Background:
Surgical site infections (SSIs) lead to highest cost of nosocomial infection treatment. About 90% of SSIs fatal cases were infection in the organ/space of body. Between August and September 2011, Hospital A’s surveillance system reported increasing rate of SSI from baseline 2% to 6.8%, 69% were organ/space SSIs. An investigation was conducted to identify a common cause and risk factors of SSI.

Methods:
• An unmatched case-control study was conducted.
• Five controls were enrolled for a case that met CDC’s case definition for SSI (1).
• Data were abstracted from medical records for the following variables: infection site, microbiology, clinical, demographics and attending health workers.
• The SSI risk factors were analyzed by a multiple logistic regression.
• Survey of operation rooms and inpatient units were done.

Results:
Fifteen (3.7%) of 406 patients developed SSI. The median incubation period was 7 days (range: 0-58 days). Five SSI patients had microorganisms (Arthrobacter spp., K. pneumoniae (ESBL), Enterobacter spp., S. coagulase negative) identified by culture; each patient had an unique organism.

Nurse B (aOR=8.36, 95%CI=1.26-55.32) was significantly associated with SSIs.

Receiving operations from Surgeon C and BMI > 28.5 kg/m² were insignificantly associated with SSIs (aOR=7.21, 95%CI=0.92-56.81 and aOR=6.66, 95%CI=0.87-50.87, respectively). Other potential sources of infection in an operation room included water drops from broken air-conditioners and a crowd of staff during operation.

Conclusion:
Health care workers were a probable risk factor of SSIs, even several environmental factors possibly increased risk of bacterial contamination at surgical site during the operation. Infection control training of operation-room staff was done. Environmental cleaning and proper disinfection were guided by a nosocomial infection control expert. SSI incidence remarkably decreased within a month.

Keywords:
Nosocomial infection, Surgical site infection, Thailand

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Reference: