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Pederm Insights

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In this Issue

Editor's Prologue

Welcome to the 8th issue of the Ped Derm Newsletter, the official publication of the Pediatric Dermatology Foundation.

This edition is a special one for me as it marks my final issue as Editor. I am delighted to warmly welcome Dr. Jeta Buch, who will be taking over this responsibility from the next issue onwards. I take this opportunity to express my heartfelt gratitude to my mentors for entrusting me with this role and to our readers for their constant encouragement and support over the year.

I would especially like to thank Dr. Deepak Parikh Sir for reviewing the newsletter each time, guiding me, and constantly reminding me of my objectives as Editor. Grateful to Dr. Manish Shah for going through this newsletter and providing guidance on each of the sections. My heartfelt thanks also go to Dr. Rajesh Jadhav Sir, who has painstakingly transformed each edition into a reader-friendly PDF format, making it accessible and appealing to all. I also sincerely thank all the editorial team members who did a commendable job at all the assigned tasks, ensuring every issue was delivered with quality and care.

This issue follows the highly successful Pediatric Dermatology Update held on 23–24 August 2025 at the CIDCO Auditorium, Vashi, Navi Mumbai. The event saw a full house with practically oriented talks on nuanced topics delivered by pediatric dermatology experts, coupled with lively audience interactions during panel discussions—a consistent highlight of the conference. To celebrate the success of this meeting, we bring you an exclusive "Synopsis of Talks" section summarizing selected talks from the conference.

The theme of this issue arose from an observation in my own outpatient practice. Increasingly, pre-teens and teenagers approach me with queries shaped by social media trends:
*"*How do I get Korean glass skin?*"*
*"*Can you prescribe me a morning and night routine?*"*
*"*Is this lip balm safe?*"*
*"*Does coffee with honey really remove tan?*"*
Some even ask about hair masks or other beauty rituals promoted online.

As a pediatric dermatologist, I find these questions both fascinating and concerning. Adolescents are at a vulnerable stage, easily influenced by peers and by the seemingly flawless images and advice presented by influencers. While some content creators share accurate information, many others promote unverified or misleading claims, making it difficult for young minds to distinguish credible sources from unreliable ones. For many, following these trends is less about skin health and more about keeping pace with their friends or aligning with popular culture.

This raises important questions for us as clinicians:
Should children and adolescents really have multi-step skincare routines?
Is it ethical to indulge their requests for elaborate regimens?
Or should we guide them toward simplicity and evidence-based care?

I believe our role goes beyond prescribing products or routines. It lies in counseling—addressing their curiosity with empathy, validating their concerns, and gently steering them away from unnecessary or potentially harmful practices. A balanced approach is needed, one that reassures them that healthy skin does not come from a 10-step regimen but from age-appropriate care, sun protection, and good lifestyle habits.

With this theme in mind, the Journal Review Section of this issue focuses on Cosmeceuticals in Pediatric Practice, Laser Hair Reduction in Pediatric Dermatology, and Cosmetic and Procedural Dermatology in Children. This will be followed by an Expert Comments Section, where experienced clinicians share their personal approaches to managing common pediatric dermatological conditions such as multiple warts, multiple molluscum contagiosum, and pediatric skin biopsies. This will be followed by the answer to the Photoquiz 4. Finally, a synopsis of talks at the PDU 2025.

I hope this newsletter serves as a practical resource in your day-to-day practice and helps make pediatric dermatology simpler, one step at a time. Wishing Dr. Jeta Buch all the very best as she takes over the editorial helm!

Dr. Resham Vasani

Journal Review

A. Cosmeceuticals in Paediatric Age

Editor's Note - With the rising influence of social media, pre-teens and adolescents are increasingly drawn to skincare products promoted by online influencers. Many of these products are actually meant for adults. This group is quick to adopt emerging trends and often develops unrealistic expectations of "flawless" skin without visible pores, lighter or "fair" skin tones, and the idealized concept of "Korean glass skin." The rapid growth of product lines specifically marketed to this age group reflects this phenomenon, with the segment now contributing to a billion-dollar industry. For pediatric dermatologists, it is therefore essential to acknowledge these evolving perceptions, engage empathetically with young patients, and provide guidance toward evidence-based, age-appropriate, and safe skincare practices.

Journal review by Dr. Jeta Buch

This useful review article has been adapted to the Indian context, incorporating some personal recommendations

1. Goff GK, Stein SL. Cosmeceuticals in the Pediatric Population Part I: A Review of Risks and Available Evidence. Pediatr Dermatol. 2025 Mar-Apr;42(2):221-227.

- Cosmeceuticals are products between cosmetics and drugs; often contain active ingredients but are sold OTC at sub-therapeutic concentrations.
- Social media strongly influences skincare choices:
  - 75% of teens with acne seek advice from social media.
  - 60% of content comes from non-medical users.

COMMON CATEGORIES & RISKS

Moisturizers

- Benefit: barrier repair, hydration.
- Risks: many contain comedogenic ingredients (oleic acid, petrolatum, isopropyl esters).
- Ceramides → safe in children; shown to help in acne-prone skin.
- Trendy practices like – 'Slugging'(petrolatum occlusion) may worsen acne by trapping oil/irritants.
- Common allergens: fragrance, lanolin, propylene glycol, preservatives (formaldehyde, Methylisothiazolinone).

Fragrance free moisturisers, that are non-comedogenic may be appropriate in some acne prone adolescents and in children with atopic dermatitis. Peptides, hyaluronic acid and snail mucin have been widely marketed but have limited data in the paediatric age group, and are avoidable.

Anti-acne agents

- Salicylic acid – safe up to 2% OTC, may irritate sensitive skin.
- Glycolic acid – exfoliant, can increase photosensitivity.
- Benzoyl peroxide – Effective, but should be used under medical supervision, owing to irritant potential
- Topical retinoids – adapalene is available OTC ; weaker forms (retinol, esters) poorly studied in pediatric age. Adolescents have often read about retinoids and may attempt to self-medicate themselves using these. Approved retinoids like adapalene and tretinoin can produce irritant dermatitis, and should only under dermatologist's guidance. Retinols and their esters are milder, but benefits are primarily for antiaging, not acne treatment.
- Azelaic acid – 10%, 15% and 20% concentrations are available in gel and cream formulations. Irritation, burning and redness can occur in some individuals, particularly with higher concentrations and gel formulations. Hence dermatologist supervision is essential.

Sunscreens

- Strongest evidence and had been highly recommended for all pediatric age groups in the article.
- Prevents sunburn, photoaging, and skin cancer.
- The article indicates that the trend-driven rise in sunscreen use may be a positive outcome of cosmeceutical marketing, usually for Caucasian children and adolescents.

Cleansers

- Goal: remove sebum, microbes, debris.
- Harsh soaps (anionic surfactants) → barrier damage, acne worsening.
- Preferred: mild nonsoap cleansers with amphoteric surfactants, pH 4–6.
- Overcleansing → irritation, microbiome disruption.
- Toners often unnecessary, may be drying.
- Routine use of mild, non-soap cleansers (pH 4–6, amphoteric surfactants) is the foundation of pediatric skincare, particularly for adolescents with dry and atopic skin.

Skin-lightening agents

Post inflammatory hyperpigmentation (PIH) is a major psychosocial concern in adolescents, especially skin of colour. Manufacturers use PIH as a marketing hook; products may lack active ingredients.

- Hydroquinone (≤2% OTC): Effective but risk of exogenous ochronosis even at low dose with prolonged use. Prescription-strength approved ≥12 y but only under dermatologist supervision.
- Kojic acid: Alternative to hydroquinone, no ochronosis but may cause contact dermatitis; pediatric data lacking.
- Other actives: Retinoids, niacinamide, azelaic acid, vitamin C—all some evidence but limited pediatric data. Sunscreen is essential first-line therapy for PIH.

Anti-aging agents (not relevant in pediatrics but widely marketed)

- Vitamin A derivatives: Retinoic acid effective, OTC retinol/esters weaker and irritant.
- Vitamin C: Antioxidant and collagen stimulant, but unstable and poorly absorbed.

- Vitamin E: Limited evidence, may worsen scars, risk of contact dermatitis.
- Niacinamide: Well tolerated at <5%, limited evidence for photodamage.
- Hyaluronic acid: Provides moisturization; pediatric skin already HA-rich.
- Snail mucin: Contains hyaluronic acid, trendy, minimal evidence, allergy risk.

Overall Risks
- Irritation, comedogenicity, allergic contact dermatitis.
- Lack of pediatric-specific safety and efficacy data.
- Marketing claims often not evidence-based.

2. **Dumycz K, Kunkiel K, Feleszko W. Cosmetics for neonates and infants: haptens in products' composition. Clin Transl Allergy. 2019 Mar 8;9:15.**

Infant skin

- Barrier function is incomplete in the first year: thinner epidermis + higher surface area/body weight ratio → increased absorption of substances.
- Allergic contact dermatitis (ACD) is rising in children: contact sensitization in suspected pediatric ACD cases ranges 15–71%.

Study design

- Location: 6 cosmetic stores/supermarkets in Poland (Dec 2016–Jan 2017).
- Products: 212 cosmetics for 0–12 months (moisturizers, bath products, wet wipes, diaper creams, soaps, shampoos, oils).
- Method: Ingredients (INCI) screened against European Baseline Series (EBS), Cosmetics series, and Fragrance series (126 haptens).

Findings

- High hapten prevalence: 186/212 (87.7%) contained ≥1 hapten.
- Average per product: 2.5 haptens (range 1–12).
- Most common haptens:
  - Cocamidopropyl betaine (30.7%)
  - Tocopherol / tocopheryl acetate (~28%)
  - Phenoxyethanol (25.9%)
  - Propylene glycol (16.5%)
  - Fragrances (17 types: limonene, linalool, geraniol, coumarin, citronellol)
  - Lanolin alcohol (9%)
  - MI/MCI preservatives (strong sensitizers; banned in EU leave-on products)
- By product type:
  - Emulsions: 100% contained haptens
  - Baby oils: 66.7%
  - Leave-on: 86.8%
  - Rinse-off: 89.8%
  - Wet wipes: 84.8%

"Hypoallergenic" label is misleading

- 85–90% of products marketed as hypoallergenic/ dermatologically tested/safe contained haptens.
- No EU regulation defines "hypoallergenic" or "free from."

Clinical relevance

- Cocamidopropyl betaine: major pediatric allergen (~15% positive patch tests in infants).
- Fragrance mixes I/II: frequent sensitizers in children.
- MI/MCI: potent sensitizers → restricted/banned in EU.
- Lanolin: ACD risk in infants with eczema/barrier defects.
- Propylene glycol: often an irritant in <2 years.

Limitations

- Limited to 6 Polish stores → not fully representative.
- Did not measure hapten concentrations or clinical ACD prevalence.
- Relied only on labeling, not hidden contaminants.

