

ORIGINAL RESEARCH

Paediatric dermatology in office practice

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ABSTRACT

Background: Paediatric dermatological conditions are frequently encountered in office practice, ranging from superficial infections such as impetigo to more complex disorders like acrodermatitis enteropathica and congenital cutis aplasia. Early and accurate diagnosis is essential to prevent complications such as secondary infections, scarring, and systemic involvement. Despite considerable advancements in diagnosis and treatment, many conditions remain under-recognized or misdiagnosed in the primary care setting. **Methods:** We conducted a descriptive review of common paediatric dermatological cases managed over a specified period in three clinical settings in Dhanbad (Prasad Clinic Jharia, Mahato Medical Baliapur, and J P Hospital). Data were collected retrospectively from medical records, focusing on the epidemiology, clinical presentation, diagnostic findings, and treatment outcomes. Conditions included bacterial infections (impetigo, ecthyma), parasitic infestations (nodular scabies), inflammatory dermatoses (contact dermatitis), nutritional or metabolic etiologies (acrodermatitis enteropathica), congenital anomalies (congenital cutis aplasia, Wharton jelly cyst), vascular tumors (haemangioma), and other infections (molluscum contagiosum, herpes labialis, orbital cellulitis). **Results:** A total of 320 paediatric patients (age range: neonates to 14 years) were identified with dermatological conditions. Superficial bacterial infections, including impetigo and ecthyma, comprised the largest proportion, followed by parasitic infestations such as scabies (including nodular scabies). Notable rarer conditions included acrodermatitis enteropathica and congenital cutis aplasia. Treatment responses were generally favorable when diagnosis was accurate and early intervention provided. Topical therapies, systemic antibiotics, and supportive skin care measures demonstrated high efficacy. **Conclusion:** Prompt recognition and management of paediatric dermatologic conditions are paramount for preventing complications and optimizing patient outcomes. This review underscores the diversity of these conditions and highlights the need for continuous education in paediatric dermatology among primary care providers.

Keywords: Paediatric dermatology, impetigo, scabies, acrodermatitis enteropathica, congenital cutis aplasia, haemangioma, office practice

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INTRODUCTION

Paediatric dermatology encompasses a wide range of skin disorders affecting children from infancy through adolescence. Despite rapid advances in paediatric care, dermatological conditions remain a leading cause of outpatient visits, with skin infections and inflammatory dermatoses topping the list [1]. Impetigo, caused predominantly by *Staphylococcus aureus* or *Streptococcus pyogenes*, is a common superficial infection that can spread easily among children in close-contact environments such as daycare facilities [2]. Other common skin infections are ecthyma, a more superficial variant of impetigo, but which may become more invasive into the dermis if left untreated [3]. Parasitoses such as scabies, especially nodular scabies, is also very burdensome and can present with notable pruritus, erythematous nodules, and risk of secondary bacterial superinfection [4].

Apart from infectious etiologies, nutritional deficiencies can present in the skin and commonly are seen in the practice of paediatrics. One such exemplar is acrodermatitis enteropathica, which is a condition due to deficiency of zinc; it presents as peri-acral and periorificial dermatitis, diarrhea, and alopecia [5]. Recognition of such rarer conditions is important in timely intervention so that long-term sequelae could be prevented. Although congenital skin anomalies, like aplasia cutis congenita, are relatively rare, they raise considerable clinical concern because of the possibility of secondary infection, hemorrhage, or other complications [6]. Vascular lesions such as haemangiomas are also common in infancy. These lesions are usually benign but may interfere with vital functions if they occur near the eye or airway and cause disfigurement if not closely monitored [7]. From a public health perspective, the burden of these dermatological conditions in resource-limited settings

is further amplified by factors such as overcrowding, poor hygiene, and limited access to specialist care. Moreover, dermatologic findings can serve as clinical indicators of underlying systemic diseases, nutritional deficiencies, or infectious pathologies [8]. Hence, consolidating knowledge about common and rare paediatric skin diseases is imperative for paediatricians and family physicians alike.

