

PROXIMAL FEMORAL OSTEOMYELITIS CAUSED BY PVL POSITIVE CA-MRSA

IS CONFIRMATION REQUIRED TO START TREATMENT?

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INTRODUCTION

The epidemiology of acute pediatric osteomyelitis due to community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) producing Pantón–Valentine leukocidin (PVL) is not well characterized in our country. In our province, acute osteoarticular infections caused by CA-MRSA account for 6.3% of cases. However, the association between CA-MRSA and PVL positivity remains unclear. This is largely because PVL testing is available only through the National Institute of Public Health and a limited number of academic centers, which restricts routine detection. Despite these constraints, early clinical suspicion of PVL production is critical, given its reported association with severe disease and poor prognosis. Clinical features such as multifocal involvement, large or multiple subperiosteal abscesses, associated myositis/pyomyositis, primary thromboembolic events, and severe systemic complications have been linked to unfavorable outcomes, with reported mortality reaching up to 75.8%.

AIM

To describe the clinical course and management of an acute osteoarticular infection of the hip in a school-aged girl caused by suspected PVL-positive CA-MRSA.

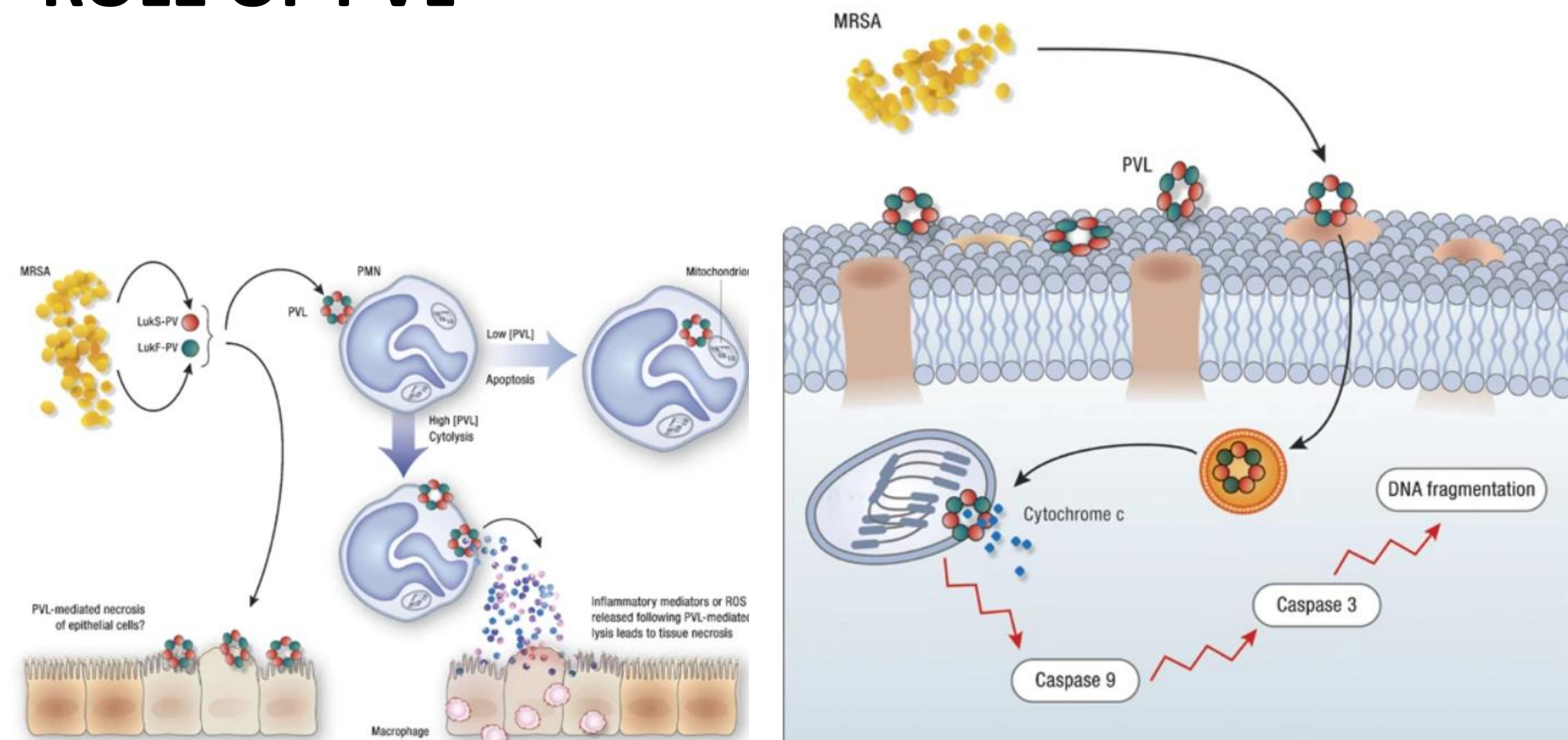
MATERIAL

Case report developed in accordance with CARE guidelines.

CASE REPORT

- **Presentation:** A previously healthy 6-year-old girl presented with left hip pain and limping, accompanied by respiratory symptoms and markedly elevated inflammatory markers.
- **Initial Therapy:** She was admitted and initially treated with cloxacillin.
- **Surgical Findings:** Surgical exploration revealed a large subperiosteal abscess.
- **Complications:** During hospitalization, the patient developed a left common femoral deep vein thrombosis, along with acute renal failure.
- **Microbiology:** Microbiological cultures were positive for CA-MRSA, leading to an escalation of treatment with enoxaparin, vancomycin, and linezolid, given the high suspicion of PVL production.
- **PICU Admission:** She required admission to the pediatric intensive care unit for six days and underwent a second surgical debridement eight days after admission.
- **Staging:** Evaluation for hematogenous dissemination, including echocardiography, fundoscopic examination, and bone scintigraphy, showed no abnormalities.
- **Course:** The clinical course was favorable, allowing a transition to oral linezolid after 23 days, completing a total of six weeks of antimicrobial therapy.
- **Follow-up:** The patient remains asymptomatic and has returned to normal daily activities. PVL positivity was confirmed 14 days after culture sampling.

ROLE OF PVL



Susan Boyle-Vavra and Robert S. Daum Laboratory Investigation (2007) 87, 3–9 &

CLINICAL COURSE AT A GLANCE

Clinical Presentation	Surgery	Complications Developed	Treatment	Outcome
Hip pain, limping, respiratory symptoms.	Large subperiosteal abscess drained	Femoral deep vein thrombosis and acute renal failure	Enoxaparin, Vancomycin and Linezolid.	Full recovery and return to usual activities.

DISCUSSION

Suspicion of PVL positivity in CA-MRSA infections is essential, as the early initiation of appropriate treatment directly influences the clinical course and, ultimately, patient survival.

In this case, suspicion of PVL production was raised by the presence of a large subperiosteal abscess, deep vein thrombosis—one of the distinctive features described in pediatric patients—and early signs of sepsis.

These findings supported the timely use of combined bactericidal antibiotic therapy with antitoxin activity, resulting in a satisfactory clinical outcome.

CONCLUSION

Early recognition, prompt initiation of appropriate therapy, and multidisciplinary management were essential to achieving a successful outcome.

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