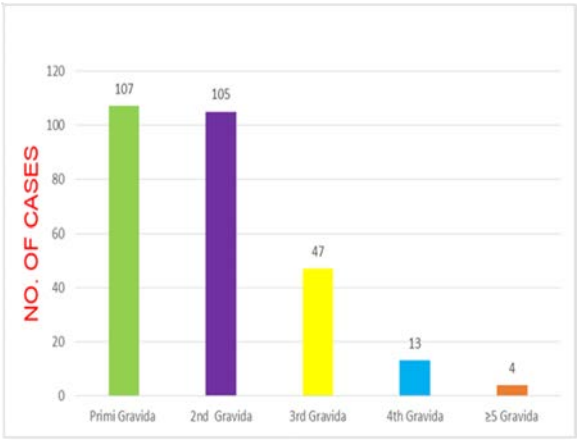

Fig. 2: Distribution of Lesions According to Parity

Out of 400 newborns, 155 were born to primigravida, 149 to 2nd gravida, 75 to 3rd gravida, 17 to 4th gravida and 4 to ≥5th gravida mothers. 276 out of 400 had cutaneous lesions, among them 107 (69%) of 155 born to primigravida, 105 (70.4%) of 149 were born to 2 gravida, 47 (62.6%) of 75 were born to 3rd gravida, 13 (76.4%) of 17 were born to 4th gravida and 4 (100%) of 4 babies born to 5th or more gravida had cutaneous lesions.

Table 3: Distribution of Lesions According to Age of Mother

Age of Mother (Years)	Babies with Cutaneous lesions, N=276	
	Number	%
16-20	45	16.3
21-25	188	69.8
26-30	39	14.1
31-35	04	1.4
Total	276	100

As per (table 3) out of 400 neonates, 62 were born to mothers in age group of 16-20 years, 269 were born to mothers in age group of 21-25, 62 were born to mothers in age group of 26-30 and 7 baby's were born to mothers with age 31-35 yrs as shown in (Table 3). Maximum number of babies with cutaneous lesion 188(69.8%) were born to age group of 21-25 years age group.

Table 4: Distribution of Lesions According to Maternal Illness

Illness	Cutaneous Lesions, N=276	
	Number	%
Maternal illness	56	20.2
No maternal illness	220	79.8
Total	276	100

As per (table 4) out of 400 newborns, 67 were born with history of maternal illness while 323 were born with no maternal history of illness.

Fig. 3: Meningomyelocele

Fig. 4: Harlequin Ichthyosis

A variety of dermatoses are seen in newborns during the neonatal period. In this study, Mongolian spots were commonest skin lesion observed with maximum of 194(48.5%) cases which included babies with both single and multiple cutaneous lesions. Similar higher frequency of these have been reported in studies conducted by NOBBY B and Chakraborty[5] (68.8%), Kulkarni ML and Singh[6] (72%), Patil[7] (89%), Dash[8]. They were seen more commonly in females and term babies. The second most common dermatoses in the present study was physiological jaundice, seen in 79 (19.75%) cases. Its incidence varies from 2.8-20.6% among various studies. Nobby B and Chakraborty[6] (20.6%), Kulkarni ML and Singh[7] (12.1%), Dash[8] (20%), Sadana[9] (19.3%), Behera[10] (2.8%). They are seen predominantly in normal weight babies (≥2.5kgs), post term babies (>41 weeks) and babies born out of caesarean section in present study. Sebaceous hyperplasia was seen in 48 (12%) cases. Majority of the lesions were noticed at the tip of the nose. In the present study, its incidence was found to be less when compared to other studies done by Prusachatkunakon[11] (38.7%). Physiological desquamation of skin was observed in 34(8.5%) cases which was identical to Kulkarni and Singh[6] (7.2%), Dash[8] (15%), Behera[10](16%). It was slightly more in male babies, low birth weight babies, babies born to 1st and 2nd gravida mothers and babies born out of non consanguinous marriage. Also similar predominence was seen in babies born through caesarean section similar to Behera[10]. Milia was seen in 21(5.25%) cases in this study. Overall incidence among previous studies ranged from 1.4-93.1% 46[5,6,8],. it was more in males and normal weight babies similar to Sadana[9] and Behera[10] term babies showed slight predilection similar to Dash[8], Sadana[9] and Behera[10]. In the present study, 126(69.6%) of total 181 female babies had cutaneous lesions as compared to 150 (68.4%) of total 219 male babies. Female predominance was also reported by Prusachatkunakorn[11]. Mongolion spots, physiological jaundice, sebaceous hyperplasia, ETN, Miliaria were more amongst females in this study, while lesions like physiological desquamation, Milia, Obstetric trauma, Epstein pearls, Hypertrichosis were predominant in males. Analysis pertaining to the birth weight revealed 245 of 344 babies(71.2%) weighing >or equal to 2.5kgs had cutaneous lesions as compared to 31 of 56(55.3%) low birth weight babies in the present study. Majority of cutaneous lesions were seen in babies weighing >or equal to 2.5 kgs. This is similar to the studies conducted by Sachdeva[12]. Association oflow birth weight with physiological jaundice which was observed in study by Behera[10], not seen in the present study. cutaneous lesons like physiological desquamation,

