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INFECTION CONTROL

LETTERS TO THE EDITOR

Salmonella Transmission on a Pediatric Ward

To the Editor:

A recent outbreak of *Salmonella enteriditis* on our pediatric ward, herein reported, demonstrated many of the problems that may occur in this setting.

The initial case (Case A) presented as diarrhea in a ten-month-old girl. A second patient (Case B), admitted across the unit from Case A, developed bloody diarrhea one week later. Before the mother of Case A became symptomatic with abdominal cramping and diarrhea, she fed a third patient on the ward, a three-year-old boy (Case C) with infectious mononucleosis, who became similarly ill. While all four cases cleared their infections (with antibiotics required in the infants due to the severity of diarrhea and systemic symptoms) more children became symptomatic: Case B's two-year-old brother and a playmate of Case C's, who was later admitted with fever to 106° F and severe toxicity thought to be compatible with salmonellosis.

After the initial cases were diagnosed, and pending results of secondary cultures, strict quarantine measures were instituted: these included closing the ward to all but emergency admissions and closing common utilities such as water fountains. All personnel working on the unit were cultured and were not found to be carriers. Environmental cultures were negative.

The offending agent was identified as *Salmonella enteriditis*, sensitive to all antibiotics tested. How and where Case A acquired it is unknown. Although new cases arose outside the hospital from contact with infected patients, no further spread occurred on our ward or elsewhere in the hospital.

Comment: Unlike prior reported outbreaks caused by *Salmonella*,[1-3] a major contributing cause herein was an infected family member. Initial isolation procedures were not totally effective because this potential for transmission of infection was not initially considered. This problem suggests that parents and/or siblings of infected patients should not come in contact with other patients until it is determined that they are not carriers of *Salmonella*.

Environmental evaluation, including stool cultures of hospital personnel and institution of quarantine measures, was considered to be effective in preventing a larger outbreak.

Since infants exposed to *Salmonella* are at special risk for developing septicemia, shock, acidosis, osteomyelitis or meningitis,[4,5] outbreaks like this one demand immediate control action.

REFERENCES

1. Szmuness W, et al. The microbiological and epidemiological properties of infections caused by *Salmonella enteriditis*. J Hyg Camb 1966; 64:9.
2. Watson I. *Salmonella* meningitis. Arch Dis Child 1958; 33:168.
3. Epstein H C, et al. *Salmonella* infections of the newborn infant. J Pediatr 1951; 38-723.
4. Mac Gregor RR and Reinhart J. Person to person spread of *Salmonella*—a problem in hospitals? Lancet 1973; 2:1001.
5. Watt J, et al. Salmonellosis in a premature nursery unaccompanied by diarrheal disease. Pediatrics 1958; 32:689.

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Prophylactic Antibiotics for Pediatric Surgery

To the Editor:

The recent report by Faden[1] provides the data for prophylactic antibiotics used in pediatric orthopedic surgery. The author did not emphasize the importance of timing of IV antibiotic administration relative to the time of surgery. We studied the timing of IV antibiotic administration for surgical prophylaxis in 31 pediatric patients.

Of the 22 patients undergoing orthopedic surgery, 12 received prophylactic antibiotics. It is important to note that 6 of these 12 patients did not receive any antibiotic prior to surgery; antibiotics were administered only during the postoperative period. Of the remaining 6 patients, 3 patients received the antibiotics at about 1-2 hr. before surgery while the other 3 patients were given antibiotics at 3-4 hr. prior to surgery.

Nine patients underwent cardiovascular-thoracic surgery. The antibiotics were administered at 3-4 hr. before surgery to 6 patients and at about 11 hr. prior to surgery to 1 patient.

This study demonstrates two potential problems of antibiotic prophylaxis: 1) no use of preoperative antibiotic; and 2) long time interval between the antibiotic administration and surgery. It is clear that if antibiotic prophylaxis is indicated, the antibiotic must be administered prior to surgery.[2,3] To achieve peak serum and wound concentrations of antibiotics at the time of surgery, the interval be-

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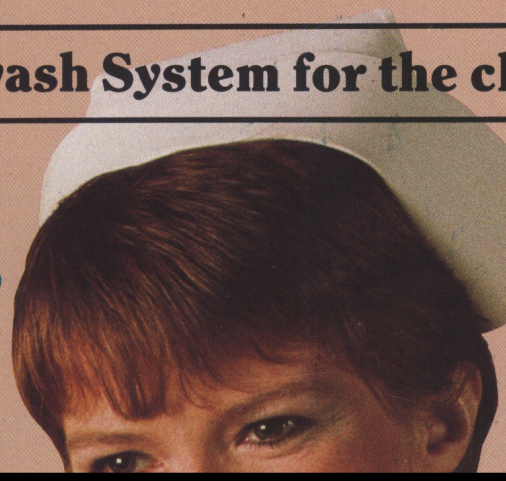

