ACUTE MASTOIDITIS IN CHILDREN
COMPLICATIONS AND MANAGEMENT

1. INTRODUCTION

Mastoiditis is the most common infratemporal complication of childhood otitis media (~730 admissions in England annually). Despite potentially lethal sequela management remains poorly defined, in part due to heterogeneous case series.

Core Outcome Sets (www.comet-initiative.org) are increasingly used to standardise minimum reporting data sets. This will permit improved comparison and combination of case series to better define optimal management.

2. AIMS

To characterise management and complications in our population
1) To compare outcomes to other UK and international series
2) To propose a Core Outcome Set for acute mastoiditis in children

3. METHODS

- Retrospective review of patient e-records 2010-2017
- Admissions to Newcastle Hospitals NHS Foundation Trust (tertiary referral centre for paediatric ENT with ITU) with a catchment area of approximately 1.1m patients
- Patient selection obtained from clinical coding data
- Information handling in keeping with Caldicott principles
- Analysis using Microsoft Excel™ 2016
- Comparison made to UK and international series (1, 2)
- Contacted ENT-UK regarding designing national guidelines
- *Inclusion criteria: Paediatric patients (<18 years old) with a clinical diagnosis of mastoiditis under any specialty

4. RESULTS

- 51 eligible cases were identified following screening
- Median age was 48 months (range 2 months- 18 years)
- Median length of stay was 4 days (range 0-27 days)
- 68.6% previously "well child" – no medical history
- 43.1% had no documented preceding illness – fig. 1
- 24 had complication (5 sigmoid sinus thrombosis; 2 CNVI palsy; 2 IVJ thrombus; 2 extradural abscess; others rare)
- Most patients (31/51) required surgical intervention – fig. 2 and imaging choices were varied (fig. 4, 5)
- Many (12/31) had no bacterial growth. Most common species S. Pyogenes (4/51) and P. Aeruginosa (4/51).
- Follow up in clinic: 31.4% by 2 weeks, 78.4% by 4 months

Antibiotic Freq.
Coamoxiclav alone 14
Coamoxiclav and Sofradex drops 5
Coamoxiclav and Gentamicin drops 2
Coamoxiclav, metronidazole and Ofloxacine drops 2
Other 19
Not documented 9

43% 41% 8% 2% 2%

Figure 1: Preceding illnesses
- Acute otitis media
- CI infection
- Otitis externa
- URTI
- Infected cholesteatoma
- None

39% 21% 18% 6%

Figure 2: Management decisions
- I & D
- Mastoidectomy
- Mastoidectomy and grommet
- Conservative
- Combined neurosurg. input
- Grommet alone

5. CONCLUSION

- Acute mastoiditis mostly afflicts young children
- Empirical antibiotic selection is inconsistent
- Modality and timing to imaging is varied
- Data similar to other UK series but differ to international series, particularly with regards to timing and complications
- We propose a Core Outcome Set may help future research

6. FUTURE RESEARCH

- We propose to work with ENT-UK to develop UK guidelines to optimise investigation and management of mastoiditis in children
- To work with the COMET initiative in developing a Core Outcome Set for mastoiditis to establish standardised minimum reporting datasets to enable combination of smaller studies from multiple centres
- Further international collaboration should continue to monitor trends in bacteriology and antimicrobial resistance in mastoiditis

References: