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Group A Streptococcus Outbreaks Linked to Healthcare Workers

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Group A streptococcus (GAS), a common cause of pharyngitis and uncomplicated skin and soft-tissue infections, can cause serious invasive infections (including necrotizing fasciitis and streptococcal toxic-shock syndrome [STSS]) and death. Since 1965, at least 15 postoperative or postpartum GAS outbreaks attributed to asymptomatic carriage in healthcare workers (HCWs) have been reported. The CDC recently described two nosocomial outbreaks of GAS infection in Maryland and California during 1996 through 1997; the findings suggest that early infection control measures that include active surveillance may interrupt transmission and prevent morbidity and mortality.

In Maryland, seven patients with postpartum GAS infections were identified by hospital A. No patients died. A case-control study identified one HCW strongly associated with infections in patients. GAS isolates from the HCW and a patient isolate were typed by sequencing the variable portion of the M-protein gene (emm typing) and found to be identical. The HCW's wife, who was asymptomatic, had positive rectal and vaginal cultures for the same strain. HCW A and his wife were treated with oral vancomycin and rifampin. Surveillance cultures of HCW A have remained negative, and hospital A has had no additional cases.

In California, three previously healthy patients who had thyroid surgery at hospital B developed STSS; two of the patients died of GAS sepsis. Review of hospital B's microbiology records revealed no episodes of postoperative GAS infection during the 6 months before the outbreak. Surgeon A was the only HCW who had contact in the operating room with all three patients. Nasopharyngeal, throat, rectal, and vaginal cultures were obtained from the 41 staff members who worked in the operating room and the pre- or postoperative areas on the days of surgery for the patients. All cultures were negative, except a throat culture from one orderly that grew GAS. Surgeon A received self-initiated penicillin, before adequate cultures were obtained. Rifampin was added following adequate culturing. Throat cultures from surgeon A's household contacts were negative. GAS isolates from all three patients were M type 1 and had indistinguishable restriction fragment-length polymorphism patterns. The orderly's GAS isolate was M type STNS5. Surgeons A and B were restricted from patient care until each had completed a 10-day course of penicillin and rifampin. No further postoperative GAS infection has occurred in hospital B.

To prevent additional nosocomial GAS infections, enhanced surveillance and epidemiological investigation are warranted following one episode of nosocomial GAS infection on a surgical or obstetric ward. Isolates from infected patients should be stored. HCW screening should include all those present during the procedures (including those performing vaginal examinations before delivery and changing dressings on open wounds). Any HCW culture-positive for GAS should refrain from patient care for the first 24 hours of antimicrobial treatment. The CDC also recommends obtaining cultures from household contacts of implicated carriers to identify and treat potential reservoirs for reinfection. Because carriage may recur, implicated carriers should be monitored with periodic surveillance cultures for 1 year after treatment.

FROM: Centers for Disease Control and Prevention. Nosocomial group A streptococcal infections associated with asymptomatic health-care workers—Maryland and California, 1997. *MMWR* 1999;48(8):163-166.