neonatal acne, cutis marmorata were more common in low birth weight babies. The present study revealed that out of 276 cases with cutaneous lesions 107 were born to primigravida, 105 were born to 2nd gravida, 47 were born to 3rd gravida, 13 were born to 4th gravida and 4 were born to 5th and more gravida. Hence 109(38.7%) newborns were born to primigravida and 169(61.3%) were born to multigravida mothers. Similar observations were made by Sachdeva[12] in his study which showed that 185(37%) mothers were primigravida and 315(63%) mothers were multigravida. The result of our study was in concurrence with above mentioned study inspite of regional difference in the study population. With regard to maternal age the maximum cutaneous lesions188(69.8%) were seen in newborns of mothers in the age group of 21-25 yrs followed by 45(16.3%) in the age group of 26-30 years in our study. The minimum 4(1.4%) were seen in the age group of 31-40 years. Observations of the study conducted by Sachdeva[12] were nearly consistent with our results where a maximum number that is 262(52.4% mothers were in the age group of 21-25 years, 129 (25.8%) mothers in the age group less than 20 years and remaining 109(21.8%) mothers were in age group of 26-40 year.

CONCLUSION

The present study helped to know the overall incidence of cutaneous lesions seen during neonatal period in Bhaskar Medical College, Yenkapally. Mongolian spots were the commonest cutaneous lesion seen in this study and constituted 194(48.5%) cases which included babies with both single and multiple cutaneous lesions followed by physiological jaundice, sebaceous hyperplasia, erythema toxicum neonatorum, physiological desquamation, neonatal acne, miliaria, milia, obstetric trauma, vaginal trauma, epstein pearls etc in that order. The least number were seen in aplasia cutis congenital, epidermolysis bullosa simplex, harlequin ichthyosis, myelomeningocoele, nevus depigmentosus, nevus anemic us etc with one case each. The frequency of cutaneous lesions among neonates of rural Yenkapally was same as compared with other studies conducted among Asians. It is important to differentiate the physiological transient dermatomes from more serious pathological cutaneous lesions so as to avoid unnecessary investigations and therapeutic interventions in the neonates. Skin lesions in newborns make the parent anxious. Diagnosing the dermatomes and counselling the parents in time may relieve the anxiety and mental trauma. Thorough knowledge of the neonatal dermatome through health education should be given to the care givers.

REFERENCES

1. Gokdemir, G., H. Erdogan, A. Koslu and B. Baksu, 2009. Cutaneous lesions in Turkish neonates born in a teaching hospital. Indian J. Dermatol., Venereology Leprology, 75: 638-641.
2. Solomon, L.M. and N.B. Esterly, 1970. Neonatal dermatology. I. The newborn skin. The J. Pediatr, 77: 888-894.
3. Griffiths, A.D., 1966. Skin Desquamation in the Newborn. Neonatology, 10: 127-139.
4. Weston W.L. and A.T. Lane AT. 1999. Neonatal Dermatology. In: Dermatology in general medicine., In: Freedberg I.M., A.Z. Eisen, A.K.F. Wolff, L.A. Goldsmith and I.S. Katz *et al.,* all editors., (Eds.)., Mc Graw Hill.,, New York., 0 pp.
5. Nobby B. and N. Chakroborty., 1992. Cutaneous manifestations in the new born. Indian J dermatol Venerolleprol., 58: 69-72.
6. Kulkarni M.L. and R. Singh., 1996. Normal variants of skin in neonates. Indian J Dermatol VenerolLeprol., 62: 83-86.
7. Patil S., J. Deodhar, Y. Tawade and A.N. Pandit., 1997. Neonatal skin lesions. Indian Paediatrics., 34: 651-652.
8. Dash k., S. Grover, S. Radhakrishnan and M. Vani., 2000. Clinico Epidemiological study of cutaneous manifestations in the neonate. Indian J Dermatol Venerol Leprol., 66: 26-28.
9. Sadana, D., Y. Sharma, N. Chaudhari, K. Dash, A. Rizvi and S. Jethani, 2014. A clinical and statistical survey of cutaneous changes in the first 120 hours of life. Indian J. Dermatol., 59: 552-557.
10. Kavadya, Y., B. Behera, P. Mohanty, D. Routray, S. Ghosh and L. Das, 2018. Study of physiological and pathological skin changes in neonates: An east Indian perspective. Indian J. Pediatric Dermatol., 19: 40-47.
11. Pruksachatkunakom C., A.M. Duarte and L.A. Schracher., 1999. Skin lesions in newborns. International pediatrics., 14: 28-31.
12. Sachdeva M., S. Kaur, M. Nagpal and S.P. Dewan., 2002. Cutaneous lesions in new born. Indian J Dermatol Venerol Leprol., 68: 334-337.