CONCLUSIONS and comments after review of the above articles :

Use of Sunscreen in the Indian Scenario -

- Individuals with **Fitzpatrick skin types V–VI** have **innate melanin-mediated protection roughly equivalent to SPF 13.4**, whereas lighter skin types have an estimated SPF of 3.3.
- **Fundamental sun protection strategies** include wearing tightly woven, dark-colored clothing, wide-brimmed hats, UV-protective sunglasses, seeking shade, and avoiding outdoor activities during **peak UV hours (11 AM–4 PM)**, with sunscreen used as an adjunct when needed.
- **Routine sunscreen application is generally unnecessary** in healthy young children and should be **reserved for situations involving prolonged sun exposure**, outdoor sports, swimming, beach activities, or children with photosensitive conditions.
- **Education** should emphasize correct application, adequate quantity, and realistic expectations— **sunscreens supplement but do not replace** physical and behavioural protection.

<u>Sunscreen Application in Children — Issues and Strategies</u>

- **Inadequate quantity applied:** Teach the "teaspoon rule" or "two-finger method"; prefer pump/squeeze bottles; demonstrate correct amount during consultations.
- **Uneven coverage:** Remind about missed areas (ears, neck, temples, limbs, hands, feet); ensure caregiver assistance for hard-to-reach sites.
- **Improper timing or reapplication:** Apply 15–30 min before exposure; reapply every 2 h and after swimming or sweating; carry travel-sized bottles; choose water-resistant formulations.

- **Poor formulation acceptability:** Recommend light, non-greasy, fragrance-free; prefer **mineral filters** (zinc oxide, titanium dioxide) for children.
- **Caregiver unawareness:** Reinforce appropriate SPF selection, amount, and reapplication during visits; address common myths (e.g., "not needed on cloudy days").
- **Infants < 6 months:** Avoid sunscreen; rely on shade, clothing, and timing; if unavoidable, apply only on small exposed areas using **mineral, fragrance-free formulations.**

MOISTURIZERS AND CLEANSERS :

- Emollients and mild, non-soap cleansers with amphoteric surfactants, pH 4–6 preferred for adolescents form the foundation of pediatric skincare, particularly in xerotic and atopic phenotypes.

ANTI-AGING COSMECEUTICALS :

- These lack biological plausibility in children and expose immature skin to unnecessary active compounds without evidence of benefit.

SKIN LIGHTENING AGENTS :

- The use of bleaching or fairness creams—often containing mercury, hydroquinone, or corticosteroids—is contraindicated due to risks of exogenous ochronosis, steroid-induced dermatoses, systemic absorption, and psychosocial harm.

In the Indian context, it is especially important to educate adolescents, preteens, and their families about the misconceptions surrounding "fairness." The misuse of hydroquinone- and steroid-based combination creams continues to be a longstanding concern, with long-term consequences that not only damage the skin but also negatively impact mental well-being. As paediatric dermatologists, our goal should be to promote the concept of healthy skin rather than "fair skin." Counselling must include clear communication about the potential adverse effects of unsupervised depigmenting creams, the judicious use of agents such as hydroquinone, and the importance of consistent sun protection. Setting realistic expectations and discouraging unsafe practices can go a long way in safeguarding both skin health and self-esteem in this vulnerable age group.

COSMETICS IN INFANTS :

- Often contain haptens/sensitizers; fragrance-free formulations are safest.

MISINFORMATION :

- Social media–driven regimens with exotic actives lack pediatric safety data, disrupt barrier function, and contribute to unnecessary financial burden. Misleading claims such as *"hypoallergenic"* or *"dermatologically tested"* further underscore the need for dermatologist-guided, evidence-based alternatives.

PARENTAL COUNSELING is a must.

B. Laser Hair Reduction in Pediatric Population

Editors note - One of the most common concerns voiced by preteens, adolescents, and their parents is: how to get rid of body hair. For many young individuals, the presence of body hair can cause embarrassment, restrict clothing choices, and affect self-confidence. Axillary hair, for instance, may be a cosmetic concern when wearing sleeveless outfits.

Beyond aesthetics, there are also valid medical indications for hair reduction. Examples include hirsutism in polycystic ovarian syndrome (PCOS), axillary hair reduction as an adjunct in hidradenitis suppurativa, or in pilonidal sinus management. Laser hair reduction (LHR) can also play a therapeutic role in recurrent post-waxing folliculitis and in cases of keratosis pilaris where reduction of hair growth improves outcomes.

This brings us to the frequently asked questions: Is LHR safe in the pediatric population? At what age can it be offered?

Journal Review by Dr. Sirisha Varala

1) **A review of hair removal modalities in pediatric patients: Ethical and clinical considerations. Sanfilippo E, Castelo-Soccio L, Kirkorian AY, Pediatr Dermatol. 2024 May-Jun;41(3):410-420**

This article aims to review the available literature on the safety and efficacy of hair removal modalities in paediatric patients and provides a comprehensive analysis of hair removal methods, focusing on both clinical outcomes and ethical considerations. All PubMed articles addressing hair removal in patients under the age of 18 years were reviewed.

The various indications for hair removal in pediatric population were, hypertrichosis, hirsutism (as a part of PCOS or precocious puberty), hypertrichosis as a part of congenital anomalies like CMN or syndromic associations, conditions like hidradenitis suppurativa and pilonidal sinus or just hair of normal quality and thickness that is unappealing to the patient. Though excess hair itself is a benign condition, patients of all ages struggle with psychosocial challenges and significant distress due to its presence, warranting treatment in certain situations.

Clinical Considerations

- Modality Overview: Techniques covered include shaving, waxing, plucking, threading, depilatory creams, eflornithine cream, intense pulsed light (IPL), laser, and electrolysis; the choice depends on area, skin type, and patient preference.

Editor's Note

- *Among all temporary methods of hair reduction, shaving or the use of a hair razor is perhaps the safest and simplest option. Since it only cuts the hair shaft at the skin's surface, it does not affect the hair root or growth rate. When done carefully—either by the adolescent or under parental supervision—it can be a painless and effective way to remove unwanted hair. However, several misconceptions persist, such as the belief that shaving leads to thicker or coarser regrowth. This is untrue, as shaving merely blunts the tip of the hair, making it feel slightly stiffer when it grows out. Proper guidance and counselling regarding safe technique and hygiene are essential to ensure good cosmetic outcomes and prevent irritation or injury.*

  Counselling should include guidance on safe and hygienic shaving practices. Adolescents should be advised to use a clean, sharp razor and, if inexperienced, to do so under parental supervision. The skin and hair should be softened with warm water or a mild cleanser before shaving, and a gentle shaving gel or foam may be used to minimize friction. Shaving should be performed in the direction of hair growth with light pressure to avoid cuts and irritation. Post-shave care involves rinsing with cool water, patting dry, and applying a mild, fragrance-free moisturizer. Sharing of razors should be discouraged to prevent infections, and blades should be replaced regularly.

Laser hair removal efficacy and safety:

- Lasers have been shown to be safe and effective in pediatric patients, with LHR being the most common non-invasive cosmetic procedure performed on patients under the age of 18 years. Various lasers used across studies were, long-pulsed alexandrite (755 nm) (mean of 5.1 treatments), the long-pulsed ruby (694 nm) (1-10 treatments with 89% patients experiencing reduction in hair), diode (800 nm) (20 sessions with 80% hair reduction) and neodymium:yttrium- aluminum-garnet (Nd:YAG) (1064 nm) (mean of 6.2 treatments with lesser sessions at higher fluence).
- *Complications:* Discomfort, pain, redness, edema, transient blistering, post inflammatory hyperpigmentation were the common side effects. Paradoxical hypertrichosis was common with light based devices. A multi-center study including 480 patients treated with lasers found that adverse effects including hyperpigmentation and blistering were more likely in higher Fitzpatrick skin types. A case series of 543 patients treated with IPL found that 10% of patients experienced paradoxical hypertrichosis. There is no scientific data to substantiate the claim that LHR in childhood or adolescence leads to an augmented hair growth pattern in adulthood.
- *Pain Management:* Pain management is a key concern, especially for laser and electrolysis. Topical anaesthetics (topical lidocaine/ eutectic mixture of topical anesthetic) and cooling therapies (cryogen spray, ice cubes, and forced refrigerated air) were used for pain management. It is important to adhere to standard dosage guidelines to avoid toxicity in young children. Topical anaesthesia can be used for small areas with larger areas requiring general anaesthesia, however FDA advises against repeated and lengthy use of anesthesia in young children and suggests that elective procedures be delayed until the child is over the age of 3 years.

- *Concurrent or recent isotretinoin use:* Newer consensus recommendations from the American Society for Dermatologic Surgery in 2017 have deemed hair removal lasers and lights to be safe to use while on isotretinoin therapy.

- *Best Practices:* Initial approach should involve less invasive options (shaving, plucking, depilatory creams), reserving laser or electrolysis for persistent cases or significant distress.

Ethical Considerations

- Autonomy and Consent: Ethical practice requires prioritising patient autonomy, especially declining cosmetic requests from parents when the child is not distressed.

- Psychosocial Impact: The authors have opined that it is appropriate to proceed with treatment in cases where children are expressing emotional distress, poor self-esteem, teasing or bullying in public or an undue psychological burden due to excess hair.

- Provider qualifications: Only board-certified dermatologists should perform procedures to minimise risks and ensure informed consent.

Conclusions :

- There is no age-restriction to any modality of hair removal treatment especially in a child who wants hair removal and can cooperate safely.

- It is always better to perform LHR in office settings by a board certified dermatologist to minimise the side effects of scarring, burns and pigmentary changes.

- The authors emphasise that all major hair removal modalities—temporary (shaving, waxing, plucking, depilatory creams) and permanent (laser, electrolysis) are generally safe and well tolerated in paediatric population. It is extremely important not to subject the child to any painful elective procedure without assent, especially when they are not bothered by excessive hair.

2) Laser and light therapy for paediatric hair removal – Systematic Review. Sharon E, Levi A, Lapidoth M, Snast I. Lasers Med Sci. 2023 Jul 4;38(1):156.

The above systematic review included 13 studies (2 retrospective cohorts, 11 case reports/series) including 71 children (aged 9 months–17 years) treated with lasers or intense pulsed light (IPL) for unwanted hair. The different lasers used were Alexandrite, Nd:YAG, ruby, diode lasers, and IPL for various indications like constitutional hirsutism, polycystic ovary syndrome, generalized hypertrichosis, congenital nevus, nevoid hypertrichosis, isolated hypertrichosis, ear reconstruction covered by scalp hair, pilonidal sinus, hair at the site of anotia, Becker's nevus, lumbosacral hypertrichosis, hypertrichosis lanuginosa congenital and anterior cervical hypertrichosis.

