**Introduction**

- Managing complications of paediatric sinusitis requires a multi-disciplinary approach, in which itself poses its own challenges.
- 1 child in 1000 will develop malignancy with a radiation of 10 millisievert (mSv), which roughly equates to 2.5 CT brain and orbit.
- Hence, great consideration must be given in employing imaging modalities including CT and MRI for both diagnosis and monitoring disease progression.
- Clear protocols are therefore required to avoid confusion in the holistic management in children presenting with complications from sinusitis.

**Objective**

- We present our experience in the management of complications from paediatric sinusitis.
- We propose a new algorithm in light of changing microbiology and increased awareness of radiation dose risk.

**Methods**

- A retrospective audit was performed from January 2013 to July 2017.
- 4 groups of complications included: Orbital, Orbital and Intracranial (OI), Pott’s Puffy tumour (PPT) and Intracranial.
- Parameters recorded include patient age, sex, imaging modality, Chandler classifications, medical and surgical management, length of stay, microbiology results and outcomes.
- 57 patients were identified, including 23 girls and 34 boys with a mean age of 9.3 years.

**Results**

![Figure 1: Proposed Algorithm for the Management of Paediatric Patients Presenting with Orbital Swelling](Image)

- **Figure 1**: Chart illustrating the mean and median age for patients included.
- **Figure 2a (left)**: Chart illustrating different Chandler classification and their management.
- **Figure 2b (right)**: Chart illustrating different Chandler classification and their management.
- **Figure 3**: Chart illustrating microbiology trend of positive culture results (N = 30).

**Discussion**

- Indications for surgical treatment include persistent sepsis, worsening CRP levels, and in cases where risk to vision is high.
- Streptococcus Milleri was found to be the dominant microorganism, and invariably associated with abscess formation.
- All cases with Strep. Milleri were proven sensitive to penicillin-based therapy.
- 47 patients was investigated with CT scans on an average of 0.3 days, of which 7 patients required repeat CT imaging.

**Plan for the Future**

To perform a prospective re-audit in a 6-month period on adherence and management outcome.

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**CONCLUSION**

1. *Streptococcus Milleri* appears to be associated with more severe disease and abscess formation.

2. The choice and timing of imaging needs consideration in the light of potential radiation dose, and this is reflected in our proposed algorithm.