

Unusual Surgical Infections: Acinetobacter Septicemia

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Abstract

Two cases of Acinetobacter septicemia were diagnosed in Surgical unit 1 of Rawalpindi General Hospital with the help of the bacteriology department of Armed Forces Institute of Pathology (AFIP). One case presented as an acute abdomen secondary to a skin lesion while the second developed septicemia postoperatively. The former recovered due to the timely use of the right antibiotic while the latter died due to delay in diagnosis and late institution of antibiotics to which the organisms were sensitive. These cases show the significance of the timely use of the right antibiotics and early recognition of septicemia and the disadvantages of prophylactic combination chemotherapy in unusual surgical infections like Acinetobacter septicemia.

Introduction

Acinetobacter or Mimae are gram-negative organisms, pleomorphic and often confused with members of the genus Neisseria (Turck, 1977). Members of this group are widespread in nature. The public health bacteriologist encounters them often in feeds, milk and water. They are common in frozen fish and poultry and are also found on the skin of some 25% persons and in the respiratory tract. They have also been isolated from pus, CSF and blood in man (Toplen, 1975). The diagnosis is often missed either because the laboratory worker is unfamiliar with these organisms and reports them as Neisseria, or considers them as contaminants. Since Acinetobacter are resistant to penicillin and Neisseria are sensitive to it, differentiation between the two is very important from the treatment point of view (Turck, 1977).

Case 1:

A 14 year old girl was admitted to surgical unit 1 on Sept. 22, 1981 in a state of shock with abdominal findings suggestive of peritonitis and a few blisters on the medial aspect of left thigh which the mother attributed to application of hot poultice for pain. Four days back she had felt severe pain in the left thigh which was followed 12 hours later by pain in the right hypochondrium which in the next 48 hours spread to the whole of the abdomen accompanied by high grade fever, abdominal distension and vomiting. Exploratory laparotomy was planned after resuscitation. Intravenous doxycycline 200 mg stat and then 100 mg O D. was started to provide an antibiotic cover. Doxycycline was selected in view of her low urine output.

Investigations showed a Hb of 8.8 gm/dl, serum urea 120 mg/dl, serum creatinine 1.4 mg/dl, total leucocyte count 22,000/mn, 3 with 90% neutrophils. In the light of these results the laparotomy was postponed and the diagnosis revised to Septicemia-cause. yet undiscovered.

With conservative treatment her general condition improved but the thigh blisters initially attributed to fomentation, began to spread peripherally leaving behind ulcerated skin. Culture and sensitivity of blister fluid performed at the Armed Forces Institute of Pathology revealed Acinetobacter species sensitive to doxycycline, tetracycline and minocycline. Histopathology of skin reported by the Army Medical College pathology department was intra-epidermal bulla. Another private laboratory reported it as Pemphigus Foliaceus. An expert opinion, of a dermatologist denoted it as pyoderma gangrenosum.

The skin ulcer increased to 2" by 2" in size when the patient had been in the hospital for a month. Her antibiotic was changed to minocycline 100 mg daily along with Lamprene 100 mg daily for fifteen days. At the end of this period the patient had nearly recovered except for her skin lesion which was grafted with Thiersch's grafts. She was finally discharged from hospital on Jan. 1st., 1982.

Case 2 :

The second case who developed *Acinetobacter* septicemia was not so fortunate. She was a 60 years old woman who had undergone nail and plating operation for a pertrochanteric fracture of the neck of right femur on Jan. 13th, 1982. Her preoperative general condition had been good. Postoperatively she was put on prophylactic combination chemotherapy consisting of cephaloradine 500 mg intramuscularly 6 hourly, gentamycin 80 mg 8 hourly and metranidazole 400 mg 8 hourly. On the 12th postoperative day she developed remittant fever and maculopapular skin rash which was attributed to drug allergy. All antibiotics were stopped and anti-histamines initiated. The operation site remained clean. On the 14th post-operative day she developed generalized erythema and pain in the right hypochondrium with no hepatomegaly. Streptococcal septicemia was suspected and crystalline penicillin 2 mega units 6 hourly was started after taking blood for culture and sensitivity. The report from A.F.I.P. again showed *Acinetobacter* species sensitive to doxycycline, tetracycline and minocycline, but by now the patient had developed bronchopneumonia, renal failure and blisters all over the body. *Acinetobacter* were also grown from the blister fluid at the A.F.I.P. The organisms were resistant to all the antibiotics given before the culture reports. Two days after starting doxycycline, the patient died of multiple organ failure.

Discussion

Acinetobacter species rarely cause illness in healthy people and are believed to be opportunistic infections primarily affecting patients who are elderly, debilitated or exposed to predisposing surgical or medical procedures or therapy (Glew et al., 1977). Our 1st case acquired the infection outside the hospital and judging from the clinical presentation the thigh was the likely source of entry. The patient was well and healthy before this illness with a history not suggestive of a low host resistance state. Septicemia in this case occurred in an apparently healthy individual. The few reported cases of infection outside the hospital usually have occurred in patients with debilitating illnesses, chronic alcoholism and chronic renal failure, although cases have been described without underlying illnesses (Rudin et al., 1979). Chronic exposure to metallic particles such as iron and silica in air also predispose workers to *acinetobacter* pneumonias (Cordes et al., 1981).

Our second patient acquired the infection in the hospital. Hospital out-breaks of *acinetobacter* pneumonia and septicemia have been traced to a person-to-person spread as a result of skin colonization (Buxton et al., 1978). Air borne infection is encountered with humidifiers (Turck, 1977) as *acinetobacter* seems to adapt to aqueous environments and hence could be spread in industrial aerosol and pose special risk to susceptible workers (Cordes et al., 1981). The source of infection in our second case was probably the skin which was frequently punctured post operatively for injections or I.V. fluids, as she initially presented with cutaneous manifestations. The lowering of resistance was due to the trauma of surgery combined with prophylactic combination chemotherapy.

The two cases highlight the significance of the time factor in commencing with the appropriate antibiotic therapy. The first case received the right therapy early and recovered. In the second case the diagnosis was made late thus giving the organisms sufficient time to gain a strong foothold in all the vital organs of the body leading to irreparable damage. This was also a case of *acinetobacter* septicemia progressing despite the commencement of the right antibiotic, though late. Such cases have been described-: (Cordes et al., 1981) the cause being associated aspergillus infection of the lung complicating therapy, discovered on postmortem tissue culture.

From the second case we learnt that prophylactic combination chemotherapy for long periods gives a false sense of security. This discourages efforts towards an accurate diagnosis. Moreover it can also be a cause of super-imposed infection with opportunistic organisms like the acinetobacter. Hence in patients susceptible to complications, it is better to observe assiduously for the development of infection and to treat it as it arises rather than using antibiotics prophylactically.

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