

Acute Paediatric Mastoiditis in the UK Before and During the COVID-19 Pandemic: A National Observational Study

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Abstract

Objectives To explore the impact of COVID-19 on the management and outcomes of acute paediatric mastoiditis across the UK. **Design** National retrospective and prospective audit **Setting** 48 UK secondary care ENT departments **Participants** Consecutive children aged 18 years or under, referred to ENT with a clinical diagnosis of mastoiditis. **Main outcome measures** Cases were divided into: Period 1 (01/11/19-15/03/20) before the UK population were instructed to reduce social contact, and Period 2 (16/03/20-30/04/21), following this. Periods 1&2 were compared for population variables, management and outcomes. Secondary analyses compared outcomes by primary treatment (medical/needle aspiration/surgical). **Results** 286 cases met criteria (median 4 per site, range 0-24). 9.4 cases were recorded per week in period 1 versus 2.0 in period 2, with no winter increase in cases in Dec 2020-Feb 2021. Patient age differed between period 1&2 (3.2 Vs 4.7 years respectively, $p<0.001$). 85% of children in period 2 were tested for COVID-19 with a single positive test. In period 2 cases associated with *P. aeruginosa* significantly increased. 48.6% of children were scanned in period 1 vs 41.1% in period 2. Surgical management was used more frequently in period 1 (43.0% Vs 24.3%, $p=0.001$). Treatment success was high, with failure of initial management in 6.3%, and 30-day re-admission for recurrence in 2.1%. The adverse event rate (15.7% overall) did not vary by treatment modality or between periods 1& 2. **Conclusion** The COVID-19 pandemic led to a significant change in the presentation and case-mix of acute paediatric mastoiditis in the UK.

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