Efficacy: One cohort (ruby laser, n=28) showed 63% mean hair loss in 89% of patients, though partial regrowth occurred within 6–32 weeks. Most case reports/series (10 of 11) reported significant hair reduction. Effectiveness varied by the modality and site, however recurrence was common.

Safety: No permanent adverse effects like scarring, dyspigmentation, or paradoxical hypertrichosis was reported in any of the included studies. Temporary discomfort and blistering were noted in few cases.

Pain management was a major issue with only 35% of patients requiring no pain control, while 65% required either ice cubes (13%), topical anesthesia (27%), or general anesthesia (25%).

Limitations: Evidence base is weak (includes mostly small case reports/series, there is heterogeneity in patients, lasers, and protocols).

Conclusion: Lasers and IPL appear safe and potentially effective for pediatric hair removal, but pain and recurrence are the key challenges. It is important to discuss the aspect of pain thoroughly beforehand with the child and the parents. Larger, well-designed controlled studies are the need of the hour.

Discussion:

Common indications in routine clinical practice include constitutional hypertrichosis. Driven by social media influences and peer pressure, children and adolescents are increasingly seeking LHR at an early age. On the other hand, hirsutism cases associated with polycystic ovarian syndrome are being increasingly encountered, often linked to the trend of early menarche and stressful lifestyle, causing significant psychosocial distress.

While it is justifiable to treat such cases, requests for treatment of constitutional hypertrichosis should be approached with caution, with clinicians emphasizing on reassurance and counselling.

Newer lasers with triple wavelength technology (diode based) are quite efficacious in treating hirsutism in adolescents along with concomitant management of underlying hormonal abnormality. Topical anesthetics are effective in reducing pain, especially in areas like upper lip, areolae, axillae and pubic area enhancing the tolerability and compliance in this age group.

Ethical practice mandates careful counselling of both patients and guardians, weighing medical necessity against cosmetic concerns, and ensuring realistic expectations before initiating therapy.

1. Cosmetic Procedures in Pediatric Age

Editor's note – The articles here are targeted to answer – Should cosmetic procedures be done in the pediatric age? If yes, which ones can be done?

Journal Review by Dr. Divya Gupta

Hoffman L, Ahmed S, Krakowski AC, Chapas A. Practices in Pediatric Cosmetic Dermatologic Procedures: A National Survey. Dermatol Surg. 2024 Dec 1;50(12):1127-1130.

This national multi-society survey of 73 dermatologists (predominantly pediatric dermatologists) explored which cosmetic procedures are being performed in children and why. The most common indications were hypertrophic/traumatic scars, acne, hyperhidrosis, hypertrichosis, and pigmented lesions. Vascular lasers dominated practice (78%), followed by laser hair removal (51%) and pigment lasers (28%). Other interventions—chemical peels, fillers, and neuromodulators—were used far less often, and mostly not before age 18 years. Most respondents began acne and laser hair removal around ages 12–15, while scar and pigmented lesion management often started earlier. Counselling was done to emphasize risks/benefits, natural disease course, and set realistic expectations. Patient-driven motivations, psychosocial impact, and anaesthesia safety were found to be central to decision-making.

Commentary: This recently published survey on pediatric cosmetic procedures begs the question whether cosmetic procedures can be done in children?
The answer is yes —but, selectively.
Broadly speaking, the goals should be medical (prevent hypertrophy, restore function) or psychosocial (reduce bullying, social withdrawal). Indications include:

(a) Treatment that prevents progression to disfigurement (e.g., early vascular laser for PWS or a Q-switched NdYAG laser for Nevus of Ota). Here it is important to begin early since literature consistently shows that infants treated in the first months to few years of life show better blanching and less hypertrophy/ectasia later. Safety profiles in children are good when performed by experienced teams using appropriate anesthesia. Transient purpura, blistering and pigmentary changes are the most common complications and are generally reversible.

(b) Correction of stable anatomic deformity that impairs function or psychosocial well-being (e.g., fat grafting for post-morphea atrophy).Here it is important to make sure that the disease is quiescent. Do **not** perform volume/augmentation procedures during active inflammatory disease. Fat grafting has the advantage of potential long-term volume restoration but is an operative procedure requiring anesthesia and donor sites; fillers (e.g., hyaluronic acid) offer immediate correction but may need repeat treatments.

(c) Adjuncts when non-invasive therapies have failed or are not appropriate (e.g. acne and hyperhidrosis). Here, it is important to optimize non-invasive therapies first before considering procedures. In my opinion, well-adhered topical regimens (retinoids, benzoyl peroxide) and systemic treatments (oral antibiotics or isotretinoin when indicated), along with balanced lifestyle, produce similar or superior long-term control without procedural risks of a chemical peel in adolescents. Similarly, topical antiperspirants, iontophoresis, oral anticholinergics like oxybutynin and glycopyrrolate provide significant relief from hyperhidrosis, are easily accessible and have comparable efficacy to botulinum toxin injections that are painful, costly, require anaesthesia, and repeated treatments.

Some DO's and DON'T's to be kept in mind when considering pediatric cosmetic procedures:

DO'S

- Use the least invasive, evidence-based option first.
- Obtain age-appropriate assent and informed parental consent; document a discussion of alternatives, risks, need for repeat treatments, and cost
- Plan appropriate anaesthesia. As much as possible use topical anesthesia with distraction; use GA only if extensive lesions or age precludes co-operation
- Maintain clear outcome measures and follow-up plan; monitor growth/hormonal changes that may affect results.
- Discuss complications (infection, scarring, pigmentary changes), set realistic goals and do a small test-spot if necessary.
- Collaborate with pediatric anesthesiology/plastic surgery for procedures requiring sedation or complex reconstruction.
- Psychological screening to confirm that the request comes from the child's needs, not solely parental pressure.
- Use strict laser safety with pediatric-sized protective equipment.

DON'TS

- Don't perform aesthetic-only procedures or lasers in children without clear medical/psychosocial indication.
- Don't default to invasive options if non-invasive treatments have comparable efficacy.
- Don't perform augmentation for lipodystrophy or morphea if the disease is active.
- Don't underestimate the anesthesia risks in very young children.

To conclude, cosmetic procedures have a legitimate, evidence-based role in pediatric dermatology but they must be used judiciously with child-centered consent and safeguards. Dermatologists should prioritize least invasiveness, proven benefit, and a favorable risk/benefit profile in children.

They should **not** be routine, cosmetically elective procedures driven by adult aesthetic norms. Careful assessment of maturity, family context, and expectations is essential.

Experience of the Experienced

1. How do I manage multiple warts in children?

Author: Dr Sahana M Srinivas

Management of multiple warts in children pose a therapeutic challenge. There is no uniform definition of multiple warts in literature. Several cohort studies have presumptively categorized as more than one or two or diffuse cutaneous warts over 20 in number, distributed in more than one area of the body. [1]

Practical tips to consider before considering therapy for multiple warts

- It is well established that cutaneous warts may undergo spontaneous regression, but some type of warts like multiple palmoplantar warts, periungual warts and multiple common warts are resistant to treatment and hence, 'wait and watch' approach is not employed. The primary goal of management is to remove warts and eliminate the subclinical infection around the wart to reduce or prevent recurrences.
- It is important to remember that warts are benign cutaneous growths and therapy should present no hazard to the child, no scarring should result and the side effects should be minimal.
- Overly enthusiastic approach may lead to considerable pain and permanent scarring. Most lesions can be treated successfully with persistence.
- Counselling parents about the nature of the disorder, prognosis, combination of treatment modalities and follow-ups is necessary.
- Underlying immunodeficiency can present as multiple, and recalcitrant warts.
- Resolution of multiple warts requires longer period with treatment also.
- There is no single gold standard treatment for multiple warts in children
- A child friendly clinic can make for a positive experience. Distractions in treatment room like music, and cartoon movies can help children to stay calm.
- Explaining the therapy in child's words make a difference. I use words like *'cold ice'* for liquid nitrogen for cryotherapy procedure.

Management of multiple planar warts (Personal experience)

Most commonly seen on the facial areas of young children and adolescents

- Topical tretinoin 0.025% cream for the initial 2 weeks, followed by 0.05% cream can be applied using a tooth pick or Q-tip on the lesions, once daily for 6 weeks to 3 months.
- Cryotherapy - apply topical anaesthetic cream for 30 min before cryotherapy (if child is uncooperative, parent can themselves apply EMLA cream)
    - Dipstick technique should be considered for plane warts
    - Paper cup is taken and the required liquid nitrogen is poured into the cup, followed by dipping the Q-tip in the liquid nitrogen and applying on the warts
    - Procedure is done every 3 weeks until clearance
    - Transient pain and erythema along with post-inflammatory hypopigmentation can be seen in few children.
- Multiple, recalcitrant plane warts not responding to topicals - oral acitretin 0.5mg/kg used off-label for 2-3 months.
- KOH 10% lotion can be applied using a Q-tip on the affected part once a week for 3 – 4 months until clearance (KOH application should be done under medical supervision)

Management of multiple common warts (Personal experience)

- Cryotherapy is the first line of treatment for multiple common warts
  - Paring should be done before cryotherapy.
  - Apply EMLA (Eutectic mixture of local anesthetics) cream for 40 min before cryotherapy
  - Spray technique should be considered (in younger children, dipstick technique can be considered
  - Procedure is repeated every 2- 3 week until clearance

- Keratolytic therapy with solutions containing combination of salicylic acid and lactic acid (Locally available solutions contain 16.7% Salicylic acid with 16.7% lactic acid in a flexible collodion base)
  - Wash area thoroughly with soap and water
  - Rub the surface gently with pumice stone or callus file
  - Apply vaseline petroleum jelly surrounding the lesions, and then apply solution on the wart with a toothpick or Q-tip
    - Allow to dry
    - After drying, the wart is occluded with transpore or micropore tap
    - Treatment should be continued for 3-6 months
- Combination therapy with keratolytics and cryotherapy
- Older children - electrofulguration of few lesions can be done along with keratolytic therapy

Management of multiple palmoplantar, periungual warts and subungual warts (Personal experience)

- Keratolytics: 30% to 40% ointment under occlusion for 3-6 months
- Soaking in lukewarm water for 15 min is necessary before application of keratolytics (procedure as above)
- Cryotherapy every 3 weeks until clearance (procedure as above).
- Combination of cryotherapy and keratolytic agents.
- Electrofulguration is avoided for palmoplantar warts as there is risk of scarring
- Subungual warts are often resistant to treatment modalities. Cryotherapy in combination with 30% salicylic acid may be offered. But cryotherapy procedure for nail unit verrucae is painful and there may be a risk of scarring and hypopigmentation. Prolonged freezing time near the proximal nail fold is avoided to reduce the risk of matrix destruction.
- Recalcitrant subungual wart - removal of nail plate may be necessary to directly access and treat the wart tissue underneath the nail plate. This is often painful and not recommended in younger children. The procedure can be done under IV sedation.

