# A case report of PVL staphylococcus aureus causing necrotising fasciitis post caesarean section - Beware the atypical septic markers

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**Introduction** Panton-Valentine Leukocidin Staphylococcus Aureus (PVL-SA) is a rare cause of maternal sepsis that presents atypically and aggressively, in this case with necrotising fasciitis and consequent acute respiratory distress syndrome (ARDS).

**Case Report** A 30-year-old para three woman underwent uneventful caesarean section for failed induction of labour. She smoked, had no comorbidities and a normal BMI. Seven days later she presented with wound inflammation. Sepsis pathway was commenced with IV cefuroxime and metronidazole. Four hours later she appeared very unwell with tachycardia, tachypnoea, pyrexia, spreading painful erythema but normal lactate (see Table 1). Tazocin and gentamicin were given, and she underwent emergency debridement for extensive subcutaneous pus. After initial improvement, 24 hours later she developed an oxygen requirement, further tracking erythema and skin necrosis and underwent repeat emergency wound debridement. She required invasive ventilation and inotropic support on critical care for ARDS (Figure 1). Cultures grew a sensitive staphylococcus aureus. Genotyping was requested in view of her aggressive disease and detected PVL-SA. Clindamycin was added and her condition improved. She was discharged with a large wound (Figure 2) and negative pressure dressing.

Table 1: Blood Results

| Time from admission (hours) | 0 | 4 | 8 | 24 | 48 |
|---|---|---|---|---|---|
| **Events** | Admission | Deterioration | First Debridement | Second Debridement | Critical Care |
| **Lactate** (mmol/L) | 1 | 1.3 | 0.9 | 1.8 | 0.9 |
| **White Cell Count** (x$10^9$/L) | 13 | 12.7 | 13.1 | 14.3 | 20.4 |
| **Lymphocytes** (x$10^9$/L) | 0.6 | 0.6 | 0.5 | 0.5 | 0.4 |
| **C-Reactive Protein** (mg/L) | 446 | 527 | 429 | 449 | 427 |
| **Creatinine** (umol/L) | 70 | 60 | 64 | 51 | 55 |
| **Albumin** (g/L) | 21 | 21 | 15 | 14 | 14 |

*Red Values = abnormal results*

**Figure 1:CXR post second debridement**

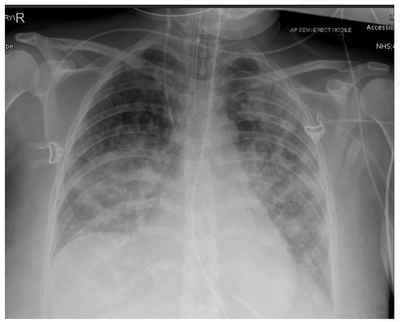


**Figure 2: Wound post debridement**



**Discussion** PVL-SA is a virulent toxin producing bacteria that can cause invasive infections and has been associated with maternal death [1]. In this case initial blood tests showed a reassuring white cell count, lymphopenia and significantly raised CRP. This pattern is described in association with severe PVL-SA infection [2]. Lactate is frequently relied upon as an indicator of severe sepsis yet was not elevated here. PVL-SA is a rare cause of life-threatening maternal sepsis which may be missed if reliance is placed on conventional laboratory markers of severe sepsis. Clinical vigilance, timely escalation and rapid source control guided by the clinical condition is required.

## Conclusion

- *PVL-SA can cause invasive infections and life-threatening sepsis*
- *Blood markers of sepsis can be falsely reassuring*
- *Clinical vigilance with rapid source control key for good outcomes*

References
1. Centre for Maternal and Child Enquiries (CMACE). Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006-08. The eighth report on Confidential Enquiries into Maternal Deaths in the United Kingdom. British Journal of Obstetrics and Gynaecology 2011;118 suppl 1:1-203.
2. Morgan MS. Diagnosis and treatment of Panton-Valentine leukocidin (PVL)-associated staphylococcal pneumonia. International Journal of Antimicrobial Agents. 2007 Oct;30(4):289-96.

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