Dermatologic Concerns of the Lower Extremity in the Pediatric Patient

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KEYWORDS

• Pediatrics • Warts • Genodermatoses • Sweaty sock dermatitis • Psoriasis • Eczema

KEY POINTS

- Cutaneous disorders of the lower extremity in pediatric patients deserve special attention because their body surface area differs from that in adult patients.
- Special care should be taken in educating parents and making children comfortable if a procedure is necessary on the lower extremity.
- Various skin conditions, ranging from environmental to infectious, can be seen and treated on the lower extremity in pediatric patients.

DIAGNOSING SKIN DISEASE IN THE PEDIATRIC POPULATION

A pediatric patient presenting with a skin condition can prove a challenge to diagnose and manage. When faced with a patient with a skin condition in the office, the practitioner should have a systematic approach to arrive at a baseline differential diagnosis: observe and ask. After clinically visualizing the lesion, it may be helpful to perform a skin biopsy to refine the diagnosis or, in some cases, act as a therapeutic tool to excise the lesion.

Observe

On entering a treatment room, the practitioner should notice the color, shape, and size in addition to laterality of the patient's lesions on the lower extremity.[1] Primary and secondary lesions (macules, pustules, vesicles, and so forth) should be used to describe the rash appropriately both in the chart and in correspondence to other physicians. When looking at the shape of the lesions, it is helpful to determine if they are self-induced by the patient (excoriation by a fingernail) or naturally caused (scaly skin). The practitioner should document if the lesions are plantar foot, dorsal foot, or headed proximally on the lower leg. Nail involvement should be noted. Finally, the fingernails

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and dorsum and palmar aspects of the hands should be examined because many skin dermatoses mirror the pedal involvement there.

Ask

Questions that help form differential diagnoses should be asked when completing the physical examination of the skin. Often, a patient answers a question that helps direct the diagnosis, but in pediatric patients, interview of the guardian is paramount. Beyond asking the history of present illness, past medical history, and family history, the physician should consider asking if there is a personal or family history of allergic rhinitis, sensitive skin, asthma, or skin cancer. Patients should be asked if they had ever seen a specialist before and if they have any skin lesions (or rashes) anywhere else on the body that may or may not be similar to what is seen on the lower extremity. Unfortunately, most patients do not correlate what is happening on the rest of the body to what is manifesting on the plantar aspect of the feet. It is the physician's responsibility to ask the questions to make that connection. It is helpful to ask if the skin has ever been biopsied (for example, "Did you have a piece of skin removed and then have stitches?"). A skin scraping for potassium hydroxide (KOH) that was completed by another physician does not count as a proper biopsy to base a diagnosis on, because a biopsy of inflammatory skin disorders should include the dermis from a pathology perspective. Other questions to consider asking patients are the color of socks they wear (azo dyes in blue socks can be a potential allergen), daily recreational activities, and any associated daily hazards. Also, they should be asked about both over-the-counter and homeopathic or natural treatment options they have tried. To plan for a possible in-office biopsy that visit, it is important to ask what the natural progression of the lesions has been and where the newest crop of lesions are.

After the basic observation and questioning have occurred, it is important to delve more deeply into the chief complaint and examine the skin fully.

A Note on Skin Biopsies and Other Cutaneous Procedures in the Pediatric Patient

Many of the following skin issues discussed in this article may require a skin biopsy as a diagnostic and therapeutic tool. It is important to consider the following when performing a cutaneous procedure.

First, consider the parent. After explaining thoroughly the procedure to the parent, the practitioner may give the parent a job to assist during the procedure. This may consist of the parent holding the child in his or her lap or distracting the child during the injection.

Second, making the child comfortable before, during, and after the procedure is paramount. For example, application of topical lidocaine to the area in question may be helpful in easing pain from the initial needle stick.[2] Also, pinching, rubbing, or vibration of the skin prior to injection may reduce pain from the injection. During the injection process itself, techniques of distraction, such as blowing soap bubbles, allowing the child to hold a favorite toy, listening to music with headphones, and conversing with the child, can be used.[3] These methods, followed by positive feedback verbally or with an object (a toy or sticker), reduce the overall anxiety caused by the procedure.

Dealing with an older child requires discussing the procedure in simple terms directly to the patient and describing how the injection or procedure will feel. Again, during and after the procedure, conversing with and rewarding the patient may make the overall experience a comfortable one for the child.

Lastly, it is important to set limits for the child postoperatively to have the best scar outcome. This is particularly relevant for the plantar foot. The use of crutches and