Aetiology and clinical features of facial cellulitis: A prospective study

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Introduction

In the early 20th century, the face was the predominant site of cellulitis. Despite a relative decrease of facial cellulitis, it is still common. There is dearth of data on this condition during the last decades. The aim of this study is to describe contemporary aetiological and clinical characteristics of patients hospitalised with **non-suppurative** facial cellulitis.

Methods

Patients were included prospectively. Clinical details, comorbidities, and biochemistry results were recorded. Cultures of blood, skin swabs and measurements of anti-streptolysin O (ASO) and anti-deoxyribonuclease B (ADB) in acute and convalescent serum were performed. Infections due to abscesses, impetigo or animal/human bites were excluded.

Cases were categorised as having confirmed or probable β-haemolytic streptococcal (BHS) aetiology using: (1) Seropositivity, (2) recovery of BHS from blood culture or swabs at affected site or (3) penicillin monotherapy with improvement at end of therapy.

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Results

Sixty-five patients were included. Definite or probable BHS aetiology was identified in 75% (49/65) of cases. **Table 1** shows demographics and underlying conditions.
Table 2 highlights the affected site, along with clinical findings, biochemistry, treatment and outcome.

Table 1. Demographics and underlying conditions

Characteristics	All cases
	n = 65 (%)
Demographics	
Age, median (range)	57 (19,7-91,9)
Male gender	35 (54)
Underlying condition	
Significant comorbidity	35 (54)
Skin barrier impairment	
Local chronic skin disease	14 (22)
External otitis or eczema of the ear canal	22 (34)
No identified skin barrier impairment	13 (20)
Previous local infection, surgery, radiation	13 (20)

Figure 1. *Millian's ear sign and spread to right cheak.*

Figure 2. *Facial cellulitis involving nose and spread to left side.*

Table 2. Localisation, findings, treatment and outcome

Characteristics	All cases
	n = 65 (%)
Antibiotics prior to admission	10 (15)
Location	
Involvement of the outer ear	27 (43)
Involvement of or around the nose	34 (52)
Signs at admission	
Erythema sharply demarcated	58 (89)
Palpable edge of erythema	54/64 (84)
Erythema sharply demarcated and palpable edge	54/64 (84)
No typical erysipelas signs*	7 (11)
Folliculitis/furuncle	6 (9)
History of, or fever at admission	59 (91)
Biochemistry at admission	
Leucocytes, median (range)	10,0 (3,8-20,5)
CRP, median (Range)	61 (2-296)
Treatment and outcome	
Penicillin monotherapy	33 (51)
Penicillin and/or cloxacillin only	44 (68)
Clindamycin at any time during treatment	21 (32)
Duration of hospitalization, median (range)	3,0 (1-8)
Total duration of antibiotic treatment, median (range)	10,0 (6-21)
Clinical failure post treatment	4/64 (6)

** None of the following: Sharply demarcated erythema, palpable edge, or raised boarder*

A history of previous facial erysipelas or cellulitis was recorded in 17% (11/65) and significantly more often in patients with local chronic skin disease or eczema of the ear canal (P=0.04). In 54% (35/65) of cases, infection originated in the middle third of the face. Most patients received penicillin and/or cloxacillin only. Of the 18 cases receiving clindamycin as part of combination therapy, 11 cases only received it for 1-3 days. Clinical failure was significantly more often seen in the non-BHS group (P=0.037).
Few complications were noted; 14.5% (9/62) experienced transient diarrhoea, this was significantly more often seen among cases that received clindamycin during the treatment course (P=0.019). One case tested positive for *Clostridium difficile* toxin. There were no cases with cerebral venous sinus thrombosis and no case fatalities.

Conclusions

- Still BHS are the leading causes of facial cellulitis.
- Most patients had systemic symptoms and local findings normally defined as typical signs of erysipelas.
- Narrow-spectrum β-lactam antibiotics appear sufficient as the initial therapy of choice.
- Short hospital stay, low recurrence rates and few complications were seen.

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