

# Features Differ in Sinogenic Intracranial Infections

BY DOUG BRUNK  
San Diego Bureau

SAN DIEGO — Children with intracranial complications of sinusitis are significantly older, and have longer hospitalizations and more neurologic sequelae, compared with children who have intraorbital complications of sinusitis, Dr. Veronica K. Goytia reported at the annual meeting of the Infectious Diseases Society of America.

Recognition of clinical features suggestive of either intraorbital extension or intracranial extension is critical to initiating medical and surgical interventions that optimize outcome, said Dr. Goytia, a pediatric infectious diseases fellow at Baylor College of Medicine and Texas Children's Hospital, both in Houston.

In a study that is among the largest of its kind, Dr. Goytia and her mentors, Dr. Carol J. Baker and Dr. Morven S. Edwards, described the features of illness in 58 children under the age of 18 years who were admitted to Texas Children's Hospital with sinusitis complicated by intraorbital and/or intracranial extension from 1997 through 2006.

They defined sinusitis as paranasal sinus

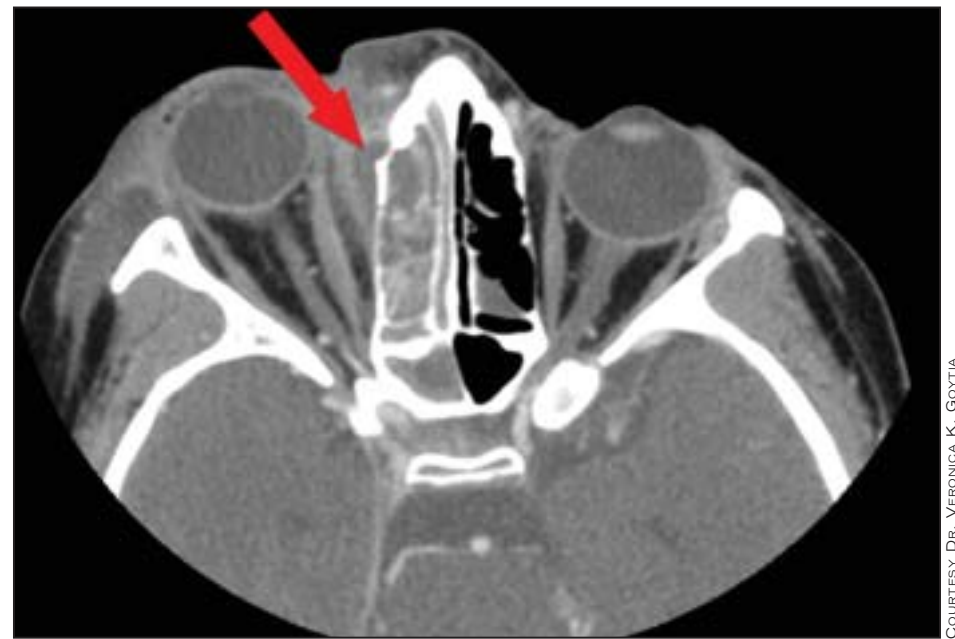
opacification on diagnostic imaging performed within 72 hours of admission. Intraorbital extension (IOE) was defined as an infection within or involving the bony confines of the orbit, whereas intracranial extension (ICE) was defined as an infection of sinusitis beyond the confines of the sinuses and orbit.

Of the 58 children, 26 had IOE and 32 had ICE. Intracranial complications consisted of dural enhancement (17 patients), subdural empyema (15), epidural abscess (14), frontal bone osteomyelitis (9), brain abscess (4), and sinus thrombosis (1). Some patients had more than one complication.

Children with ICE were significantly older than children with IOE (a mean of 11 years vs. 6 years, respectively). There was no difference in ethnicity between the two groups, and males outnumbered females by nearly two to one.

Prior to hospital admission, a majority of children with IOE had been seen by their primary care physicians, whereas children with ICE "were more likely to have come to a community hospital for evaluation, and had significantly more preadmission encounters than [did] those with IOE," Dr. Goytia said.

There were no significant differences be-



A cranial CT scan of a 12-year-old patient shows orbital abscess (red arrow) in the setting of ethmoid and sphenoid sinusitis.

tween the ICE and IOE groups in history of allergic rhinitis, dental surgery, otitis media, or trauma, but children in the ICE group were more likely than their IOE counterparts to have a history of acute or chronic sinusitis.