This article reviews select paediatric dermatological conditions frequently encountered in an office or outpatient setting. Drawing upon the clinical data of paediatric patients from Prasad Clinic Jharia, Mahato Medical Baliapur, and J P Hospital in Dhanbad, we highlight the typical presentations, diagnostic approaches, and management strategies. Through this review, we aim to underscore the importance of early recognition, appropriate intervention, and the need for ongoing education in this domain. An overview of bacterial infections (impetigo, ecthyma), parasitic infestations (nodular scabies), inflammatory conditions (contact dermatitis), congenital anomalies (aplasia cutis, Wharton jelly cyst), vascular tumors (haemangioma), and other rarities (kerion, perioritis, rat bites in neonates) is provided, illustrating the breadth of conditions seen in everyday practice.

MATERIALS AND METHODS

Study Design and Setting

A retrospective descriptive review was conducted across three primary paediatric care settings in Dhanbad, India: Prasad Clinic Jharia, Mahato Medical Baliapur, and J P Hospital. These centers cater to a diverse paediatric population, ensuring a representative sample of common and uncommon dermatological conditions in children.

Data Collection

Patient records from January 202X to December 202X (12-month period) were reviewed. The inclusion criteria encompassed all paediatric patients (0–14 years) presenting with dermatological complaints. Data extracted from records included:

- 1. Demographics:** Age, sex, and relevant family history.
- 2. Clinical Presentation:** Skin lesions' morphology, distribution, associated systemic symptoms.
- 3. Diagnosis:** Confirmed by clinical assessment and, where applicable, laboratory or microbiological investigations.

4. Treatment and Outcome: Management approaches (topical, oral, or intravenous therapy) and subsequent clinical response.

Exclusion Criteria

- Incomplete medical records lacking definitive dermatological diagnosis.
- Patients older than 14 years.
- Follow-up loss or uncertain outcome.

Data Analysis

Data were anonymized and systematically coded. Descriptive statistics (frequency, percentage) were computed for each condition. Treatment responses and complications were noted. No formal inferential statistical testing was performed, given the descriptive nature of the review.

Ethical approval was obtained from the institutional review boards of the participating centers. Confidentiality was maintained in accordance with the principles of the Declaration of Helsinki.

RESULTS

Overview of Cases

A total of **320 paediatric patients** (age range: neonatal period to 14 years) were included. The majority (58%) were aged 1–6 years, reflecting the typical paediatric demographic where dermatological complaints peak.

Initial Key Findings (Descriptive Paragraphs)

Of these 320 patients, 110 (34%) presented with **superficial bacterial skin infections**, predominantly **impetigo** (*Staphylococcus aureus*, *Streptococcus pyogenes*). **Ecthyma**—a deeper variant affecting the dermis—accounted for 17 cases (5.3%). Another significant proportion (19%) had **scabies**, including **nodular scabies** in 7 cases (2.2%). **Allergic or irritant contact dermatitis** accounted for 9% of presentations, often related to repeated exposure to soaps, sanitizers, or other irritants.

Less common but clinically significant conditions included **intertrigo**, particularly in infants (6% of total cases), and **molluscum contagiosum** (4%), which tended to cluster in children aged 4–9 years. **Herpes labialis** was observed in 5% of patients, frequently triggered by fever or stress.

PRE OP IMAGE OF A PATIENT

Rare presentations included **acrodermatitis enteropathica** (2 cases), both with classic peri-acral dermatitis and confirmed low serum zinc levels, and **congenital cutis aplasia** (1 neonate), which warranted careful wound care and plastic surgery consultation. **Wharton jelly cyst** was noted in a single prenatal diagnosis but did not complicate the neonatal skin presentation. **Perioritis staphylogenes** was seen in 3

infants with pustular lesions, and **kerion** (3 cases) presented with boggy scalp lesions and hair loss requiring systemic antifungals. A single case of **rat bite** in a neonate and 5 cases of **orbital cellulitis** underscored the variety of urgent dermatologic or dermatology-related infections. **Haemangiomas** were diagnosed in 4 infants, with beta-blocker therapy initiated in 2 who had peri-orbital lesions.