Management of multiple genital warts (personal experience)

- Genital warts are not uncommon in children and may not always indicate underlying abuse or immunosuppression. It can occur even in immunocompetent child. Careful history taking and examination is important.
- Topical therapy is well tolerated in children and requires prolonged treatment. Topical imiquimod 5% cream can be applied three times a week at bedtime for 8 -12 weeks. Though it is not FDA approved less than 12 years, but off-label use can be done for younger children. Side effects like irritation and pruritus are usually mild. Side effects can be avoided by clear instructions to parents to apply very small quantity only on the affected areas only, with counselling regarding the potential side effects. [2]
- Cryotherapy with dipstick technique for 2-3 times every 3 weeks, until clearance.
- Due to the above procedures, the child may have irritation and tend to scratch, so it is important to use regular moisturisers to prevent koebner phenomenon. I prefer to use petroleum jelly.

Some points to be considered

- If after multiple failed treatment attempts, warts are still present, procedures like cryotherapy and electrofulguration can be considered under IV sedation under the guidance of pediatrician. Short sedation with ketamine and midazolam can be given.
- Triclofos can be administered orally for mild sedation before doing cryotherapy in younger children (in my experience I have not seen children fully sedated to triclofos, a partial inactiveness can be achieved for some time).

Literature review of available treatment for multiple warts in children [3,4,5]

Destructive Methods

- Salicylic acid 20-40% (FDA approved)
- Cryotherapy
- Electrofulguration
- Cantharidin (0.07% -1%) – Not available in India, few clinical trials
- Er:YAG laser and pulsed dye laser – no effective trials, less commonly used in pediatric age group
- Antimitotic agents – Intralesional bleomycin and topical 5% 5FU
    - Efficacy widely disputed
    - Few clinical trials in children
    - Bleomycin is not recommended in children due to excessive pain with injection
    - Studies have shown clearance of 87% warts with topical 5% 5FU after 6 months of therapy. Side effects include erythema, erosion and hyperpigmentation.

Immunomodulatory agents

- Topical and oral retinoids
- Topical 5% imiquimod
- Autoimplantation therapy (less clinical trials, variable results)
- Intralesional antigen therapy using candida, mumps and trichophyton/BCG vaccine – efficacy low, fewer clinical trials, more of adverse effects

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2. How do I manage multiple molluscum contagiosum in a child?

Author: Dr Vasudha Belgaumkar

Molluscum contagiosum (MC) is a common viral skin infection affecting school-aged children, with a prevalence of 2-8%.

Although considered self-limiting, MC often requires active management to prevent spread to other sites in the same child, by auto-inoculation (and to other children through direct contact), scarring, and to address cosmetic and social concerns. Before going onto how I manage such cases lets go through a brief review of literature on the treatment of mollusci in children.

Benign neglect/masterly inactivity/wait and watch approach: Counselling of parents regarding the possibility of spontaneous regression over 6 months to 2 years.

Curettage involves the mechanical removal of the lesions using a curette. To minimize discomfort, topical anaesthesia is applied in the form of eutectic mixture of lidocaine and prilocaine with strict observance of the maximum safe dose.

Manual Extrusion/Evisceration

It is a simple and rapid method in which the umbilicated nucleus is manually removed using a molluscum curette, gloved fingers or a scalpel (11 no blade), lancet, insulin needle, slide, or forceps.

Chemical cautery/Topical applications

Trichloroacetic Acid (25 %) is applied repeatedly on the center of the lesion until a white, frost is formed. Adverse effects include pruritus, irritation, hyperpigmentation & rarely scarring.

Potassium Hydroxide (KOH) is used in aqueous solution at concentrations of 5%, 10% & 20%, and applied once per day over the centre of the lesion with a cotton-tipped applicator or the pointed end of a wooden toothpick.5% is preferred for facial lesions and 10% KOH for the body lesions. This needs to be repeated daily till there is inflammation or crusting of the mollusci.

Salicylic Acid (10% to 30%) is a keratolytic agent with efficacy equivalent to potassium hydroxide. Twice weekly application of 12% salicylic acid gel may be beneficial in hastening resolution of MC in children.

Side effects of all chemical agents include irritation, pruritus, burning sensation, and skin peeling if not applied cautiously avoiding spillage to uninvolved skin. An emollient like white petroleum jelly is applied to protect the surrounding area.

FDA-Approved Treatment Options (currently not available in India):

Topical Berdazimer Gel (10.3%) , for treating molluscum contagiosum in patients older than 1 year. It releases nitric oxide (NO), which has antiviral effects, including inhibiting poxvirus replication and reducing an immune evasion protein called MC160.

Topical Cantharidin Solution: for molluscum in patients aged 2 years and older.

Topical retinoids
Topical adapalene, tretinoin, and tazarotene act on molluscum contagiosum by stimulating the immune system through local irritation and inflammation making them a safe and effective choice for children with multiple mollusci.
Tretinoin is initiated in a concentration of 0.025 % (gradually increased to 0.04/0.05% if tolerated) applied carefully at night after protecting the perilesional area with emollient. Treatment may be required for several weeks to months before complete resolution occurs.

Cryotherapy with liquid nitrogen typically requires one or two freeze-thaw cycles administered at intervals of one to three weeks using spot freeze technique. Potential side effects include blisters, scarring, and residual hyper or hypopigmentation (should be careful on the face).

Laser Therapy: carbon-dioxide (CO2) or pulsed dye laser therapy is considered a faster and less traumatic approach than curettage, particularly in children with resistant lesions. Adverse effects include pain, hypertrophic scars, keloids and pigmentary changes.

Immunotherapy

Immunotherapeutic methods are based on the stimulation of a cellular and/or humoral immune response that can eliminate the viral infection.

- **Imiquimod,** an agonist of toll-like receptor 7, binds to this receptor, activating the innate immune response and inducing the synthesis of interferons and interleukins. It is available in a 5% cream to be applied at night, left for 8 hours, and rinsed off in the morning, 3 times a week on alternate nights up to 12 weeks or until clinical cure.
- **Oral Levamisole:** an immunomodulatory agent has been prescribed as an adjuvant in the dose of 50 mg on two consecutive days per week. Due to potential bone marrow toxicity, use in children is fraught with risk.
- **Oral Zinc: 10 mg/kg/day x 2- 6 months**
- **Oral ranitidine: 5 mg/kg/d in two divided doses x 8 weeks.** Good quality studies demonstrating efficacy are lacking.

Auto-inoculation

Auto-inoculation therapy, specifically modified autoinoculation (MAI), is a cost-effective day-care procedure that involves piercing a molluscum lesion with a needle to transfer its viral material to the deeper dermis. This technique works by activating cell-mediated immunity, which helps clear both local and distant lesions, making it a promising treatment for multiple, wide-spread and resistant warts. Clinically apparent response is observed in 2 to 3 months.

How I manage multiple mollusci in a child (personal experience)?

In principle, multiple MC in children should be treated using modalities that cause minimal pain and scarring. Choice of treatment depends on age of child, number, size and site of lesions, availability/feasibility. It is imperative to determine the most appropriate treatment for each particular case.

In practice, in older and co-operative children with multiple molluscum contagiosum, we perform curettage or manual extrusion of as many lesions as possible to reduce the viral burden and alleviate the risk of transmission and further spread. This may be achieved in a single session or scheduled over multiple sequential sessions considering the convenience and comfort of the child. In our experience, manual extrusion of the molluscum body using gloved fingers is a simple and inexpensive technique, and is ideal when the affected child has few lesions or is afraid of surgical instruments like curettes, scalpels, or clamps. In the same session, we sometimes perform modified auto-inoculation. Although we have found curettage to be the most effective technique, it requires patient co-operation, which is often lacking in young children (particularly in cases that require repeated treatments or involve facial lesions). Topical anaesthesia can minimize the pain, but does not diminish fear in children. Moreover, topical anaesthesia is difficult to apply in certain locations such as the eyelids. Although sedation of the child (using Triclofos oral solution or sedative anti-histamine) is a possibility, this option is reserved for very specific circumstances and needs to be performed with paediatrician consultation. For the residual lesions, TCA 25 % is applied weekly with due precautions. In the event the child is too apprehensive or unable to visit the OPD, we prescribe either of KOH 10 %, Tretinoin 0.05% cream or imiquimod 5 % cream after demonstrating the correct technique of application to the parents/care providers.

In addition, the child is started on oral Zinc 5 mg/kg/d once daily. With the above-mentioned cost-effective approach, there is significant regression or even complete resolution of the molluscum lesions by 8 - 12 weeks. We compared the efficacy and safety of 10 % KOH, Imiquimod 5% cream and Tretinoin 0.05 % and found all three modalities to be effective. However potassium hydroxide solution achieved faster clearance of lesions as compared to imiquimod and tretinoin, albeit with a few transient side effects like redness, stinging sensation and crusting.

Management of Special situations:

In HIV sero-positive children, initiation of HAART (highly active antiretroviral therapy) has been found to cause resolution of molluscum contagiosum, including lesions resistant to standard treatment. Giant molluscum contagiosum, frequently encountered in severely immunocompromised individuals are quite recalcitrant and can be treated with weekly application of 5 Flurouracil cream/solution application with cryotherapy by spot freeze or dip stick technique.

Eyelid Molluscum contagiosum is a challenging scenario. Recommended management for lesions over eyelid margins includes direct excision, curettage using fine forceps (preferably under an operating microscope, hand lens or dermoscopic guidance) or radiofrequency/electrofulguration while exercising utmost caution to avoid injury to ocular tissues. A conjunctival/corneal shield may be used as a protective measure (usually available as part of accessories with laser devices). This procedure can be safely performed by dermatologists possessing a steady hand with reasonable dermato-surgical skills, provided the child is co-operative. We routinely perform it in our out-patient department for older children with eyelid molluscum. The very young or unco-operative children are either referred to ophthalmology for excision under sedation or prescribed oral zinc.

