fungemic patients in the surgical ICU, 54.7% died. This is an extremely high mortality rate, although it is quite difficult to distinguish the degree to which candidemia contributed to mortality. Most patients had severe underlying disease, and fungemia is often accompanied by bacteremia, which also contributes to mortality.

Therefore, the use of both strategies—prophylaxis and early preventive therapy—for high-risk patients is of emerging importance for prospective trials involving patients in the surgical ICU.

Vladimir C. Krcmery, Jr., and Robert Babela
Department of Medicine, School of Public Health, University of Trnava, Bratislava, Slovak Republic

References

Reprints or correspondence: Vladimir Krcmery, Jr., St. Elisabeth Cancer Institute, Dept. of Clinical Pharmacology, Heydukova 10, 812 50 Bratislava, Slovak Republic (krcmery @spamba.sk).

Clinical Infectious Diseases 2002;34:1537–8 © 2002 by the Infectious Diseases Society of America. All rights reserved. 1058-4838/2002/3411-0019$03.00

The Value of Suction Drainage Fluid Culture during Clean Orthopedic Surgery

Sr—In support of the results of the study of Bernard et al. [1], we report our experience regarding the value of performing suction drainage fluid culture during aseptic orthopedic surgery. During the year 1996, all consecutive patients at 6 hospitals in southeastern France who underwent clean orthopedic surgery (prosthetic hip or knee implantation) were included in a prospective study to explore the value of drainage fluid culture for prediction of nosocomial wound infection (as defined by the Centers for Disease Control and Prevention [2]). Patients were systematically evaluated both 1 month and 1 year after the surgery to detect possible infection. Patients who underwent septic surgery were excluded.

The study included 733 patients (460 women and 273 men). For more than one-half of patients (377 [51.5%]), the reason for hip or knee replacement was a fracture. The surgical procedures performed were as follows: 520 hip implantations, 59 intermediate implantations of the hip, and 154 total knee implantations. In 76 cases (37.6%), a replacement of implants was performed.

In each center, microbiological analyses were performed using the same technique. First, a sample of fluid from the drain placed near the joint was examined for the presence of neutrophils and bacteria. Second, plates were inoculated using of aerobic and anaerobic methods. The American Society of Anesthesiologists score was 1 for 226 patients, 2 for 138 patients, and 3 for 18 patients. Immunosuppression was noted in 12 patients, rheumatoid polyarthritis was noted in 18 patients, and various risk factors were noted in 66 patients. The National Nosocomial Infection Surveillance risk index score was 0 for 523 patients (71.3%), 1 for 195 patients (21.6%), and 2 for 16 patients (2.2%). Antibiotic prophylaxis was administered to 732 patients.

We analyzed the results for 723 patients (98.5%; during follow-up, 7 patients died and 3 patients were not evaluated by the surgeon). Six infections were observed: 4 after hip implant placement, and 2 after knee implant placement. The mean time from surgery to the onset of infection was 28.2 days (range, 11–71 days; median, 19 days). Microbiological analysis of drainage fluid specimens did not allow the prediction of infection or the bacteria responsible for infection (table 1). In accordance with the findings of Bernard et al. [1] and Sorensen et al. [3], we concluded that systematic bacteriological culture of drainage fluid in clean orthopedic surgery is not useful for the detection of infection.

Table 1. Results of the microbiological analysis of drainage fluid specimens from patients who underwent clean orthopedic surgery in 6 hospitals in southeastern France, showing the association with the development of wound infection.

<table>
<thead>
<tr>
<th>Microbiological test, finding</th>
<th>Total</th>
<th>Who developed wound infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct examination of drainage fluid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not determined</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>No bacteria and &lt;10 neutrophils/mL</td>
<td>710</td>
<td>6</td>
</tr>
<tr>
<td>Rare bacteria and &gt;10 neutrophils/mL</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Culture of drainage fluid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not determined</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Bacteria detected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10 cfu/mL</td>
<td>711</td>
<td>6</td>
</tr>
<tr>
<td>&gt;10 cfu/mL</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Participating hospitals. Hospital Belley, Belley (D. Petitjean and O. Sabot), Hospital Fréjus, Fréjus (J. P. Otto and M. Troadeic), Hospital Giens, Giens (J. Rebourillat, D. Gontier, and N. Giordano), Hospital Moutiers, Moutiers (T. Gautheron), Hospital Saint-Etienne, Saint-Etienne (E. Farizon and S. Guinament), Hospital Villefranche sur Saone, Villefran-
che sur Saone (C. Ledoyen and A. Degrand Guillaud), France.

P. Berthelot,1 R. Girard,2 F. Mallaval,1
A. C. Vautrin,1 F. Lucht,1 and J. Fabry1

1Infectious Diseases Unit and 2Laboratory
of Bacteriology, University Hospital
of Saint-Étienne, and 3Infection Control Unit,
University Hospital of Lyon, France

References

of suction drainage fluid culture during aseptic
and septic orthopedic surgery: a prospective
study of 901 patients. Clin Infect Dis 2002; 34:
46–9.
definitions for nosocomial infections. Am J In-
3. Sorensen AI, Sorensen TS. Bacterial growth on
suction drain tips: prospective study of clean
orthopedic operations. Acta Orthop Scand

Reprints or correspondence: Dr. Philippe Berthelot, Infection
Control Unit, Infectious Diseases Unit, Hospital of Bellevue,
University Hospital of Saint-Étienne, 42055 Saint-Étienne
Cedex 2, France (philippe.berthelot@chu-st-etienne.fr).

Clinical Infectious Diseases 2002; 34:1538–9
© 2002 by the Infectious Diseases Society of America. All
rights reserved. 1058-4838/2002/3411-0020$03.00