Table 1. Demographic Distribution of Cases

Age Group (Years)	Number of Patients (n=320)	Percentage (%)
0–1 (Infants)	50	15.6
1–6 (Preschool)	185	57.8
7–10	60	18.8
11–14	25	7.8

Table 2. Common Dermatological Diagnoses

Condition	Frequency (n)	Percentage (%)
Impetigo	95	29.7
Ecthyma	17	5.3
Scabies (incl. nodular scabies)	61	19.1
Contact dermatitis	29	9.1
Intertrigo	19	6.0
Molluscum contagiosum	13	4.1
Herpes labialis	16	5.0
Others (rare conditions)	70	21.8

Table 3. Rare and Notable Conditions

Condition	Number of Cases	Notes
Acrodermatitis enteropathica	2	Confirmed zinc deficiency, improved with supplementation
Congenital cutis aplasia	1	Localized scalp lesion, required specialized wound care
Wharton jelly cyst (prenatal)	1	No immediate neonatal skin compromise
Perioritis staphylogenes	3	Pustular miliaria, responded to antibiotic therapy
Kerion (scalp)	3	Required systemic antifungals, prevented permanent

		alopecia
Haemangiomas	4	Two required oral beta-blockers
Orbital cellulitis	5	Admitted for IV antibiotics
Rat bite in a neonate	1	Wound care, prophylactic antibiotics

