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Seasonal clustering of paranasal sinusitis related subdural empyema: should NICE guidelines be changed based on this observational study

Anne Elserius, Hammad U. Qureshi, Pasquale Gallo, Guirish Solanki, Desiderio Rodrigues
Department of Neurosurgery, Birmingham Childrens' Hospital, United Kingdom

Introduction: Intracranial infections are relatively uncommon in children and can be potentially devastating leading to serious neurological sequelae and mortality. Otorhinolaryngeal infections, especially paranasal sinusitis, are the most common predisposing factor reported.

An audit was undertaken to evaluate the epidemiology, management and outcome of subdural empyema secondary to sinusitis in paediatric population and make recommendations for its prevention and outcomes.

Methods: A 5-year retrospective review of all cases of subdural empyema that were admitted and managed at a major paediatric neurosurgical unit from May 2008 to January 2013 was completed. The medical notes, radiology and laboratory results of all patients were reviewed.

Results: 26 cases (9 girls and 19 boys) were identified. The median age was 13 years. 12% of these patients were started on antibiotics for sinusitis prior to admission.

A statistically significant tendency for clustering of cases during the winter months of October to January ($p < 0.001$) was observed.

Patients presented with a variety of symptoms including headaches, fever, seizures, nausea and vomiting. A focal neurological deficit at presentation was noted in 38% cases.

Positive cultures were identified in 58% cases with streptococcal isolates in 87%. All patients were treated with multidisciplinary input from neurosurgery, ENT and microbiology. All our patients had an excellent outcome with no long-term morbidity and no mortality.

Conclusions: This series show clustering of paranasal sinusitis related empyema cases in the winter season.

Current NICE guidelines do not recommend antibiotic use for rhino sinusitis in children. Based on this observational study, early use of antibiotics and early referral of children with prolonged symptoms of sinusitis to rhinologists may prevent occurrence of this dreaded complication.