False-Negative Culture Results with Fungal Isolates from Peritoneal Dialysis Fluid

Recently, newly reported causes of fungal peritonitis associated with continuous ambulatory peritoneal dialysis were described both in this journal and in another (6, 7). These episodes threatened to go undetected due to false-negative culture results in the initial investigations.

Each of these cases involved inoculation of peritoneal dialysis (PD) fluid into BACTEC (Becton Dickinson) blood culture bottles with incubation in a BACTEC 9240 (Becton Dickinson) system. This approach for culturing PD fluid is not novel. It has been previously established that the sensitivity of detecting organisms in a sterile fluid can be greatly increased by using a large volume of inoculum and a large volume of media (10). In the clinical microbiology laboratory, this is conveniently achieved with blood culture bottles. Superior performance using blood culture bottles compared to conventional processing has been noted for the recovery of organisms from synovial (10), ascitic (1), and peritoneal dialysis fluid (8). Specifically, inoculation of BACTEC blood culture bottles with sterile fluids has proven effective for the recovery of a variety of microorganisms (4, 5), including fungi (9).

In both of the reported cases, PD fluid submitted for culture signaled positive by the BACTEC 9240 system within several days, though microscopy with Gram’s stain was negative. Subsequently, in both cases visual inspection was needed to identify the growth of filamentous fungi within the blood culture bottles.

The two reports indicate that fluid was initially recovered from positive blood culture bottles via needle extraction. The current BACTEC blood culture bottle is approximately 14 mm in diameter at the top and 17 mm at the base of the neck. The length of many standard needles. These dimensions are de-

over, the importance of this practice should not be overlooked, for a delay in identification of fungal isolates may result in the delay of appropriate antifungal treatment. So, it bears repeating that, as a rule, when a blood culture bottle with a positive signal is found to have a negative microscopic examination, a visual inspection must be performed, or a vital piece of information may be missed or even discarded.

REFERENCES


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