Practical tips

- **Children are counselled to avoid scratching** to prevent autoinoculation (spreading the virus to other parts of the body) and potential bacterial infections.
- **Cover as many exposed lesions as practically feasible** with transpore or micropore tape to reduce spread to others.
- Continuous application of surgical tape to each lesion daily after bathing for 16 weeks led to cure in 90% of children.
- **Do not share towels, clothing, or bathing sponges.**

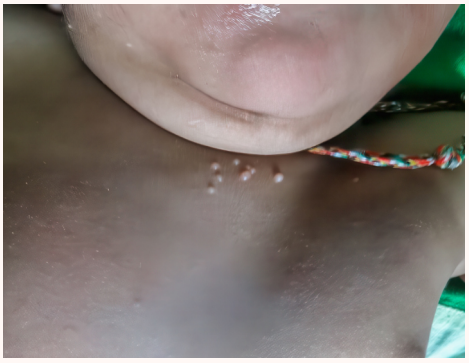

Fig 1 A – 4-year-old boy with multiple molluscum contagiosum before starting Imiquimod cream (Pre-treatment)

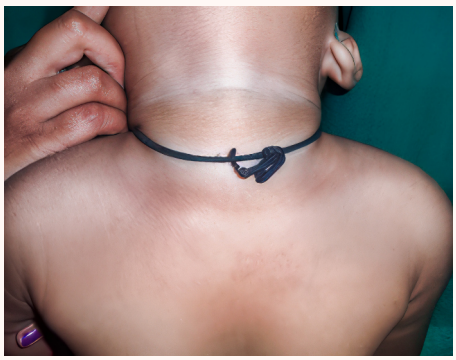

Fig 1 B -Imiquimod – complete clearance after 12 weeks

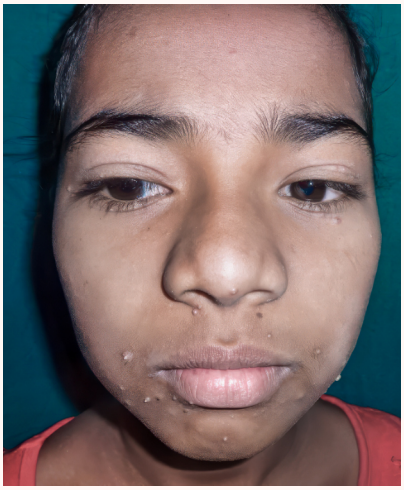

Fig 2 A – 10 year old girl with multiple MC before starting Tretinoin cream (0.05%) (Pre-treatment)

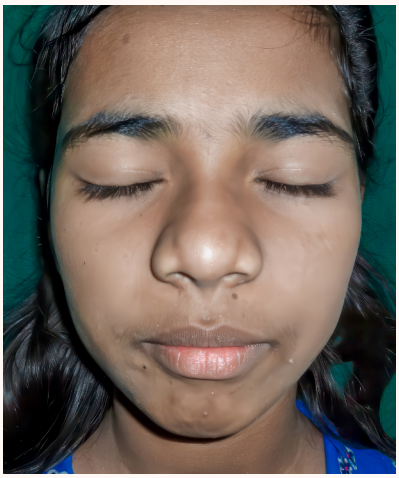

Fig 2 B - Tretinoin cream (0.05%) > 75 % clearance at 8 weeks

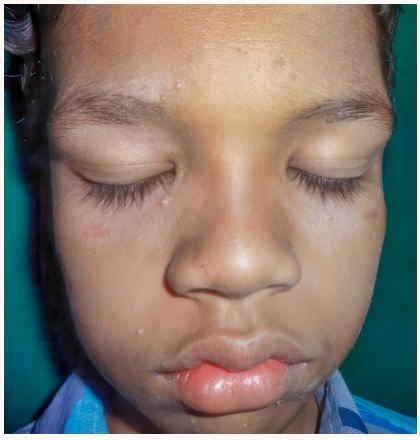

Fig 3 A – 6 year old boy with multiple mollusci prior to treatment with 10% Potassium Hydroxide

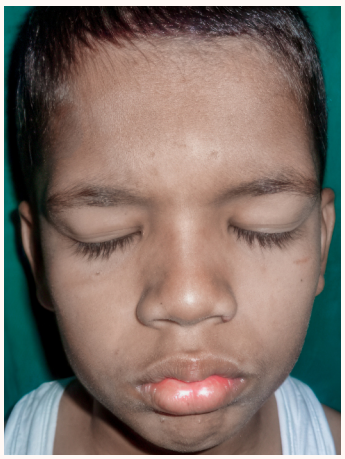

Fig 3 B – Potassium hydroxide (Complete clearance at 4 weeks)

3. Tips for pediatric skin biopsies

Author: Dr Preeti Sheth

In the current era, with dermoscopy at the forefront of dermatologic diagnosis, the need for skin biopsy has reduced, particularly in children. Parents are often apprehensive about invasive procedures, and dermatologists too prefer to avoid traumatizing a child whenever possible. Consequently, skin biopsy is not routinely performed in pediatric patients. However, there remain several clinical situations where a biopsy becomes indispensable.

When Is a Skin Biopsy in a Child Essential?

A skin biopsy in a child is indicated in the following circumstances:

1. To obtain a definitive histopathological diagnosis when the clinical diagnosis is uncertain
2. When the patient fails to respond to appropriate therapy and diagnostic confirmation is required
3. When histopathological findings are necessary to determine prognosis and guide future management
4. When excision of the lesion itself constitutes definitive treatment

Skin biopsy in children is generally safe when performed with appropriate precautions. It is preferable to perform the procedure during morning hours, when adequate support from allied specialties is readily available. In challenging situations, involving a pediatrician or pediatric surgeon can be extremely helpful.

Preparation for Biopsy

A detailed history should be obtained from the parents or guardians, including:

- Any history of bleeding or clotting disorders
- Drug allergies, especially to local anesthetics
- Current medications, including anticoagulants or antiplatelet drugs
- History of previous surgical or invasive procedures
- History suggestive of abnormal scarring or keloid formation

A written informed consent from the parents or legal guardians is mandatory for medicolegal purposes.

The procedure should be explained clearly to the parents and, where appropriate, to the child. This explanation should include the nature of the procedure, its duration, post-procedure care, possible complications, and the approximate time frame for availability of biopsy results.

Procedure Room Preparation

All instruments should be prepared before the child enters the procedure room. The local anesthetic should be preloaded, and needles and sharp instruments should preferably be kept out of the child's direct view initially. Containers with formalin or normal saline should be ready to receive the specimen. The procedure room should be well lit and adequately ventilated.

Parents or guardians may be requested to remain outside the room; however, if they are calm and non-anxious, their presence may help comfort the child. Infants can be swaddled securely with only the biopsy site exposed.

Older children and adolescents should be reassured about the procedure, explaining that the anesthetic injection may cause brief discomfort similar to an ant bite, following which the area will become numb and pain-free. Younger children may not comprehend these explanations; distraction using cartoons, videos, or interactive conversation is often effective. Offering a small reward after the procedure can improve cooperation. Concerns regarding cosmetic outcomes should be addressed, reassuring families that scarring is usually minimal.

Anesthesia

The biopsy site is cleaned with isopropyl alcohol followed by povidone–iodine solution.

Local infiltrative anesthetics such as lidocaine (0.5%, 1%, or 2%) are commonly used. Lidocaine has a rapid onset of action, typically within 1–2 minutes, and provides anesthesia lasting approximately one hour. A combination of lidocaine with adrenaline (epinephrine) at a concentration of 1:100,000 or 1:200,000 is preferred in most cases, as it reduces bleeding, prolongs the duration of anesthesia, and decreases systemic absorption.

Adrenaline should be avoided when biopsying acral or genital regions, in areas with compromised vascular supply, and in suspected cases of cutaneous mastocytosis.

Pain associated with needle insertion can be minimized by several techniques, including pinching or rubbing the skin adjacent to the injection site, cooling the area before infiltration, using a smaller gauge needle (30-gauge or smaller), and injecting the anesthetic slowly at room temperature. Buffering lidocaine with sodium bicarbonate may further reduce injection pain.

Topical anesthesia containing lidocaine 2.5% and prilocaine 2.5% may be applied to intact skin two hours prior to the procedure under occlusion. Caution should be exercised in young infants, particularly those under three months of age, due to the risk of methemoglobinemia.

Sedation using first-generation antihistamines or benzodiazepines may be considered in selected uncooperative children, strictly under pediatric supervision and with appropriate monitoring.

Types of Skin Biopsies

Common biopsy techniques used in children include punch biopsy, shave biopsy, incisional biopsy, and excisional biopsy. Incisional and excisional biopsies are preferably performed by pediatric surgeons in many centers.

Punch Biopsy

Punch biopsy is the most frequently used technique in pediatric dermatology. Punches of 3 mm, 4 mm, or 5 mm diameter may be used depending on the indication. Small wounds (≤4 mm) may be allowed to heal by secondary intention, while larger wounds usually require suturing to promote optimal healing and control bleeding.

Shave Biopsy

Shave biopsy, typically performed using a No. 15 blade, is useful in selected conditions. It is commonly employed in vesiculobullous disorders, where an intact bulla or perilesional skin may be required for histopathological examination.

The biopsy should be taken from a representative, active lesion. Facial sites should be avoided whenever possible to minimize cosmetic concerns.

Complications and Post-Procedure Care

Immediate complications are usually minor and include pain and bleeding. Applying firm pressure to the site for 10–15 minutes is generally sufficient to achieve hemostasis. Wounds created by punch biopsies larger than 4 mm are best closed with sutures.

If required, oral paracetamol may be prescribed for pain relief at a dose of 10–15 mg/kg per dose, administered every 6–8 hours.

Parents should be instructed to keep the dressing dry and intact for 48 hours. Routine use of topical antibiotics is generally unnecessary; application of petroleum jelly or a bland emollient is usually sufficient once the dressing is removed. A light bandage may be worn for a few days, after which the wound can be left open.

Wound infection is rare and may present with increasing redness, swelling, pain, or purulent discharge. Oral antibiotics should be initiated only after obtaining a pus culture and sensitivity report.

Conclusion

Skin biopsy is a relatively simple and safe procedure in children when performed with appropriate preparation and care. Clear communication with parents and children is essential to reduce anxiety and ensure cooperation. Patience, empathy, and meticulous technique are key to successfully performing pediatric skin biopsies while minimizing physical and emotional trauma.

Answer to Photoquiz 5

Author: Dr Sirisha Varala

History: A 2 years old female child was brought with complaints of gradual loss of scalp and body hair since 1month of age. The child had normal hair at birth. No history of bone pains, difficulty in walking or reduced sweating. The child was first born to third degree consanguineous parents. No family history of similar complaints. Developmental milestones were normal. The child was treated with topical and systemic steroids previously with nil response.

Clinical examination: There was near total alopecia of scalp with few strands of hair over vertex with sparse eyebrows and absent eyelashes (figure 1). Tiny monomorphic skin colored papules seen over scalp on closer examination (figure 2) and few milia noted over cheeks (figure 3). Nails and teeth were normal. No skeletal abnormalities detected. Systemic examination was normal.

Investigations- Serum calcium, alkaline phosphatase levels and Vitamin D levels were normal. Dermoscopy findings of scalp are shown in figure 4. A 3 mm punch biopsy was taken from the scalp, the HPE findings of which are shown in figure 5.

