

## Pediatric Head and Neck Infections at a Tertiary Care Center

Recent reports have advocated the success of conservative treatment over surgery in pediatric head and neck infections [1-4]. A retrospective review of all children less than 18 years admitted with head and neck infections was conducted in our tertiary care center from 2015-2020. Demographic data, sites of infection, microbiological results, and treatment outcomes were recorded. Postoperative infections were excluded from the study. All patients underwent a thorough clinical assessment for 'severe symptoms', which included stridor, inability to swallow, visual and intracranial symptoms, and empirical antibiotics was started. In those without severe symptoms, antibiotics were continued for 48 hours and child reassessed. Computed tomography (CT) was done to assess the extent of involvement. Well-formed abscesses in patients with 'severe symptoms' or failed medical therapy were surgically drained. Intraoperative samples were sent for culture, and antibiotics were changed depending on the sensitivity. Tissue was sent for *Mycobacterium tuberculosis* culture, whenever indicated.

Out of 38 patients admitted, deep neck space infection (21, 55.2%) were most commonly seen, followed by facial (13, 34.2%) and orbital (4, 10.5%), which is similar to previous reports [3,4]. History of recurrent upper respiratory tract infection was seen in majority of cases. Six of the facial abscesses were secondary to pre-auricular sinus and otitis externa, four had septal abscess and three had facial cellulitis. All orbital infections were secondary to sinusitis. One child was anemic, none were immunocompromised.

More than half the children ( $n=21$ ) had 'severe' symptoms and majority (68%) required surgical drainage. Only size of the abscess ( $>25$  mm vs  $<25$  mm) was significantly ( $P<0.001$ ) associated with requirement of surgical drainage (Table I). The other factors such as age, gender, duration of symptoms or site of abscess were not found to be statistically significant. The predominant organism isolated was *Staphylococcus aureus*, followed by *Streptococcus* spp. [5] and gram-negative bacilli [4]. In 11 patients, *M. tuberculosis* culture was done, but it was not positive.

One child needed a repeat drainage and one child had persistent laryngeal edema necessitating an elective tracheostomy, adding to their morbidity. CT was found to be a useful modality (with a positive predictive value of 86.6%) in evaluating abscesses, as also reported previously [5].

To conclude, deep neck space infections formed the bulk of pediatric head and neck infections and accounted for high morbidity. Majority of our cases required surgical drainage,

**Table I Factors Associated With Surgical Intervention in Children With Head and Neck Infection**

Factors	Medical management (n=12)	Surgical management (n=26)
Age (y) <sup>a</sup>	5.2 (3.28)	5.1 (4.49)
Female gender	7	11
Duration of symptoms (d) <sup>a</sup>	4.2 (2.3)	5.4 (3.1)
Duration of hospital stay (d) <sup>a,b,c</sup>	5.5 (2.9)	6.1 (5.3)
<i>Site of abscess</i>		
Deep neck infection	8	13
Facial infection	3	10
Orbital infection	1	3
<i>Size of abscess</i>		
<25 mm	12	11
>25 mm <sup>c</sup>	0	15

Data presented as no. (%) or <sup>a</sup>mean (SD). <sup>b</sup>Child who underwent tracheostomy was an outlier with a hospital stay of 29 days. <sup>c</sup> $P<0.001$ .

probably as most of our children presented with severe symptom, which is against the recent trend towards conservative management [1-4]. Size of the abscess was the sole significant predictor for surgical drainage; although, it did not increase the duration of hospital stay.

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