

## Case Report

# A rare case of bacteremia due to *Acinetobacter junii* in an immunocompetent adult

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## ABSTRACT

The genus *Acinetobacter* comprises a complex and heterogeneous group of bacteria, many of which are capable of causing a range of opportunistic, often nosocomial, infections in humans. *Acinetobacter junii* is a rare human pathogen associated with bacteraemia in neonates and paediatric oncology patients. We report a unique case of bacteremia caused by *Acinetobacter junii*, in a patient with no risk factors identified.

**Keywords:** *Acinetobacter junii*, Bacteremia, Immunocompetent

## INTRODUCTION

The genus *Acinetobacter* comprises a complex and heterogeneous group of bacteria, many of which are capable of causing a range of opportunistic infections in humans. Community acquired infections due to *Acinetobacter* are rare. The main pathogenic species is *Acinetobacter baumannii* complex, which constitutes a common cause of nosocomial infections, particularly in patients with underlying diseases and risk factors (e.g. prior broad-spectrum antibiotic therapy, malignancy, central venous catheter, mechanical ventilation).<sup>1,2</sup>

*Acinetobacter* species other than *A. baumannii* have rarely been reported to be associated with bloodstream infections. In this report we present a case of bacteremia caused by *Acinetobacter junii* in an immunocompetent adult.

## CASE REPORT

A 45 year old male, normotensive, non-diabetic, chronic smoker was admitted in ward 6 of medical unit IV with complaints of fever and dry cough of ten days duration. The patient had been on phenytoin since 2 years for a seizure disorder due to AV malformation in the frontal

lobe. At admission he was conscious, well oriented with a pulse rate of 88/min and BP 110/70 mmHg.

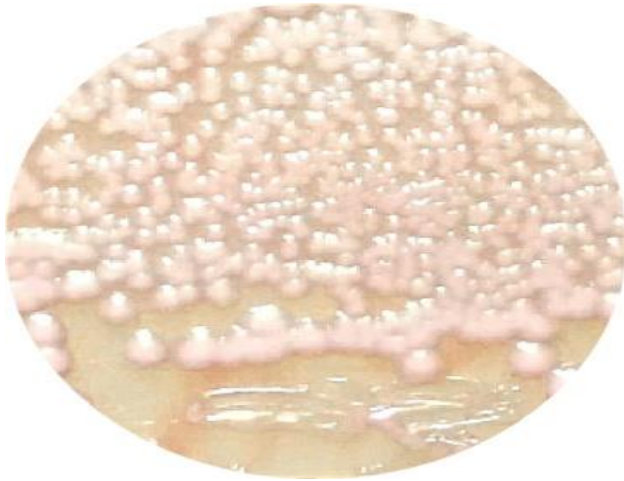
### Lab investigations

His haemogram was as follows; Hb -11.7gm; WBC count 6500/ $\mu$ l; (neutrophils 65.6%, lymphocytes 16.4%); platelets 2 lacs. The liver and renal parameters were normal. He tested negative for Monteaux, Widal and Malarial parasite. X ray Chest showed right sub pleural fibrosis with right pleural thickening, Bronchoscopy showed no abnormalities and his sputum and BAL examination were negative for AFB.

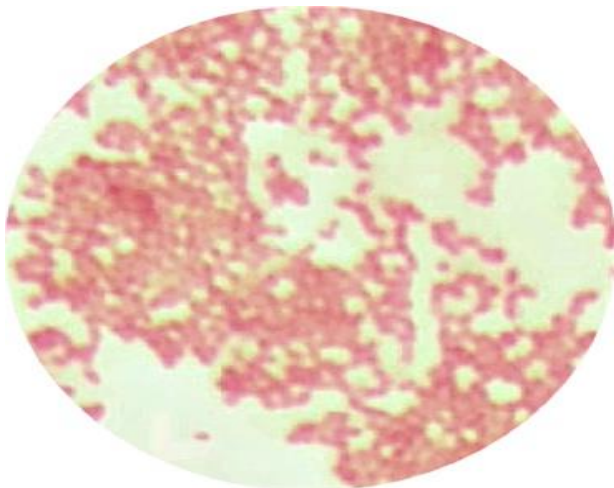
### Microbiological investigation

Three sets of blood cultures were drawn at 0, 24 and 48 hours from different venipuncture sites. After 24 hours of incubation, colonies were found on sheep blood agar and MacConkeys agar (Figure 1) which was 1.5-2 mm in diameter and non-lactose fermenting. On staining these isolates appeared as gram- negative cocco bacillary forms (Figure 2). Further identification and antibiotic sensitivity was done on VITEK 2 compact 60 Biomerieux, India Pvt., Ltd. The isolate was identified as *A. junii* and it was sensitive to cefatizidime, cefaperazone and sulbactam,

cefepime, aztreonam, doripenem, imipenem, meropenem, amikacin, gentamycin, ciprofloxacin, minocycline, tigicycline, trimethoprim & sulphamethoxazole but resistant to colistin. The patient was put on medication and there was complete resolution of his signs and symptoms. Repeat blood cultures were negative and the patient was discharged.



**Figure 1: Non-lactose fermenting colonies of *A. junii*.**



**Figure 2: Gram negative coccobacillary forms on gram staining.**

## DISCUSSION

*Acinetobacter* species are aerobic gram negative coccobacilli that have emerged as important opportunistic pathogens, especially among debilitated patients. Clinical forms of *Acinetobacter* infections include mainly the respiratory tract, bloodstream infections, peritoneum, urinary tract infection, surgical wounds, meningitis, skin and soft tissue infections. Infections caused by species of *Acinetobacter* other than *A. baumannii* have been rarely reported in literature. *A. junii* (genomic species 5) is a rare human pathogen, being particularly associated with outbreaks of septicaemia in neonates and paediatric oncology patients.<sup>3-5</sup> Rare cases of meningitis, peritonitis,

ocular infection and septicaemia in an adult oncology patient caused by *A. junii* have also been described.<sup>4,6-8</sup>

Relatively few infections caused by *Acinetobacter* spp. are community acquired, reported primarily from countries with tropical or subtropical climate, and mainly affected patients with some form of comorbidity or associated with heavy smoking and excess alcohol consumption.<sup>6,7</sup>

*A. junii* rarely causes infections in humans.<sup>9</sup> In larger analyses from Europe, strains of *A. junii* constitute 3.6–4.8% of all *Acinetobacter* isolates-12/331 and 9/186, respectively.<sup>10,11</sup> It mainly affects patients who have had prior antimicrobial therapy, invasive procedures, or malignancy.<sup>9</sup> Although *A. junii* is capable of causing serious infections, they are generally non-fatal because the micro-organism is commonly susceptible to antimicrobial agents.<sup>3</sup> The present case represents the first documented case of bacteremia by *A. junii* in an adult immunocompetent patient.

It should be noted that *A. non-baumannii* species, including *A. junii*, may cause bacteremia in an otherwise healthy patient. Special attention should be given to the correct identification of *Acinetobacter non-baumannii* species, which will contribute to a better understanding of the epidemiology and the real clinical impact of these species as a cause of infections in humans.

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