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tween IV drug administration and surgery should not exceed 1 hr.[4,5]

REFERENCES

1. Faden H. Prophylactic antibiotics in pediatric orthopedic surgery: Current practices. Infection Control 1981, 2:107-9.
2. Pavel A, Smith RL, Ballard A et al. Prophylactic antibiotics in elective orthopedic surgery: A prospective study of 1,591 cases. South Med J 1977, 70:50-5.
3. Veterans Administration Ad hoc Interdisciplinary Advisory Committee on Antimicrobial Drug Usage. I. Prophylaxis in surgery. JAMA 1977, 237:1003-7.
4. Polk H, Lopez-Mayor J. Post-operative wound infections: A prophylactic study of determinant factors for prevention. Surgery 1969, 66:97-103.
5. Griffith D, Simpson R, Shoney B et al. Single-dose preoperative antibiotic prophylaxis in gastrointestinal surgery. Lancet 1976. 2:325-328.

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Filter Use for Hyperalimentation Therapy

To the Editor:

I would like to inquire about your recommendations regarding the use of filters for hyperalimentation therapy.

The current policy and procedure for parenteral therapy at our 246-bed hospital includes changing the intravenous tubing and the .22 micron filter every 24 hours.

In my clinical practice, I have found that before the 24 hours is complete, by the process of elimination, occlusion is traced to the filter. Therefore, either complete tubing change or just the filter change is necessary. Obviously, only changing the filter breaks the system, which is not acceptable. Do you recommend a larger size filter or none at all?

I would appreciate your recommendations on this subject, as I am the nurse on our Nutrition and Metabolic Support Service Team.

Rosemary Blevins, R.N.
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This letter was referred to Richard A. Garibaldi, M.D., for his comments.

A great deal of confusion still exists regarding the need for bacteria-tight filters with hyperalimentation therapy. In the early 1970s, high rates of bacterial and fungal sepsis were associated with the administration of hyperalimentation.[1] Microbiologic studies suggested that hyperalimentation solution was a nutrient media for the growth of certain fungi and gram-negative bacteria.[2] At that time it was felt, on a theoretic basis, that filters could prevent intrinsic contaminants from gaining access to the patient's bloodstream. Subsequently, as more stringent methods for hyperalimentation administration were developed the incidence of hyperalimentation-associated sepsis has decreased.[3] Currently, it is thought that organisms causing sepsis are more likely to gain access to the blood stream by migrating along the outside of the catheter or by contamination of the infusion apparatus secondary to breaks in the closed system.[4] Thus, some groups have felt that bacteria-tight filters are unnecessary from the point of view of infection control, and might actually increase the risk of infection because their use necessitates frequent filter or tubing changes.

Unfortunately, no large scale, prospective, blinded trial is available which evaluates the efficacy of filters in preventing hyperalimentation-associated infections. Thus, the decision to recommend or not recommend filters must be gleaned from indirect testimonials and subjective impressions. Each hospital must weigh potential risks against potential benefits. It is even more difficult to calculate costs associated with using and not using filters because data on efficacy are not available. In view of the lack of supportive data, I think that it is reasonable to forego the routine use of bacteria-tight filters for hyperalimentation infusions.

For the purposes of infection control, I would place a greater emphasis on the mechanics of infusate preparation, catheter insertion, wound care, maintenance of a closed system and avoidance of other uses for the hyperalimentation line such as blood sampling, medication administration or transfusions. Clearly, this is a subject for which more information is needed.

REFERENCES

1. Curry CR, Quie PG. Fungal septicemia in patients receiving parenteral hyperalimentation. New Engl J Med 285:1221-1225, 1971.
2. Goldman DA et al. Growth of bacteria and fungi in total parenteral nutrition solutions. Amer J Surg 126:314-318, 1973.
3. Sanderson I, Deitel M. Intravenous hyperalimentation without sepsis. Surg Gyn & Obs 136:577-585, 1973.
4. Ryan JA et al. Catheter complications in total parenteral nutrition. New Engl J Med 290:757-761, 1974.

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