Clinical Features and Treatment of Retropharyngeal Abscess in Children

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Abstract

Objective: To characterize presentation, treatment and outcomes of pediatric retropharyngeal abscesses and determine optimal treatment.

Methods and Materials: Chart review of 162 patients with retropharyngeal abscesses at a tertiary children’s hospital.

Results: Initial treatment was surgery in 126 patients, IV antibiotics in 36, of which 17 ultimately required surgery. Findings were negative in 30 cases, murky fluid in 34, and frank pus in 70. Factors predicting positive surgical drainage were duration of symptoms >2 days, prior antibiotic treatment, and CT lesion cross-sectional area >2.0cm2. Mean length of stay was 4.3 vs 3.6 days (p=0.14), and duration of fever were 2.4 vs 1.4 days (p=0.01), for patients with no fluid and fluid at surgery, respectively. For antibiotic vs. surgery groups, neither outcome was significantly different.

Conclusions: These predictive factors may be useful in selecting patients with retropharyngeal abscesses who might be treated definitively with IV antibiotics alone.

Introduction

Retropharyngeal abscesses (RPA) are uncommon complications of upper respiratory infections in children resulting from spread of infection to and eventual suppurative of retropharyngeal lymph nodes. Historically, these processes had caused significant morbidity and mortality, but advances in imaging, early detection, and antibiotic treatment have greatly reduced these outcomes. In addition, evidence suggesting a recent rise in incidence of RPA has been accumulating. Prompt surgical intervention has been the classically accepted treatment of this condition, but optimal management today is a matter of debate. Some authors have reported success managing patients with intravenous (IV) antibiotics alone, and recent case series continue to recommend surgical management for all patients. This study was undertaken to characterize the clinical features and outcomes of this patient group, and to investigate factors of history and presentation that may clarify whether surgical intervention is necessary. We hypothesized that features of a patient’s history, presentation, and work-up would predict the likelihood of finding pus at surgical drainage and therefore separate those requiring surgical drainage from those who might be managed medically.

Methods and Materials

Subjects: Patients treated for RPA at St Louis Children’s Hospital between January 1, 1995 and July 31, 2006.

Procedures: Initial evaluation with computed tomography (CT), followed by intravenous drainage if a fluid collection is seen, or external drainage if the collection is lateral to the great vessels. If no collection or a very small collection is seen, the child is treated with antibiotics alone.

Analysis: Surgical findings were negative (no fluid), or positive (mucky fluid or frank pus). Mucky fluid group was similar to frank pus group, so they have been grouped together in the final analyses. CT findings were positive if “abscess” was read, and negative if “no abscess”, “phlegmon”, or equivocal findings were noted. Statistical analysis was performed using the SAS system, Version 8.2 (SAS Institute, Cary, NC). The χ² test was used for binomial outcomes, and Student’s-t-test for continuous variables. A two-tailed alpha level of 0.05 defined statistical significance. Logistic regression was used for multivariate analysis.

Results

Demographics: 162 patients. Age 6 days to 17 years, mean 4.9 years. Female 37%, male 63%. Four patients with history of recent trauma to the neck or pharynx. Prior antibiotic treatment - 40%. Mean duration of symptoms - 3.4 days. Mean WBC 22,400; 91% with WBC >12,000.

CT: Abscess – 92%, phlegmon 17%, no abscess 20%. Sensitivity 72%, specificity 58%. Overall accuracy 68%.

Treatment: 126 surgery, 12 second surgeries, 1 third; 36 IV antibiotics, 17/36 required eventual surgery.

Approach: 150 transoral, 1 transcervical, 5 combined. 16 tonsillectomy and/or adenoidectomy.

Findings: No fluid - 21%; Mucky fluid – 24%; Frank pus - 55%.

Airway Management: 6 pts (4.2%) remained intubated, 1 for >24 hrs.

Cultures: Group A Strept – 54%, Other Strept 73%, Staph 22%. Mixed – 72%.

Predictors of increased length of Stay: age, OSA, comorbidities

Complications: one mild hypoglossal nerve paresis, one tracheotomy for failure to wean.

Conclusions

We have reported the largest modern series of pediatric retropharyngeal abscesses, with attention to epidemiology, clinical presentation, treatment strategies, and factors influencing the outcomes of surgical findings, days of fever, and length of hospital stay. Our data confirm previous literature suggesting a rising incidence of this condition. Factors predicting a tendency toward positive and negative drainage have been identified. We recommend surgical drainage within 24 hours of presentation for patients where imaging and other factors suggest a true abscess. However, these predictive factors, taken together with radiographic findings and the impression of systemic toxicity, may be challenging in defining a subgroup of patients who may be better served by initial treatment with IV antibiotics. A prospective trial based on these findings may help verify these conclusions.

Bibliography