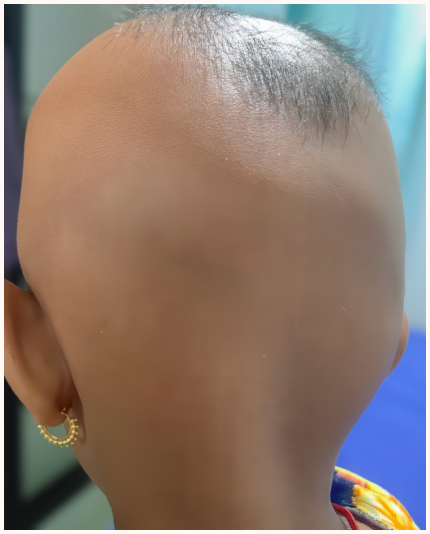

Figure 1 Near total alopecia of scalp with few terminal hair over vertex

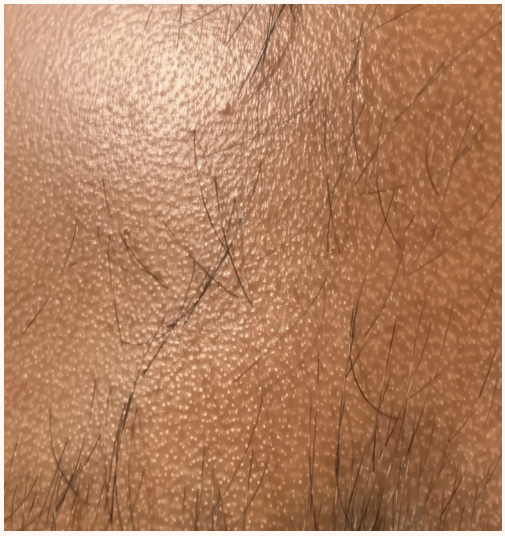

Figure 2 Close up view of scalp showing tiny monomorphic skin colored papules

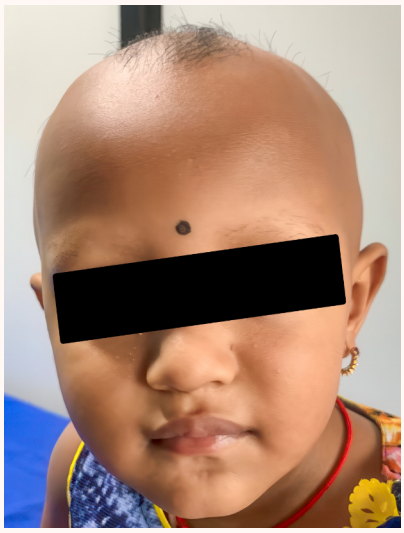

Figure 3 Sparse eyebrows and milia over cheeks

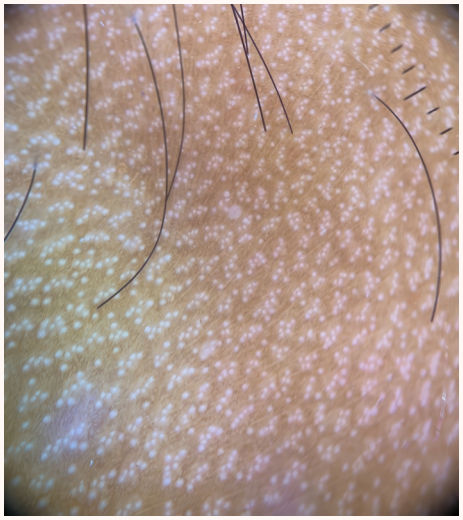

Figure 4 "Clusters" of stars appearance on dermoscopy (Dermlite DL4)

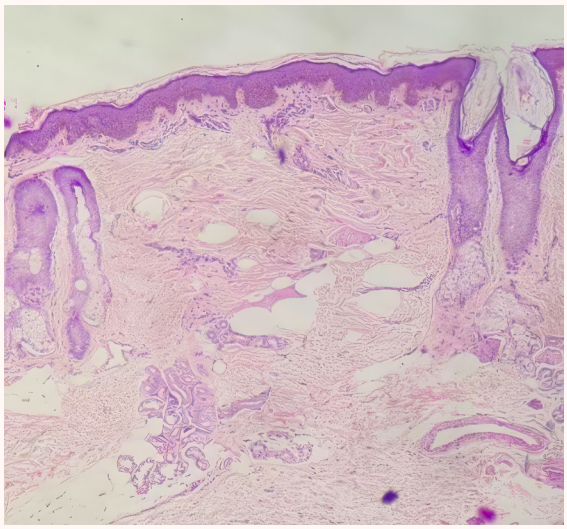

Figure 5 HPE 10x magnification showing follicular plugging (black arrow) in the epidermis with rudimentary hair follicles (red arrows) and follicular cysts (black circles) in dermis containing cornified material

What is your diagnosis?

Differential diagnoses considered were

1. Alopecia universalis
2. Congenital atrichia with papular lesions
3. Vitamin D dependent rickets type II
4. Ectodermal dysplasia

Dermoscopy of scalp showed "clusters of stars" appearance.
HPE of scalp at 10x magnification showed epidermis with focal follicular plugging. Mid dermis showed follicular cysts filled with cornified material.

A final diagnosis of congenital atrichia with papular lesions was made based on clinical, dermoscopic and histopathological findings.

Discussion :

Congenital atrichia with papular lesions is an autosomal recessive condition characterised by complete alopecia of scalp, eyebrows, eyelashes and body hair starting soon after birth. By around 2 years of age, there is development of skin coloured papules over the body due to progressive keratin retention into follicular structures, which is considered to be a hallmark of the disease.[1] These patients have otherwise normal development with no other ectodermal structures involved.

The genetic defect lies in the human hairless gene (HR) on chromosome 8p21.2 which encodes a putative zinc-finger transcription factor protein believed to regulate catagen remodeling in the hair cycle.[2] This genetic defect causes the hair matrix cells to undergo premature and massive apoptosis with a decline in Bcl-2 expression, leading to loss of communication between the dermal papillae and stem cells in the bulge where further hair growth does not occur.[3]

The histopathological examination reveals empty infundibula with irregular epithelial structures or cysts replacing the lower two-thirds of hair follicles with various sizes of keratinizing epithelial cysts at all levels of the dermis.[4] Mukherjee et al described a characteristic pattern of cluster of white dots on the scalp on dermoscopy which they named as …cluster of stars" appearance.[5] These white dots represent destroyed follicles replaced by fibrous tracts. This specific appearance on dermoscopy can serve as a non-invasive tool for diagnosis and can obviate the need for biopsy, especially in young children.

This condition is often misdiagnosed as alopecia universalis and very often treated with immunosuppressants with futile results. Hence it is important to have a high index of suspicion to diagnose these cases and avoid unnecessary interventions and side effects of the medications. Vitamin D dependent rickets type II can also present with similar kind of alopecia, however there will be associated skeletal manifestations with low calcium, phosphorus and high alkaline phosphatase and 1,25-dihydroxyvitamin D3 levels. Ectodermal dysplasias on the other hand will involve nails, teeth and eccrine glands.

The revised diagnostic criteria by Yip et al[1] will aid in the diagnosis of this rare genodermatosis.

<u>Major criteria (4 out of 5 required for diagnosis)</u>
1. Permanent and complete absence of scalp hair by the first few months of life
2. Few to widespread smooth, whitish, or milia-like papules on the face, scalp, arms, elbows, thighs, or knees from infancy or childhood
3. Replacement of mature hair follicle structures by follicular cysts filled with cornified material in scalp histology
4. Mutation(s) in the human hairless gene through genetic testing
5. Clinical and/or molecular exclusion of vitamin D–dependent rickets

<u>Minor criteria (Supplementary criteria)</u>
1. Family history of consanguinity
2. Absence of secondary axillary, pubic, or body hair growth and/or sparse eyebrows and eyelashes
3. Normal growth and development, including normal bones, teeth, nails, and sweating
4. Whitish hypopigmented streaks on the scalp
5. Lack of response to any treatment modality

The treatment is symptomatic with genetic counselling, psychological support and reassurance.

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Pediatric Dermatology Updates 2025 Lectures Snapshot (As provided by the speakers)

1. pH balanced skin care products- are we justified in prescribing?

Author: Dr. Rashmi Agarwal

Key information

- Newborn skin is initially alkaline (pH 6.3–7.5) and progressively acidifies over the first few weeks of life to attain the adult range (pH 4.5–6.0). This physiological acidification leads to the formation of the acid mantle, a critical component for barrier integrity, lipid processing, and antimicrobial defence. The acidic milieu supports the activity of key lipid-processing enzymes such as β-glucocerebrosidase and acid sphingomyelinase, facilitates ceramide synthesis, and maintains microbial homeostasis.
- Alkaline soaps (pH 9–10), produced by traditional saponification, can significantly disturb this balance by increasing transepidermal water loss, disrupting lipid organization, and causing cutaneous dysbiosis. Although healthy skin has a natural buffering capacity that restores acidity within 1–2 hours after cleansing, this recovery is slower and often incomplete in neonates and atopic skin. Consequently, the repeated use of alkaline products can perpetuate barrier dysfunction and inflammation.
- pH-balanced cleansers such as syndet bars (pH 5.0–7.0) and liquid cleansers with mild surfactants (e.g., cocamidopropyl betaine) minimize such disruption, while pH-balanced moisturizers (pH ~5.0–5.5) containing buffering agents (lactic acid, citric acid, sodium lactate), barrier lipids (ceramides, cholesterol, free fatty acids), and humectants (glycerin, 2-3% urea) help restore and stabilize the acid mantle.

Take home message

pH balanced products may be recommended for children with active atopic dermatitis or eczema, compromised skin barrier conditions and for sensitive skin with a history of irritation.

2. Are ceramide-based moisturizers required for every indication of dry skin?

Author: Dr. Jeta Buch

Key information

- Ceramides, derived from sphingolipids, form the structural backbone of the stratum corneum and constitute approximately 50% of its lipid content. They function as both a permeability barrier and a water reservoir, preventing transepidermal water loss and protecting against environmental insults. Structurally, a ceramide is composed of a sphingoid base linked to a fatty acid via an amide bond. For optimal barrier integrity, ceramides, cholesterol, and free fatty acids must exist in an equimolar ratio (3:1:1); any imbalance predisposes to barrier fragility and increased permeability.

- Pseudoceramides, synthetic analogues of natural ceramides, mimic their barrier-supportive functions. While natural ceramides are complex, variable, and costly to extract, synthetic pseudoceramides are pure, stable, and designed for enhanced permeability and cost-effectiveness.

- Modern delivery systems such as multivesicular emulsion (MVE) and liposomal formulations improve their deposition and sustained release within the stratum corneum. Both natural and pseudoceramides reinforce the skin barrier, though the latter serve as functional surrogates rather than biochemical equivalents.