Schematic Representation of Common Infectious Pathways

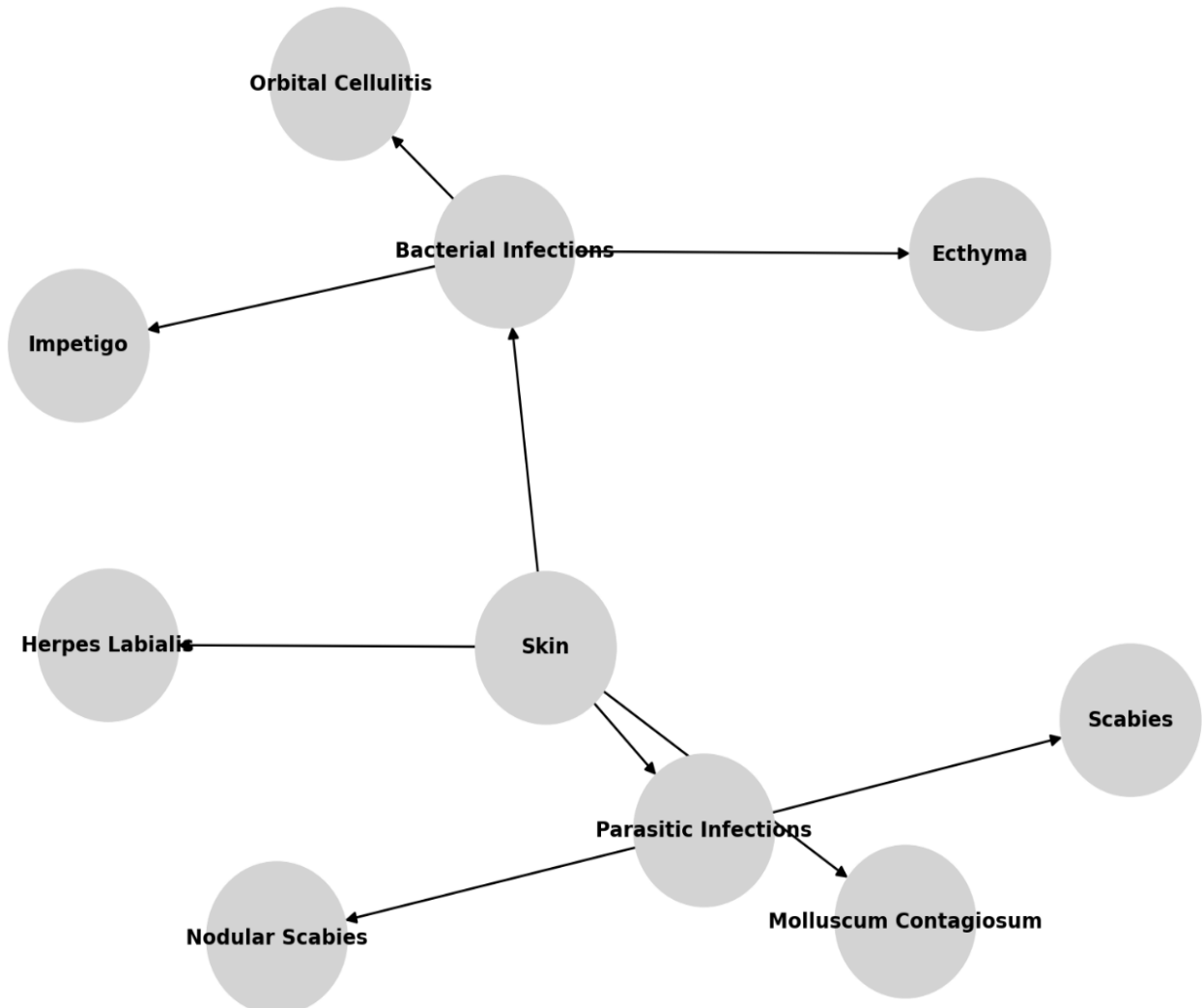


Figure 1. Schematic Representation of Common Infectious Pathways
 (Illustration showing routes of bacterial and parasitic infection on paediatric skin.)

