Necrotizing fasciitis in the pediatric head and neck: case report and review of the literature

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OBJECTIVE
To present an interesting case and review the literature regarding pediatric necrotizing fasciitis in the head and neck.

CASE REPORT
A 5-year old Burmese female presented to the Thammasat University Hospital Emergency Room with left parotid swelling after 3 days of management on oral antibiotics. The child had a fever, redness and induration along the entire left side of the face as presented in Figure 1.

Upon admission to the hospital, the child underwent an ultrasound to evaluate for fluid collection. None was noted and the child was admitted for intravenous antibiotics. The following day there were no signs of improvement and a computed tomography (CT) scan was done (Figure 2). Imaging revealed diffuse edema, but a small fluid collection was evident along the parotid. That evening incision and drainage was performed with minimal discharge obtained.

The patient worsened over the next twelve hours with persistent fever and worsening facial swelling. A repeat contrast enhanced CT scan was ordered (Figure 3). The child was immediately taken back to the operating room for repeat exploration and drainage. A modified Blair incision was made revealing significant necrotic material. All necrotic content was removed to reveal a bleeding surface throughout the left side of the face anterior to the level of nasolabial fold. Necrotic parotid tissue was excised completely. The zygoma and ramus of the mandible were exposed. The child underwent four subsequent debridements and an elective tracheostomy during her hospital stay. The child suffered from disseminated intravascular coagulation during the initial admission period. Broad spectrum antibiotics were administered. *Chromobacterium violaceum* was the offending bacterial agent from cultures obtained.

The child ultimately spent approximately four months as an inpatient. Prior to discharge the child successfully underwent decannulation and closure of her residual facial defect with a cervicofacial flap. One year postoperatively the child has done well. She has evidence of a House Brackman Grade II left facial paralysis and trismus secondary to left ankyloses of the temporomandibular joint. She is currently seeking evaluation with our Oral and Maxillofacial colleagues for proposed release of her joint. Otherwise the child has returned to her pre-event status.

MATERIALS AND METHODS
We discuss an interesting case of necrotizing fasciitis (NF) involving the parotid gland occurring in a four-year old Burmese female secondary to *Chromobacterium violaceum*. The patient suffered from quick deterioration leading to sepsis and disseminated intravascular coagulation. Following appropriate diagnosis, aggressive debridement, antibiotic treatment, and resuscitation led to successful treatment of the infection. We follow by then reviewing the literature regarding incidence, common pathogens, and appropriate treatment strategies for this rare entity. Literature analysis of case reports was performed. PUBMED was searched for the terms “pediatric necrotizing fasciitis”, and “necrotizing fasciitis in the head and neck.”

RESULTS
A review of NF in the pediatric population found only 25% presented in the head and neck. A total number of 15 cases of pediatric necrotizing fasciitis in the head and neck region have been reported in the English literature. We reviewed a total of 13 manuscripts, of which 12 were case reports. Nearly half (41%) of cases reported Group A beta-hemolytic Streptococcus (GAS) as the causative organism. The mortality rate from pediatric NF of the head and neck region is quoted as 17%. The average age of patients with NF in the head and neck region was 4.5 years.

CONCLUSION
Pediatric necrotizing fasciitis remains a rare and deadly infection in the head and neck. Effective management of the disease involves early and aggressive surgical debridement along with broad spectrum antibiotics and nutritional support.

References