- In Atopic Dermatitis (AD), ceramide chain length plays a crucial role: short-chain ceramides (C16-NS) are pro-apoptotic and increase during inflammation, whereas very long-chain ceramides (>C20; EOS, NP, NH types) are essential for lamellar organization and barrier stability. AD skin demonstrates reduced long-chain and increased short-chain ceramides, leading to defective lamellar phase formation, a shift to hexagonal lipid packing, and a porous, leaky barrier. Pseudoceramide-containing formulations can effectively patch this leaky barrier, improving hydration and reducing inflammation. However, they do not normalize endogenous ceramide synthesis or chain-length distribution, and their impact on TEWL may be minimal in mild–moderate AD. Thus, they serve as symptomatic barrier aids rather than curative interventions.

- In Psoriasis, ceramide alterations parallel those in AD but are secondary to immune-mediated inflammation and largely restricted to lesional skin. The total ceramide content is less depleted, and normalization typically occurs with effective anti-inflammatory therapy. Current evidence does not demonstrate superiority of ceramide-based moisturizers over paraffin-based emollients in psoriasis.

- In Ichthyosis vulgaris, especially in filaggrin-deficient forms, ceramide–urea combinations have shown proven efficacy in restoring barrier function.

- In acne vulgaris, reduced ceramide levels correlate with increased TEWL and greater disease severity, particularly in colder climates.

Take home message

Ceramide-based moisturizers offer targeted therapeutic benefits for specific dermatological conditions, particularly Atopic Dermatitis, Ichthyosis vulgaris and Acne, but are not universally indicated across all skin disorders

3. What should I use in Atopic Dermatitis: TCS OR TIM'S OR PDE4-I OR JAK-I

Author: Dr. Divya Gupta

The use of topical therapies in AD depends on the phase of the disease:

- Induction of remission (flares/active disease): Aim to rapidly control inflammation.
- Maintenance/proactive therapy: Daily or Fixed intermittent use to suppress subclinical inflammation, reduce relapses, and minimize cumulative exposure to drugs.

Topical Corticosteroids (TCS)

- Mainstay of treatment in active AD.
- Rapidly controls inflammation and provides relief.
- Treatment of choice in active phase; can also be used in Maintenance of Remission phase ("Proactive therapy")
- Strong evidence to support efficacy and safety when used appropriately.
- Based on potency – 7 classes of TCS (US system) but practically, we use 4 categories in practice – mild, moderate, potent, super-potent.
- Potency selection based on site, duration of application, disease severity and past treatment history.
- Avoid prolonged (>4 weeks) use of high-potency steroids, especially on face, folds, groin.
- Adverse effects: Rare atrophy, striae, telangiectasia;
- Counselling: exaggerated fears ("steroid phobia") common; Educate on fingertip unit, tapering, and transition to non-steroidal agents for maintenance.

Topical Calcineurin Inhibitors (TCIs – Tacrolimus, Pimecrolimus)

- Effective and safe alternatives/adjuncts to TCS (strong evidence).
- Can be used in active phase while tapering as well as in maintenance of remission phase (as "proactive therapy")
- Good option as first line treatment for regions like the face and body folds, which are more prone to TCS side effects
- Potency equivalents: Tacrolimus 0.1% ≈ TCS 4, Tacrolimus 0.03% ≈ TCS 5, Pimecrolimus ≈ TCS 5–7.
- Safety: Despite FDA boxed warning, large meta-analyses show no credible increased cancer risk
- Best use: Sensitive areas like face and folds, steroid-sparing maintenance.
- S/E: Local irritation/burning can happen but can be managed by cooling the ointment in fridge and applying over moisturizer.

Topical PDE4 Inhibitor (Crisaborole)

- Modest benefits in mild AD.
- Comparable to low-potency TCS (class 6/7).
- Other topicals like tacrolimus and pimecrolimus provide larger and more certain benefits in mild disease and hence preferred over crisaborole
- S/E: Burning/stinging.
- More appealing to patients preferring non-steroid, non-TCI options (non- immunosuppressive).
- Cost can be a barrier

Topical JAK Inhibitors (e.g., Ruxolitinib, 2% Tofacitinib)

- Topical JAK-I's include ruxolitinib, delgocitinib and tofacitinib
- Ruxolitinib and delgocitinib – Not available in India; Delgocitinib approved for hand eczema rather than AD; Topical tofacitinib is available in India.
- Evidence for topical JAK-I's in AD mostly pertains to ruxolitinib and there is no documented evidence of efficacy of topical tofacitinib in AD.
- Concerns for ruxolitinib use: systemic absorption, long-term safety. Use restricted (<20% BSA, short-term, discontinuous).
- Current guidance: JAKis are not an ideal option for AD in Indian children.

Modifications for using topical therapies in AD:

- Under occlusion (Wet Wrap therapy, i.e. under occlusion) – can be used as a bridge for moderate to severe AD flares before going in for systemic therapy
- Needs extra time in clinic to explain or demonstrate the procedure.
- Check whether feasible to incorporate in daily routine of patient
- Once daily vs twice daily – twice daily slightly more effective, especially in severe disease and for bringing inflammation under control quickly; S/E profile is similar in OD vs BD application.

Maintenance / Proactive Therapy

- Relapsing AD benefits from intermittent therapy (2–3 times/week, or weekends).
- Use low–mid potency TCS or TCIs on previous flare sites.
- Leads to fewer relapses, less drug exposure, lower cost, and reduced adverse effects.

Take home message

- *TCS remain the cornerstone for induction of remission in AD.*
- *TCIs are safe and effective steroid-sparing options, particularly for sensitive sites and proactive use.*
- *PDE4i and topical JAKi have roles in select patients but currently provide smaller or uncertain benefits compared to TCS/TCIs.*
- *Proactive therapy, WWT and OD vs BD application are useful ways to work with TCS and TCIs and get the maximum out of them*
- *Counselling, adherence, and individualized action plans are crucial to overcome steroid phobia and ensure sustained disease control.*

4. Systemic antifungals in paediatric practice

Author: Dr. Sunil Tolat

- Systemic antifungals were only used for tinea capitis in paediatric practice in the past
- Trichophyton indotineae , steroid misuse, and extensive tinea corporis in the present fungal epidemic have increased the need of systemic antifungals .

Griseofulvin

- FDA approved in children above 2 years
- Higher dose (20mg/kg) & longer duration (6-8 weeks) needed for tinea capitis
- Ultra microsize formulation & twice daily dose used in paediatrics
- Metabolism of drug is faster in children

Terbinafine

- Higher doses needed since metabolism is faster
- FDA recommended in children above 4 years
- 3-6 mg/kg is paediatric dose

Itraconazole

- The only effective antifungal in the current epidemic
- Change of taste is a lesser known side effect
- Drug drug interactions are an issue
- Antiepileptic and Cardiac drugs are common drug interactions
- 5mg/kg is paediatric dose
- Endocrine suppression in children to be kept in mind
- Itraconazole syrup to be given on EMPTY stomach
- Granules can be sprinkled on food and administered to the child

Fluconazole

- Most hydrophilic antifungal
- Candidal infections most important indication
- Nail fungal infections
- Renal excretion more important than Hepatic, in contrast to other antifungals
- Indicated in systemic fungal infections viz: cryptococcosis , coccididiomycosis
- Relatively fewer drug-drug interactions

Choice of antifungal according to site of infection

Tinea Capitis

- Grey patch = Ectothrix = microsporum species: - use Griseofulvin
- Black dot = Endothrix = Trichophyton species - use Terbinafine
- Favus and Kerion = Griseofulvin remains the drug of choice

Onychomycosis

- Do not use griseofulvin , due to poor penetration in nail keratin
- Pulse itraconazole is regime of choice

Steroid modified Tinea and Majocchi's granuloma

- Systemic antifungals are a must to eradicate follicular reserve of fungus and dermal invasion.

5. Is it Viral, Drug-induced, Scarlet fever or Kawasaki ?

Author: Dr. Manjyot Gautam

Fever with rash is frequent in children; causes range from benign viral infections to life-threatening conditions like Kawasaki disease.

Challenge: Many exanthems look similar → but have a completely different treatment approach; therefore early diagnosis is important to start appropriate treatment and prevent complications.

1. Importance of History

- History of drug intake prior to onset of rash
- History of prodromal symptoms (present in viral, absent in drug rashes).
- O/E: Rash morphology and distribution

2. Viral Exanthems (presenting with maculo-papular rash)

- **Classic viral: Measles**, **Rubella**, **Roseola infantum**, **Parvovirus B19**, **EBV, Dengue, Chikungunya**
- **Para-viral: Unilateral latero-thoracic exanthem (ULE), Pityriasis Rosea** are immune-mediated with characteristic distribution.

Characteristic features of Viral rash:

- Typically begins with prodromal symptoms.
- Rash spreads cephalocaudally (face → trunk → limbs).
- Pale-pink, non-pruritic maculopapular rash
- Enanthem may be present.

Condition	Key Features	Rash Characteristics	Notable Signs	Diagnostics / Notes
A. Measles (Rubeola)	3 Cs: **Conjunctivitis, Coryza, Cough (dry)** **Severe Prodrome – child irritated, looks sick**	Rash appears on Day 4 of fever Erythematous macules → **Confluent**, fades with **brownish desquamation**	**Koplik's spots**	**Measles IgM titer**
B. Rubella (German Measles)	Mild Prodrome – child looks comfortable	Resembles measles - Rash appears **Day 1–2 of fever** **Rapid progression** - Clears in **1–3 days** - No desquamation	**Forchheimer spots** **Tender lymphadenopathy** (hallmark)	
C.Parvovirus B19	Mild prodrome Rash seen only in 20%	marked redness of cheeks **(Slapped cheek) on Day 1 or 2** Confluent erythema on trunk/ extremities with **central clearing → Lacy/reticulate pattern**	**Waxing and Waning** of rash for 1-4 weeks after subsidence of infection	Common in school-aged children
D. Unilateral Latero-thoracic Exanthem (ULE)	Mild prodrome	Asymmetrical, unilateral distribution of rash Begins **near axilla - Centrifugal spread**	**No systemic symptoms - Spontaneous resolution**	Mostly in young children No sequelae reported
E. Dengue Viral Fever	Viral prodrome with fever, myalgia	**"Islands of white in a sea of red"** (indicates improvement)	Suggests **platelet recovery**	Watch for **thrombocytopenia**

3. Drug-Induced Rash

Characteristic features:

- Recent h/o drug intake (7-10 days)
- No prodrome Fever concomitant or after onset of rash
- Bright red/deep red, pruritic rash that becomes **confluent.**
- Often involves palms and soles.

