

# Accidental self-administration of an epinephrine autoinjector by a toddler

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**A** 3-year-old boy presented to the emergency department with acute left knee pain and inability to bear weight with his left leg. He had a peanut allergy, for which he had been prescribed an epinephrine autoinjector. Five days before presentation, he had taken his autoinjector from his mother's purse and had accidentally self-administered it into his left knee before his mother could stop him.

Examination showed a warm, swollen, erythematous joint with limited active and passive range of motion. A small puncture wound was visible on the lateral aspect of the knee at the site of epinephrine administration (Figure 1). A radiograph showed a large effusion in the suprapatellar recess. Laboratory analysis showed a normal white blood cell count of  $9.5$  (normal range  $5.0$ – $12.0$ )  $\times 10^9/L$ , an elevated C-reactive protein level of  $81.6$  (normal range  $0$ – $5.0$ )  $mg/L$  and an elevated erythrocyte sedimentation rate of  $97$  (normal range  $0$ – $10$ )  $mm/h$ . We diagnosed septic arthritis. The patient underwent urgent joint irrigation and débridement under general anesthesia, which yielded approximately  $50$  mL of purulent material. Specimen cultures tested positive for *Staphylococcus aureus*. We prescribed cefazolin in hospital, followed by 6 weeks of cephalexin. After discharge from hospital, the patient continued to carry his epinephrine autoinjector.

Intramuscular epinephrine autoinjectors are the first-line therapy for anaphylaxis.<sup>1</sup> With increasing rates of food allergies, rates of prescriptions for epinephrine autoinjectors have also risen.<sup>1</sup> Accidental epinephrine administration is an infrequent complication, occurring once per 50 000 autoinjectors prescribed.<sup>2</sup> About 45% of patients injured are children younger than 11 years.<sup>1</sup> Fingers are the most common sites of accidental injections, with temporary and mild consequences.<sup>1,2</sup> Treatment is supportive, although phentolamine, terbutaline and nitroglycerin may be used for digital ischemia.<sup>2</sup>

Current guidelines do not specify a minimum age at which children can self-administer epinephrine; this decision is based on patient maturity and demonstration of adequate technique. As the benefits of carrying epinephrine autoinjectors far outweigh the risks, patients should be referred to instructional materials available on manufacturer websites, and should be equipped with training kits and an anaphylaxis action plan.<sup>3</sup>

## References

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**Figure 1:** Septic arthritis in a 3-year old boy. Photograph of the patient's swollen left knee. A small area of erythema is noted on the lateral aspect of the left knee at the site of accidental epinephrine autoinjector administration.

**Competing interests:** Samira Jeimy reports having been on speaker's bureaus for Aralez, AstraZeneca, Sanofi, Medexus, Stallergenes Grier and Novartis, and on the advisory board for Sanofi. No other competing interests were declared.

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