

Group B streptococcal meningitis in an adult: A possible complication of olecranon bursitis

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Background: We report a man with septic olecranon bursitis who had an early development of meningitis. **Case Summary:** A 74-year-old man presented to the emergency room with malaise, headache, mental confusion, a fever unsuccessfully treated with oral NSAIDs and ice, and with a 10-day history of pain and swelling in his right elbow. Clinical and laboratory evaluation excluded other causes and microbiological evaluation documented a *S. agalactiae* infection. Antibiotic treatment induced a rapid improvement, without the development of side effects. **Conclusion:** This is the first report on olecranon bursitis and concomitant meningitis related to *S. agalactiae* infection.

Key words: Adult, group b streptococcus, meningitis, septic bursitis, *Streptococcus agalactiae*

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INTRODUCTION

Septic bursitis is a common cause of musculoskeletal pain and often prompts orthopedic consultation.^[1] The most common offending organism is *Staphylococcus aureus*^[2] and only 5% of cases of septic bursitis are caused by *Streptococcus agalactiae* or Group B Streptococcus (GBS).^[3] In adults, GBS behaves as an opportunistic pathogen against a background of such diseases as diabetes mellitus, chronic renal failure, or tumors, or following long-term corticosteroid administration.^[4] Here, we describe the case of an adult with olecranon bursitis and concomitant meningitis caused by *S. agalactiae*.

CASE REPORT

A 74-year-old man, with a history of type 2 diabetes and depression, presented to the emergency room with malaise, headache, mental confusion, and a fever (38.5°C) that was unresponsive to NSAIDs. He complained of a 10-day history of pain and swelling in his right elbow, unsuccessfully treated with oral NSAIDs and ice. Examination of the right elbow revealed the presence of spontaneous pain, soft-tissue swelling, and tenderness of the olecranon prominence. Range of motion at the elbow was unpainful, 0 to >120°. The skin appeared locally warm

and hyperemic. Neurological examination showed mental confusion and somnolence. His speech was slow and he was not oriented to place and time. There were no focal neurologic signs. Radiographs of the right elbow showed soft-tissue swelling without any foreign body or free air. Blood chemical evaluation documented an increase in C reactive protein plasma levels (46.65 mg/dL; normal range: <0.5 mg/dL). His leukocyte count was 13.38 10³/UL, with 85% neutrophils; the hemoglobin and hematocrit levels were 14.7 g/dL and 42%, respectively. Cerebrospinal fluid (CSF) examination revealed a xanthochromic color with a limpid aspect and with high levels of white cells (960/mm³) and proteins (747 mg/dL; normal values: 10-45 mg/dL) and low levels of glucose (1 md/dL; normal values: 40-76 md/dL). Both Gram-stained and methylene blue smears of the CSF were negative, while CSF antigen evaluation (Directigen Meningitis Combo test, BD Inc., NJ, USA) revealed the presence of *S. agalactiae*. CSF microbiological examination on triple sugar iron broth, agar-blood, agar-chocolate and McConkey, mannitol salt agar, and Sabouraud agar plates showed smooth translucent colonies with a zone of beta-hemolysis. A latex agglutination test (Prolex Streptococcal Grouping Latex kit, ProLabInc, Ontario, Canada) and identification (Vitek 2, bioMérieux Inc., MO, USA) confirmed the presence of *S. agalactiae*. The aspiration of the olecranon

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bursa revealed a murky, yellow fluid with a leukocyte count of 18,000/mm³ (85 neutrophils, 15 lymphocytes, and 0 monocytes). Microbiological examination of the fluid showed smooth white bacterial colonies. The *S. agalactiae* was confirmed through PCR analysis of the DNA extraction obtained from the CSF and bursal fluid (EXTRAcell kit, Nanogen Advanced Diagnostics, Turin, Italy). DNA amplification was performed using Seeplex Meningitis ACE Detection (Seegene Inc., Korea). Nucleic acid amplification tests (PCR assay) of both the CSF and bursal fluid documented the presence of bacterial DNA from the same strain of *S. agalactiae*. An antibiotic susceptibility test, performed with Vitek 2 and an agar disk diffusion method according to the Clinical and Laboratory Standard Institute (CLSI), revealed a high susceptibility to penicillin, ampicillin, vancomycin, cephalosporins, macrolides, quinolones, but resistance to tetracyclines.

The patient was treated with 1 g of intravenous ceftriaxone every 12 hours and ampicillin 1 g intravenous every 8 hours for 2 weeks. After antibiotic therapy, the patient showed steady clinical improvement and normal laboratory indices were found. No side effects to the pharmacological treatment were noted. At 1 year after discharge, the patient has had no further episodes of bursitis or infection.

CONCLUSION

This case suggests the advisability of early aspiration of bursal fluid for Gram's stain and culture in cases of bursitis in patients with medical conditions predisposing to infection. Septic bursitis represents a common clinical condition that, if correctly diagnosed, is successfully managed with non-surgical treatment and it uncommonly causes serious, potentially life-threatening complications.^[1] This case report also suggests physician that patients can have other systemic complications or infections ongoing at the time of the septic bursitis.

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