Letters to the Editor

Pseudobacteremia and Use of the Radiometric Blood Culture Analyzer

To the Editor:

We would like to report a further instance of pseudobacteremia that illustrates some additional considerations in the use of the radiometric blood culture analyzer not discussed in two recent reports that appeared in *Infection Control*.[1,2]

Our patient was a previously healthy 6-week-old white male who presented to the University of Virginia Hospital with fever (38.8°C rectally), a fine maculopapular rash on the trunk, cheeks and extremities, and clear rhinorrhea. He was admitted for evaluation of the fever, and although our impression was that the infant had a viral illness, blood, urine and spinal fluid were cultured for bacteria. Initial laboratory analyses were normal, and the patient was treated empirically with gentamicin and ampicillin pending the results of the cultures, which we expected to be negative. On the second hospital day, the blood culture was reported to be positive by radiometric detection, and a Gram stain of the culture broth showed gram-positive cocci. On the third hospital day, subculture plates showed alpha hemolytic streptococci. The blood culture bottles immediately preceding our patient's culture in the radiometric blood culture analyzer were noted to contain similar alpha hemolytic streptococci. The preceding blood cultures were from an adult with suspected subacute bacterial endocarditis. Subsequent analysis of these two isolates showed that both were *Streptococcus bovis* with identical biochemical and antimicrobial sensitivity patterns. The adult had had multiple positive cultures, and this information with the rarity of *S. bovis* as a pediatric pathogen convinced us that the organism had been transferred between cultures by the machine. Examination of the apparatus showed that the cavity surrounding the needle sterilizer had not been routinely cleaned and contained debris left by the hollow-point needles after they penetrated the rubber septum of the culture bottle. In consultation with the manufacturer the type of needle was changed to a solid-point, less likely to produce debris, and routine cleaning of the heating block area was instituted. Subsequently, measurement of the heater showed that it achieved only the minimum specified temperature and it was replaced along with its control board.

Because of the time required to identify the bacteria and to make the diagnosis of pseudobacteremia, the infant received six days of inappropriate antibiotic therapy and excess hospitalization. We believe this incident demonstrates that subtle defects in machine performance; in this case, probable needle sterilization failure on an intermittent basis may occur even when the routine maintenance is performed according to the manufacturer's recommendations and no actual deficiency can be identified in the apparatus. Because gram-positive cocci may be more resistant to heat than other bacteria[3] these may be expected as cross-contaminants when needle-sterilization routine is only marginally adequate. If a more usual pathogen had been isolated in this blood culture, we may not have been able to differentiate this case from true bacteremia. Infection control practitioners should be aware that the possibility of cross-contamination exists, even in the absence of easily identifiable machine failure. Clinical laboratories should maintain constant surveillance of the relative position of positive blood cultures in the radiometric detection device, and suspicious clusters should be thoroughly analyzed to investigate the possibility of cross-contamination.

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Hepatitis B Immunization 1983 to 1984

To the Editor:

With exposure to hepatitis B being a major health problem for high-risk employees in the hospital setting, Cra-

ven County Hospital of New Bern, North Carolina elected to offer Heptavax B (Hepatitis B Vaccine, Merck, Sharp & Dohme) to all employees in the high-risk groups free of charge.

It was determined by the hospital Infection Control Committee that the following are considered high-risk employees: all registered nurses starting intravenous therapy, all laboratory personnel, all operating room, recovery room and anesthesia personnel, all emergency room staff, all Emergency Medical Services personnel, and all invasive diagnostic and therapeutic services technicians.

Hospitalwide inservice was conducted, educating all high-risk staff members of the incidence of hepatitis B, what our immunization program included and the benefits to the staff and to patients. The inservice was given by our infection control nurse and a Merck, Sharp & Dohme representative in February 1983.

Initial screening (hepatitis B core AB and hepatitis B surface AB) was offered to all staff in these high-risk groups with 459 people taking advantage of the screening. Two hundred seventy staff members have received the vaccine to date.

Screened		459
Received Vaccine	270	
Waivered	19	
Immune	24	
Pregnant Employees	29	
Resigned Prior to Vaccine	32	
Misc. not Receive Vaccine	11	
Not Vaccinated to Date	74	
Total	189 + 270 = 459	

During our initial screening one employee was detected as having an active case of hepatitis B. The Workmans Compensation costs were $4,362 plus $1,300 paid sick leave. Medical bills included over $2,600 for hospitalization and $1,200 in doctor's fees. If our hospital was to have one additional case of work-related hepatitis B, we could easily pay more in compensation than what was spent in one primary immunization program.

Our Employee Exposure to Hepatitis and Needlestick Protocol when source is known and unknown includes HBsAG and Anti HBs from the employee. This expense has been eliminated totally by our screening and immunization program.

Total cost of detected case of hepatitis B — $8,862.00

Total cost of immunization program to date — $32,952.15

Minus savings of one work-related case — $8,862.00

Three-month savings on needlestick treatment — $1,290.00

Our staff was receptive to the immunization with 60% of those screened receiving the vaccine and less than 5% of those screened electing to sign a waiver.

Of the 270 persons immunized, Heptavax B proved to be well-tolerated with only those side effects listed in the literature being elicited in few cases.

As a partial result of our successful immunization program, several physician's offices and dental offices in the area have begun immunization programs for their staff members.

In our hospital, the benefit of decreased risk to patients and employees greatly outweighed the cost of the immunization.

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