

Haemophilus influenzae periorbital cellulitis in a 95-year-old patient

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Periorbital cellulitis (POC) is an acute bacterial infection of the eyelids. In the past, before the introduction of *Haemophilus influenzae* type B vaccination, POC was usually caused by this bacterium. Vaccination was introduced in 1985 and extended in 1990. Since then, most cases are caused by *Staphylococcus aureus* or Group A β -hemolytic *Streptococcus*. We present a case of POC caused by *H. influenzae* in a 95-year-old woman: to our knowledge, this is the oldest patient with POC reported in the literature.

Key words: elderly, *Haemophilus influenzae*, periorbital cellulitis, *Staphylococcus aureus*, vaccination

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Conflict of interest

The Authors declare no conflict of interest

Consent for publication

We certify that consent for publication of photographs was obtained

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INTRODUCTION

Periorbital cellulitis (POC), or preseptal cellulitis, is an acute bacterial infection of the eyelids¹⁻¹⁵. In the past, before the introduction of *Haemophilus influenzae* type B vaccination, POC was usually caused by this bacterium. In the United States, vaccination was introduced in 1985 and extended in 1990. Since then, most cases are caused by *Staphylococcus aureus* or Group A β -hemolytic *Streptococcus*. We present a case of POC caused by *H. influenzae* in a 95-year-old woman: to our knowledge, this is the oldest patient with POC reported in the literature.

CASE REPORT

A 95-year-old Caucasian woman was admitted with a clinical diagnosis of herpes zoster. Her son stated that the dermatitis appeared suddenly three days before. It was diagnosed by the patient's general practitioner as herpes zoster. A therapy with valacyclovir (3 g/day) was started. Dermatological examination showed a severe erythematous edema, with tiny round vesicles and pustules, at the left eyelids (Fig. 1). The consistency of the lesion was soft-parenchymatous. The patient complained of burning sensation, pain, and lachrymation.

General physical examination showed mild arterial essential hypertension. Left laterocervical lymphadenopathy was observed. Fever was 38.6°C. Ophthalmological examination was impossible because the patient could not open her left eye at all.

Laboratory tests showed leucocytosis with neutrophilia, and increase in erythrocyte sedimentation rate and C-reactive protein. Blood culture was negative. Cytological examination of vesicles and pustules revealed the presence



Figure 1. Severe erythematous edema, with small vesicles and pustules, at the left eyelids.

of cocci and excluded a herpetic infection. Swab obtained from pustular lesions was positive for *Staphylococcus epidermidis*. Culture of needle aspirate of the swelling was positive for *H. influenzae*. Nasal swab was positive for *S. aureus*. It was impossible to perform conjunctival swab. X-rays and computerized axial tomography of the head were negative. A diagnosis of POC was made. According to the antibiogram results, the patient was treated with ceftriaxone (2 g i.v. for 10 days): both *H. influenzae* and *S. aureus* were sensitive to this antibiotic. The clinical picture improved within three days. Complete remission was observed seven days later. Follow up (six months) was negative.

DISCUSSION

POC occurs almost exclusively in children ^{1-7,9,12-15} and is more frequent in males than in females ^{13,14}. Cases in adults are extremely rare ^{8,10,11}. Important predisposing factors of POC are local trauma ^{3,4,12,13}. In two groups of patients, local trauma were responsible for penetration of bacteria in 20.9% ¹² and 23.1% ¹³ of cases, respectively). Other risk factors are impetigo or adjacent focus of infection, otitis, conjunctivitis (in 42.9% of patients in the previously cited study ¹²), dacryostenosis ¹²,

sinusitis ^{2,3,5,7,9,12,13} (observed from 8% ¹² to 14.5% ⁹ to 19% ⁵ to 24.8% ¹³ to 81% ⁷ of patients), and upper respiratory tract infection ^{4,9,11}. It is possible that in our patient the sudden appearance of the swelling was caused by an arthropod bite or sting: in the study by Rimon et al. ¹², insect bites and stings were responsible for 9.8% of cases of POC. However, in our patient it was impossible to discover the source of *H. influenzae*. In the past, the most frequently involved species in POC was *H. influenzae* ^{1-7,9,11,12}. In United States, after the introduction in 1985 of vaccination for *H. influenzae* type B, the incidence of POC caused by this bacterium rapidly and deeply decreased ^{5,7,9,12,13,15}. Other bacteria involved are *S. aureus* ^{2,3,15}, Group A β -hemolytic *Streptococcus* ^{2,3,15}, and *Streptococcus pneumoniae* ^{2,3}. *S. aureus* and/or Group A β -hemolytic *Streptococcus* have been isolated also from conjunctival exudate as well as *H. influenzae* (in 13 out of 89 tear specimens in the study by Powell et al. ⁴). Blood culture of *H. influenzae* is often negative ⁵⁻⁷. After the introduction of vaccination, *H. influenzae* positive blood cultures became ever more rare: 1 positive out of 34 patients ⁶ and 2 positive out of 133 cultures ⁷.

POC is characterized by the rapid appearance of usually monolateral erythematous edema, with smooth surface. The consistency is parenchymatous-hard. Sometimes, vesicles, blisters and pustules, as in our

patient, appear. Local pain, fever, and general malaise are common. A dreadful complication is meningitis^{1,5}. Recurrences are possible. Laboratory tests show leucocytosis with neutrophilia and increase erythrocyte sedimentation rate, C-reactive protein and α 1-acid glycoprotein. Differential diagnosis includes orbital cellulitis, a severe infection involving the contents of the orbit, and herpes zoster. Therapy is based on systemic antibiotics, selected according the results of antibiogram, and incision and drainage¹⁰.

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