Suspect DRESS (Drug Rash with Eosinophilia and Systemic Symptoms)/ DHS (Drug Hypersensitivity Syndrome) in patients:

- Delayed onset of symptoms (2-8 weeks)
- High-grade fever
- Marked facial edema with periorbital accentuation
- Lymphadenopathy
- Multiorgan involvement (Deranged LFT, RFT)
- Eosinophilia (In 40-80% of patients) or atypical lymphocytes on peripheral smear

4. Scarlet Fever

Causative Agent	**Group A streptococci (GAS)- Exotoxin**
Age	**1-10 Y**
Prodrome	**High grade fever, sore throat (pharyngitis, tonsillitis), irritable**
Rash and its distribution	• **Diffuse erythema with pinpoint papules (sandpaper skin)** • **Neck Trunk Limbs; associated with pruritus but no pain** • **Face- Filatov's mask- flushed cheeks with circumoral pallor** • **Linear petechiae in skinfolds and creases (Pastia's lines)**
Tongue	**White strawberry tongue (white coating with red, swollen papillae)** **Red strawberry tongue (white coating sheds)**
Palms/ soles	**Spared initially; Desquamation noted once rash disappears**
Other	**Exudative pharyngitis/tonsillitis, tender enlarged LN in the neck.** **No s/o viral infection (cough, cold, diarrhoea, conjunctival redness).**
Laboratory	**+ve throat culture for streptococci,** Rapid Strep-test, **WBC count & ESR**

5. Kawasaki Disease

- Must not be missed due to risk of coronary aneurysms.
- **Keep Kawasaki Disease (KD) as a differential diagnosis:** Any child age < 5 years presenting with high grade fever of > 5 days duration ; not responding to anti-pyretics.
- "Warm CREAM" mnemonic: Fever > 5 days
    - C – Conjunctivitis (non-exudative)
    - R – Rash (pleomorphic- Maculopapular, Scarlatiniform, Urticarial; involves trunk and limbs, spares the face; non-pruritic)
    - E – Edema/erythema of hands and feet → desquamation
    - A – Adenopathy (unilateral cervical >1.5 cm)
    - M – Mucosal changes (strawberry tongue, fissured lips, perianal erythema)
- Diagnosis is clinical – ECG, 2D ECHO should be done as soon as possible (within one week).
- Treatment is IVIG + high-dose aspirin; serial ECGs for monitoring.

Take home message :

- *Careful history + morphology + systemic features = correct differentiation.*
- *Viral and routine drug rashes (other than DRESS/DHS) are usually self-limited.*
- *Scarlet fever and Kawasaki disease require urgent recognition.*

6. How do I treat Segmental vitiligo in children?

Author: Dr. Vasudha Belgaumkar

- Segmental vitiligo shows poor response to medical modalities and phototherapy as compared to non-segmental vitiligo due to earlier depletion of follicular melanocytic reservoir. Excellent long-term response to surgical modalities due to confined defect of melanocyte-keratinocyte metabolism

Medical Management:

Topical agents

- Topical corticosteroids (mometasone/fluticasone) applied once daily x 4-6 weeks tapered to alternate day and then weekend pulse application (2 days per week)

- Topical calcineurin inhibitors: tacrolimus 0.03/0.1 % and pimecrolimus 1 % have equivalent efficacy but tacrolimus is more cost-effective. Best response seen on face (esp. upper eyelids). Can be used as first-line once a day application along with topical steroids or as sequential therapy (topical calcineurin inhibitor on weekdays followed by topical steroid on weekend)

- Other topical agents: calcipotriol, peptides like decapeptide, Palmitoyl tetrapeptide, Acetyl hexapeptide

- Topical JAK-STAT inhibitors {tofacitinib 2 % ointment & ruxolitinib 1.5% cream (ruxolitinib cream is the only FDA approved topical agent for vitiligo)}.Best effect seen when used in combination with Excimer.

Phototherapy:

- Narrow band or targeted Ultraviolet B show encouraging results when initiated early (within 6 months) in the course of segmental vitiligo (upto 75% repigmentation with 20 – 30 sessions of Excimer light/laser). Facial lesions respond the fastest.

- Topical PUVA/PUVA sol

Surgical management

Indications:

1.Fair trial of medical management for at least 6 months without satisfactory repigmentation

2.Stable vitiligo for at least 1 year

3.Leucotrichia, trichrome and non-facial sites (poor response seen with medical management and phototherapy)

a. Therapeutic wounding:

Advantages - Can be performed concurrently with medical management particularly in young children.

Techniques:

- Needling/Microneedling + 5-Fluorouracil cream/solution
- Dermabrasion/Intradermal + 5 Fluorourcil cream/solution
- Fractional laser + 5 FU
- MN + Ruxolitinib cream

b. Surgical techniques:

1. Tissue: Suction blister epidermal grafting
2. Cellular: Non-Cultured Epidermal cell Suspension
3. Follicular unit extraction for leucotrichia

Challenges faced in performing surgical procedures for segmental vitiligo in children

- No consensus regarding appropriate age of child for surgical management:
- Segmental lesions in younger children extend proportionate to body growth. Hence it may be prudent to wait until the child attains puberty
- Anaesthesia for un-cooperative children : Trichlorophos/short sedation/dissociative anaesthesia
- Intra & post-operative Immobilisation is difficult
- Post-procedure phototherapy is mandatory & poses logistic issues
-

Supportive measures:

- Psychological support & counseling crucial to address self-esteem and social challenges. Parents/ family and peers need to be counseled as well.

- Sun protection (sunscreens & clothing): prevents burns & contrast exaggeration.

- Camouflage cosmetics : allows temporary concealment & boosts confidence

Take Home message

- *It is important to correctly diagnose segmental vitiligo and differentiate it from its mimics*

- *For unstable segmental vitiligo (<20% body surface involvement): topical agents (topical steroid , tacrolimus/pimecrolimus, calcipotriol) with Excimer light/laser*

- *Unstable (>20% body surface involvement): Narrow band UVB with Corticosteroid Oral mini pulse therapy (Ideally, OMP should not exceed more than 3 months duration). Immunosuppressives like tofacitinib may be considered only in exceptional circumstances for rapidly progressive segmental or mixed vitiligo in older children & adolescents with utmost caution and stringent monitoring.*

- *Stable segmental vitiligo: surgical/procedural modalities*

7. How I treat acquired hypopigmentation?

Author: Dr. Preeti Sheth

Pityriasis alba

- Counsel parents that it is a dry skin condition often associated with atopic dermatitis. Spontaneous resolution is slow, and can take weeks to even months and year to resolve spontaneously. It has frequent recurrences. Emollients are the mainstay of treatment.
- Apply moisturizer three times daily all over face, followed by tacrolimus 0.1% ointment twice a day over the patch. Tacrolimus must be applied one hour after moisturizing. Pimecrolimus is equally effective and an option for those who complain of burning with tacrolimus. Topical Calcitriol is another option.
- Sunscreens can be advised during excessive sun exposure, as tanning can make the patch prominent.

Polymorphous light eruption

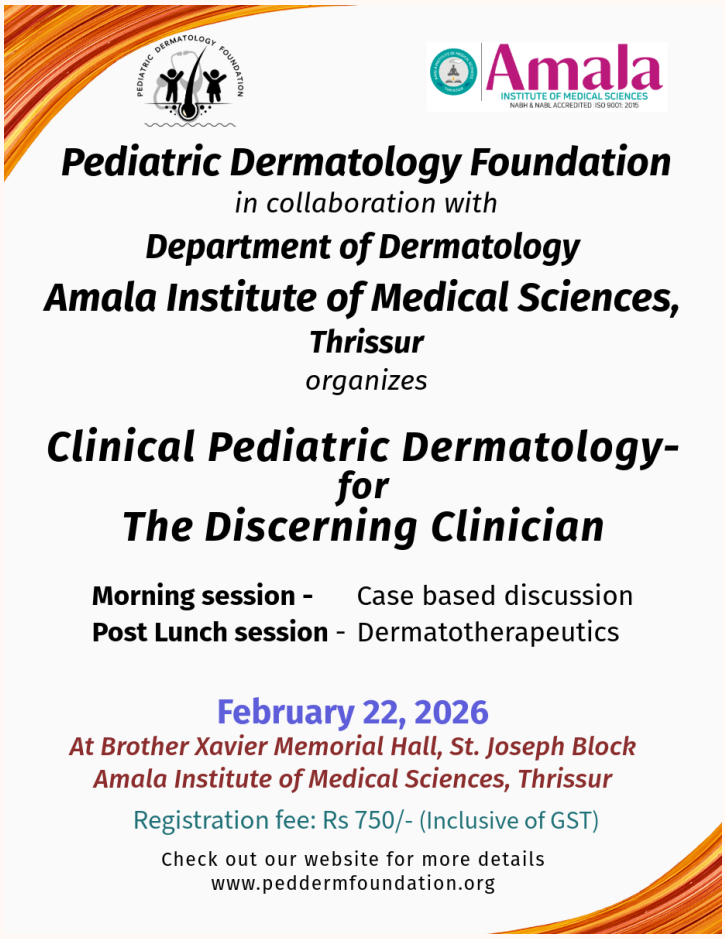
- Avoid sun exposure between 11am and 3pm. UVA and UVB are at peak of activity. Protection against sunlight is important. Walk in shade, wear broad brimmed hat, use umbrella, full sleeved clothing. Ultraviolet clothing available especially for children into sports. Apply physical sunscreen all over face and repeat every 2 hours ideally.
- Moderately potent topical steroids canbe applied on the patches at night for 2-3 weeks.
- Once hypopigmentation settles in, switch over to tacrolimus 0.1% oint twice a day.
- Then begin to desensitize the child to sunlight. Expose the child to sun during 11am to 3pm without sunscreen, 15-20 minutes daily. This is called hardening phenomenon. However, hardening is temporary, lasting for 4-6 weeks. And hence, one needs to expose themselves to the sunlight daily for 5-10 minutes thereafter without sunscreen to sustain the benefits. This helps in preventing recurrences.

Eruptive hypomelanosis

- It is a paraviral exanthem which is characterised by the sudden occurrence of hypopigmented, 1mm, discrete, finely scaled macules on face, shoulders and thighs. It occurs around 2 weeks after a viral episode. Family clustering is seen.
- It is self limiting in nature, and takes 6-8 weeks to resolve spontaneously. Sun exposure daily for 5 minutes can help faster repigmentation.

Post inflammatory hypopigmentation

- Crucial to know the cause of PIH to counsel and offer treatment. Shape and location of the lesions can help determine cause of the disease leading to PIH.
- For eg, PIH following lichen striatus may take 6 months to 2 years to resolve. PLC responds best to UVB for prevention of recurrences and to improve pigmentation.
- Stubborn hypopigmentation- apart from sun exposure and tacrolimus, other options are NBUVB and excimer laser, 5% coal tar and selenium sulphide.
- 5% coal should be mixed with emollient, applied on the affected patches and night, followed by sun exposure the next morning. Coal tar has photosensitising properties that help regain colour. Selenium sulphide works on the same principle.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