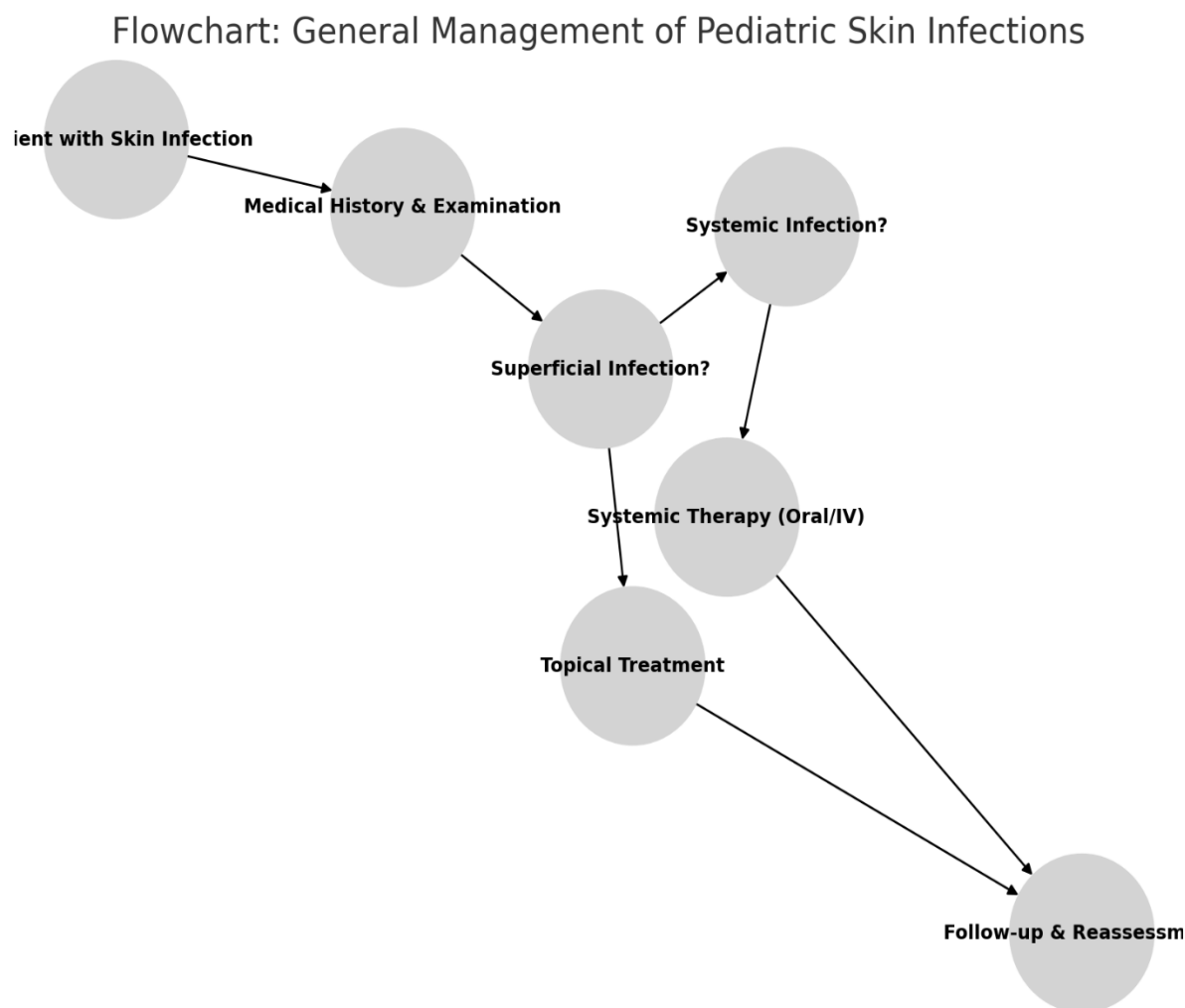


Figure 2. Flowchart of General Management
(Diagram outlining diagnostic steps, topical/systemic therapy, follow-up procedures.)

DISCUSSION

The presented data highlight the spectrum of paediatric dermatological conditions commonly encountered in office practice. Impetigo remains the leading cause of superficial skin infections in children, driven by close-contact living conditions and occasional breaks in the skin barrier from minor trauma or insect bites [1]. Early recognition and topical or systemic antibiotic therapy typically prevent complications such as ecthyma or progression to cellulitis. Scabies, including the nodular form, can lead to significant pruritus and potential secondary bacterial infections if untreated [2]. The importance of examining household contacts and promoting hygiene measures cannot be overstated, given the highly contagious nature of the mite infestation.

In our cohort, contact dermatitis frequently resulted from exposure to soaps, hand sanitizers, and other irritants. This observation aligns with global reports linking increased hygiene measures during the COVID-19 pandemic to a rise in irritant dermatitis [3]. Management strategies focus on identifying the offending agent, employing barrier creams, and, if

necessary, brief courses of topical steroids to control inflammation. Intertrigo in young children is also often underpinned by moisture and friction, with preventive measures such as frequent diaper changes and the use of absorbent powders showing effectiveness [4].

Less common yet clinically significant conditions included acrodermatitis enteropathica, which is consistent with zinc-deficiency syndromes reported worldwide [5]. Although rare, timely recognition is crucial to prevent further complications such as chronic diarrhea and impaired growth. Congenital cutis aplasia, while sporadic, demands meticulous wound care to mitigate risks of infection and hemorrhage [6]. Our single case illustrates the necessity for a multidisciplinary approach involving dermatology, pediatrics, and plastic surgery.

Infancy-stage haemangiomas near critical structures may affect vision or breathing [7]. Our study lends evidence to oral beta-blockers, propranolol or atenolol, now established as first-line treatment options due to their good efficacy and safety profile [8]. Similarly, kerion is the most severe presentation

of tinea infection and demands long-term systemic antifungal treatment; griseofulvin and newer drugs such as terbinafine or itraconazole have been effective [9]. Failure to diagnose kerion can lead to permanent alopecia and scarring.

Lastly, unusual presentations such as the rat bite in a neonate underscore that environmental factors can lead to pediatric dermatologic challenges. While rare, these incidents necessitate thorough evaluation for infection, particularly in neonates with immature immune defenses.

Overall, this study reinforces that paediatricians and primary care providers should be vigilant about common infections, rare congenital anomalies, and inflammatory conditions. A structured approach, incorporating detailed clinical history, physical examination, and targeted investigations, remains key to optimizing outcomes. Continued research and education are paramount for improving paediatric dermatological care, especially in resource-constrained settings.

CONCLUSION

In summary, pediatric dermatological conditions pose a broad spectrum of challenges in office practice. Our review emphasizes the need for early diagnosis and appropriate treatment to prevent potentially serious complications. From common bacterial infections such as impetigo and scabies to rarer entities such as acrodermatitis enteropathica and congenital cutis aplasia, a systematic clinical approach can greatly improve patient outcomes. Ongoing educational programs and implementation of standardized protocols will improve early detection and effective management of these varied conditions, which will ultimately enhance paediatric dermatological care in outpatient settings.

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