

COMORBIDITY

Rhinosinusitis in Children: Do We Really Need Paranasal Sinus Radiography?

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We read with great interest the paper by Stelmach et al. (1) that reports low-dose computed tomography (CT) may replace PS plain X-ray and conventional CT to better support clinical decisions. However, we would like to comment on this. Epidemiological research has shown that exposure to high levels of ionizing radiation increases the risk of cancer, particularly leukemia in children and breast and thyroid cancer in adults (1). Some studies have also associated radiation exposure during childhood with a higher risk of cancer than exposure at other ages (2, 3).

A history of protracted respiratory symptoms (>10 but <30 days without evidence of improvement) has been shown to predict abnormal radiographs (complete opacification, mucosal thickening ≥ 4 mm, or air-fluid level) in 80% of children (4). Clinical history predicted abnormal sinus radiographs in 88% of children aged 6 years or younger, and a history of persistent symptoms predicted abnormal sinus radiographs in 70% of children older than 6 years of age. The incidence of acute bacterial sinusitis peaks among children aged 6 years or younger. Given that a positive history so frequently predicts abnormal sinus radiographs in this age group (and because the history and abnormal radiograph combined are associated with a positive sinus aspirate in 75% of cases), radiographs can be safely omitted and acute bacterial sinusitis can be diagnosed on clinical criteria alone (5).

Clear radiographs of the paranasal sinuses are technically difficult to obtain, particularly in very young children. Correct positioning may be difficult to achieve and the radiographic images may thus over- or underestimate the presence of abnormalities within the paranasal sinuses (6, 7). Also, there are many opportunities for errors in the interpretation of these images, due to the

early developmental stage of the paranasal sinuses before the age of 6 years.

Numerous investigations have demonstrated the high frequency of abnormal paranasal sinus images in children undergoing radiographic examination for indications other than suspected sinusitis (8, 9). Glasier et al. (9) found that nearly 100% of young children undergoing CT examinations for reasons other than sinus disease and who had had an upper respiratory tract infection in the previous 2 weeks demonstrated soft-tissue changes in their sinuses. Despite these findings, CT remains the technique of choice for sinus examination, particularly in children with complications or very persistent or recurrent infections that are unresponsive to medical management (10).

Our letter is intended to discourage the indiscriminate use of paranasal radiography for young children, which is routinely performed in many health centers (11). The guidelines of the American Academy of Pediatrics and the American College of Radiology state that paranasal radiography is contraindicated for the assessment of rhinosinusitis (5, 12). Similarly, otolaryngologists do not recommend radiography, CT, or magnetic resonance imaging for the diagnosis of uncomplicated cases of acute bacterial sinusitis in any age group (13).

DECLARATION OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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