

Orbital cellulitis in children: a review of 17 cases in the UK

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Introduction

Orbital cellulitis is an infection of the soft tissue around the eye ball, posterior to the orbital septum [4]. It has several

complications. *Haemophilus influenzae* type B (Hib) was considered to be one of the important microorganisms causing it in children before the introduction of Hib vaccine [5]. This study was undertaken to ascertain the change in pattern of the microbiological causative organism and its outcome in children in the era of Hib vaccination and its treatment with modern broad-spectrum antibiotics.

Methods

This is a retrospective study of all children admitted with orbital cellulitis at the University Hospitals of Coventry and Warwickshire between 1996 and 2004.

Results

During this period, 17 patients with the diagnosis of orbital cellulitis were admitted. Of them, 11 were male and six were female (male:female ratio=1.8). The ages of the patients ranged from 10 months to 13 years. All 17 had received the Hib Immunisation. Seven patients were documented to have had an associated upper respiratory infection. Ophthalmoplegia was documented in 11 (65%), proptosis in four (24%), altered vision in four (24%) and chemosis in three (18%) patients. The culture results are summarised in Table 1. A CT scan was done in five patients and MRI in one. Two of the patients had a periosteal abscess, which was drained surgically. Two patients had undergone antral washout for associated sinusitis. All patients had been started on systemic antibiotics. On further follow-up all patients had been cured of the diseases without any sequelae.

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Table 1 Result of microbiological studies of the 17 patients (*Hi Haemophilus influenzae*)

Source	Done	Positive culture	Organism				
			Hi	<i>Staphylococcus aureus</i>	Pneumococci	Group F Streptococci	Group A Streptococci
Blood	13	0	0	0	0	0	0
Eye swab	13	4	1	1	0	0	2
Nose swab	13	3	1	0	1	1	0

Discussion

Ambati et al. [1] concluded in their study that Hib vaccination coincided with a reduction in the incidence of orbital cellulitis due to Hib. We could not find any study in the UK which specifically analysed the exact incidence and outcome of orbital cellulitis in both the pre-Hib and the post-Hib vaccine eras, and we believe that ours is the first study of this kind in the UK.

Of the 13 patients who had culture results available to be analysed, only one patient showed Haemophilus (H) influenza in both eye and nose swabs, but the typing of this organism was not done. All the 13 blood cultures showed no growth.

Orbital cellulitis is considered to be a potentially dangerous condition in children. Mortality has been reported in patients with orbital cellulitis [3]. Complications include blindness and cavernous sinus thrombosis, and intracranial infections have been reported [3, 6]. There are studies that also reported 100% cure rates without any sequelae [2]. In our study all patients were successfully treated with broad-spectrum systemic antibiotics.

Conclusion

With the present era of antibiotics, orbital cellulitis can be treated completely, without any sequelae. After the intro-

duction of the Hib vaccine, H influenza is no longer a significant cause of in-orbital cellulites in children. We recommend conducting a prospective study to find out the exact cause of the microorganism, which will help us to plan empirical antibiotics for the management of orbital cellulitis in children in the future.

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