

# Ear Indentations on an Infant

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An 11-month-old boy was brought to our University of Florida Child Protection Team by child welfare services after his foster mother had noticed what appeared to be “10 healing puncture wounds” on the infant’s ears. The child protective investigator reported that the boy had “indentations on his ears as though someone was trying to pierce them.”

The boy had been sheltered from his biological mother approximately 2 weeks earlier because of the mother’s substance use. The boy had undergone a mandatory foster care examination within 72 hours of his foster care placement. No ear abnormality was documented at that time. His primary care provider’s medical record was also reviewed. Although the child had a history of ear infections and a hospitalization for bronchiolitis, no mention of an abnormal external ear examination was documented.

The boy was brought to the University of Florida Child Protection Team for medical evaluation by a transporter for child welfare services. Since there was no caregiver present, no additional medical or social history was obtained.



Figure 1.



Figure 2.

## Physical Examination

The boy had average weight and length for his age, with a head circumference that was 25% for his age. He was alert and socially interactive. He had a small umbilical hernia that was reducible.

An ear examination revealed multiple indentations on the posterior aspect of the bilateral pinnae (**Figures 1-3**) that were consistent with bilateral posterior helical pits or posterior earlobe indentations (PELI). The rest of his examination findings were unremarkable.



Figure 3.

## Discussion

Most pediatric health care providers are familiar with preauricular sinuses (ear pits), as they are a common abnormality that generally do not require treatment. Preauricular sinuses are usually located adjacent to the external ear and can be unilateral or bilateral. Approximately 25% to 50% of cases are bilateral preauricular sinuses, which increases the likelihood that they are inherited.<sup>1</sup> In 3% to 10% of cases, preauricular sinuses are associated with hearing and renal abnormalities.<sup>1</sup> Studies suggest that further workup is only necessary when the preauricular sinuses are accompanied by another malformation or dysmorphic feature.<sup>1</sup>

Our patient had posterior helical ear pits (PHEP) or indentations. Unlike pre-

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## DISCLOSURES:

The authors report no relevant financial relationships.

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auricular pits, PHEP or PELI are uncommon and can frequently go unnoticed by health care providers. They have been described in the literature as pits, depressions, indentations, and dimples.<sup>2</sup> PHEP can occur as an isolated trait with apparent autosomal-dominant inheritance but have also been linked to several genetic syndromes, including Beckwith-Wiedemann syndrome, Simpson-Golabi-Behmel syndrome, and Rubinstein-Taybi syndrome.<sup>3,4</sup> PHEP are visible at birth and do not change throughout life.<sup>3</sup> The pathogenesis of PHEP or PELI is not fully understood. They are considered to be simple cosmetic anomalies and do not require surgical correction.<sup>2</sup>

### Patient Outcome

Since the boy's PHEP/PELI had been a missed clinical finding, the primary care provider was contacted and informed about our findings of PHEP/PELI, in case additional testing such as a renal ultrasound was warranted. Because the boy had no dysmorphic features, had passed

his neonate hearing screen, and had no significant family medical history, the primary care provider felt that no further testing was necessary at that time.

### Conclusions

It should be noted that the ears are a common location for sentinel injuries in infants. Sentinel injuries are injuries that appear relatively minor but may identify infants and children at high risk for future serious or fatal inflicted injury. Think of these injuries as the tip of the iceberg, a clue as to potential serious underlying or future injuries that may be easily missed or overlooked. While the posterior pinnae are often not viewed during routine medical evaluations, it is important to view the entire external ear in child abuse examinations. The strongest differentiator of whether bruising in abusive or nonabusive situations lies in the region of the body that is bruised and the age and developmental stage of a child. Bruising to the ears in infants and children is significantly more likely to occur from

abuse than from accidental injury. It is imperative that clinicians remember their obligation as mandatory reporters to refer any children with concerns for abuse or neglect to their local child welfare services for further evaluation.

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