The most common presenting features for both groups were fever, headache, and vomiting. There were no differences between groups in the level or duration of fever, but children in the ICE group were

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This is a message from the *Childhood Influenza Immunization Coalition* members:

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# Survey: RotaTeq Use Varies per Years in Practice

BY DOUG BRUNK  
San Diego Bureau

SAN DIEGO — Pediatric clinicians who have been in practice for less than 10 years were more likely to recommend the RotaTeq vaccine for routine childhood immunization compared with their counterparts who have been in practice for more than 10 years, results from a small survey suggest.

"We hypothesize that this may be due to the previous experience with RotaShield and its withdrawal from the market in 1999 due to intussusception," Dr. Lara Jacobson said in an interview during a poster presentation given at the annual meeting of the Infectious Diseases Society of America.

In February 2006, the U.S. Food and Drug Administration approved RotaTeq (human-bovine pentavalent reassortment vaccine) as a rotavirus vaccine. In August 2006, the Advisory Committee on Immunization Practices (ACIP) recommended RotaTeq for routine childhood immunization.

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more likely to have longer duration of headache, compared with children in the IOE group (a mean of 11 days vs. 3 days).

Dr. Goytia reported that broad-spectrum antibiotics were initiated in all children within 48 hours of admission. "The most common combination of antibiotics was vancomycin, cefotaxime, and metronidazole," she said. "The most common regimens contained vancomycin, a third-generation cephalosporin, and either metronidazole or clindamycin for anaerobic organisms." The duration of intravenous therapy was longer for children in the ICE group, compared with those in the IOE group (a mean of 35 days vs. 15 days).

The most common organisms isolated were streptococcus and staphylococcus, including both methicillin-susceptible *Staphylococcus aureus* and methicillin-resistant *S. aureus*. Gram-negative aerobic organisms were isolated occasionally in both groups, but anaerobic organisms were isolated exclusively in ICE patients.

In the ICE group, 31 patients underwent surgical procedures, compared with 20 patients in the IOE group. Endoscopic sinus surgery was common in both groups of patients. "More than half of ICE children underwent neurosurgical intervention," Dr. Goytia said.

All children survived. Neurologic sequelae were seen in five children (16%) in the ICE group, and included one case each of the following: diplopia, hemiparesis, loss of vision, expressive aphasia, and cognitive and speech deficit. No children in the IOE group experienced neurologic sequelae. Frontal sinuses were undeveloped significantly more often in the IOE group, compared with the ICE group (58% vs. 22%).

"We speculate that undeveloped frontal sinuses in younger patients may provide a protective effect from developing intracranial extension of sinusitis," Dr. Goytia said. ■

In an effort to measure acceptance of the RotaTeq vaccine, Dr. Jacobson's associate, Dr. Aaron M. Milstone, administered a survey to 120 pediatricians, family physicians, and nurse practitioners while they were attending a continuing medical education conference at Johns Hopkins Hospital, Baltimore, in April 2007.

Of the 105 clinicians who completed the survey, 84% agree with ACIP's recommendations for routine administration, 86% inform their patients of the vaccine,

and 88% recommend the vaccine to their patients, reported Dr. Jacobson of the department of pediatrics at Johns Hopkins University.

All clinicians who had been in practice for less than 10 years reported recommending the vaccine to their patients, compared with 81% of those in practice for more than 10 years, a difference that was statistically significant.

"I was surprised by the strength of this difference," Dr. Jacobson said. "That

would be hundreds of thousands of vaccines that are not being prescribed per year in a very specific demographic of pediatricians."

One of the study's coauthors, Dr. Mathuram Santosham, was a principal investigator on a RotaTeq vaccine safety and efficacy trial funded by Merck Sharp & Dohme.

Dr. Milstone and Dr. Jacobson stated that they had no relevant financial relationships to disclose. ■

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\*RSV = respiratory syncytial virus.

\*ICU = intensive care unit.

References: 1. Langston C, Kida K, Reed M, Thurlbeck WM. Human lung growth in late gestation and in the neonate. *Am Rev Respir Dis.* 1984;129:607–613. 2. Horn SD, Smout RJ. Effect of prematurity on respiratory syncytial virus hospital resource use and outcomes. *J Pediatr.* 2003;143:S133–S141.

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