

RESEARCH ARTICLE

Clinical features, microbiological epidemiology and recommendations for management of cellulitis in extremity lymphedema

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Abstract

Background: This high volume, single center study investigated the prevalence, bacterial epidemiology, and responsiveness to antibiotic therapy of cellulitis in extremity lymphedema.

Methods: From 2003 to 2018, cellulitis events from a cohort of 420 patients with extremity lymphedema were reviewed. Demographics, lymphedema grading, symptoms, inflammatory markers, cultures and antibiotic therapy regimens were compiled from cellulitis episodes data. Univariate and multivariate analyses were performed for detailed analysis.

Results: A total of 131 separate episodes of cellulitis were recorded from 43 (81.1%) lower limb and 10 (19.9%) upper limb lymphedema patients. The prevalence and recurrence rates for cellulitis in lymphedema patients were 12.6% (53 of 420) and 56.6% (30 of 53), respectively. The most common findings were increased limb circumference (127 of 131; 96.9%) and abnormal C-reactive protein (CRP) level (86 of 113; 76.1%). Blood cultures were obtained in 79 (60.3%) incidents, with 9 (11.4%) returning positive. *Streptococcus agalactiae* was the most isolated bacterium (5 of 9; 55.5%).

Conclusions: The cellulitis prevalence and recurrence rate in extremity lymphedema were 12.6%, and 56.6%, respectively. Strongest indicators of cellulitis were increased affected limb circumference and elevated CRP level. Empiric antibiotic therapy began with coverage for *Streptococcus* species before broadening to anti-Methicillin-resistant *Staphylococcus aureus* and anti-Gram negatives if needed for effective treatment of extremity lymphedema cellulitis.

KEYWORDS

cellulitis, lymphedema, lymphatic diseases, streptococcal infections

1 | INTRODUCTION

Cellulitis is one of the most devastating complications for patients with extremity lymphedema. Its occurrence imposes severe restriction on activities of daily living, typically mandating extended antibiotic treatment, with little respite, as there is a high recurrence

rate.¹ This combination causes considerable impairment in lymphedema patients' quality of life.

Cellulitis is an acute inflammation of the skin and subcutaneous tissue. The lower leg is the most commonly affected site, accounting for 70% to 90% of all cases.^{1,2} Cellulitis symptoms can vary depending on severity, but a classic presentation consists of painful