

Naomi Dreisinger, MD
Amit Bakshi, MD

From the Department of Emergency Medicine, Beth Israel Medical Center, New York, NY.

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Figure 1. Frontal swelling and discoloration.



Figure 2. Frontal swelling.

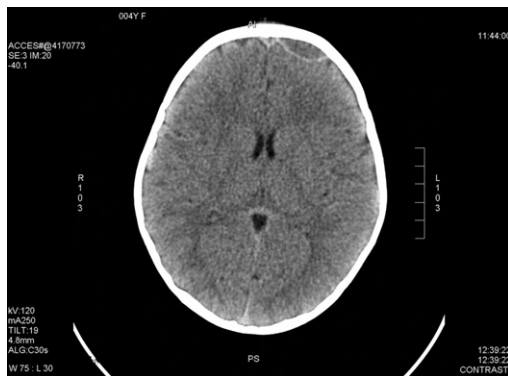


Figure 3. Computed tomography: epidural collection.



Figure 4. Computed tomography: epidural collection. Used with permission of Naomi A. Dreisinger, MD, Department of Emergency Medicine, Beth Israel Medical Center, New York, NY.

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A 4-year-old patient was brought in to the pediatric emergency department (ED) by her parents, with the chief complaint of fever and facial swelling. Three days previous, the parents had noticed a lump on the child's forehead; at that time she had slight rhinorrhea but no further complaints. One day later, the patient was brought in to the ED. At that time, the patient was discharged home with the diagnosis of occult trauma and upper respiratory infection. Fever developed within the past 24 hours, and on the day of arrival the family observed that the patient was sleepier than usual.

On physical examination, the patient was sleeping but easily arousable and was a well-appearing girl. Her vital signs were significant for a temperature of 39.3°C (102.7°F) and a pulse rate of 146 beats/min. The only significant examination finding was a 3×2 area of swelling in the central portion of the forehead (Figures 1 and 2); in addition, the patient had a slight nasal discharge.

An intravenous line was placed, and blood was collected for a CBC count, basic chemistry, blood cultures, and a sedimentation rate. A head computed tomographic (CT) scan including paranasal sinuses was obtained (Figures 3 and 4).

For the diagnosis and teaching points, see page 328.

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DIAGNOSIS:

Epidural abscess. Head CT revealed a parasagittal frontal epidural collection, explaining the swelling found on the child's forehead. Additionally, complete opacification of the right frontal, anterior ethmoid, and maxillary sinuses, as well as bilateral sphenoid mucosal thickening, was observed on the paranasal sinus portion of the CT.

Sinusitis in young children is not a simple diagnosis. There are 4 paired sinuses: maxillary, ethmoid, sphenoid, and frontal. The maxillary and ethmoid sinuses are aerated soon after birth; the frontal sinuses are generally not radiographically visible until 7 years, and the sphenoid sinuses are not fully aerated until 9 years. Young patients who present with sinusitis generally have a fever greater than 39°C (102.2°F) and a several-day history of purulent nasal discharge; this is often accompanied by general complaints such as fatigue, malaise, and decreased oral intake. Headache, dental pain, and facial tenderness are less frequent complaints in children. Only 8% of patients have facial pain. The local extension of sinusitis such as that which occurred in our patient may result in facial cellulitis, facial abscess, periorbital or orbital cellulitis, osteomyelitis of the skull (Pott's puffy tumor), epidural abscess, and meningitis.

An epidural abscess caused by local extension of sinusitis is treated with intravenous antibiotics. In this patient, the abscess ultimately required surgical drainage.