



Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/
Adverse Event Information

Medical Safety Information

Surgical Fire Due to Ignition of a Flammable Drug by an Electrosurgical Pencil (1st Follow-up Report)

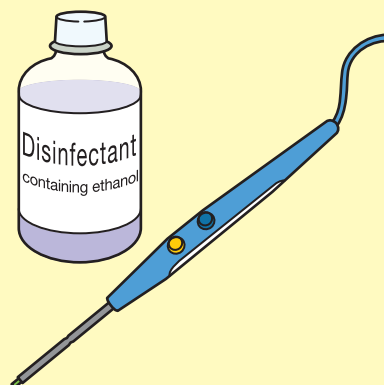
No.107, October 2015

Information about surgical fires triggered by electrosurgical pencils was provided in Medical Safety Information No.34 (September 2009), under the title “Surgical fire due to the flammable by electrocautery”. As 8 similar events have been reported over the 6 years and 1 month since then, information about this issue is provided here again (information collection period: from August 1, 2009 to August 31, 2015). The information is compiled based on “Recurrence of Events and Occurrence of Similar Events” (p.151) in the 37th Quarterly Report.

Events involving surgical fires triggered by electrosurgical pencils have been reported again. All of the drugs involved are disinfectants containing ethanol.

Drug Ignited by the Electrosurgical Pencil	Number of Cases
0.5% Hexizac Alcohol Solution	2
CHLORHEXIDINE GLUCONATE EW SOLUTION FOR DISINFECTION 0.5%	1
STERICLON R ETHANOL SOLUTION 0.5	1
Glucodine R・Ethanol Solution 0.5%	1
MASKIN R・ETHANOL SOLUTION (0.5% $\frac{w}{v}$ %)	1
Hypoethanol Solution 2% WELPAS Antiseptic Solution for Hand 0.2%	1
ISODINE FIELD SOLUTION 10%	1

The package inserts for disinfectants give such warnings as “**Keep away from flames (including electrosurgical pencils)**”



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Case 1

The patient was to undergo a laparotomy, so absorbent pads to soak up excess Isodine were placed on both sides of the abdomen, swabs soaked in Chlorhexidine Gluconate EW Solution for Disinfection 0.5% were used to disinfect the skin, and drapes were placed over the patient, with the pads still in place. When the physician began using the electrosurgical pencil after surgery began, s/he noticed that the drapes were burning. When the drapes were turned back to check, the patient was found to have a burn on the right-hand side of his/her abdomen. It was surmised that vaporized ethanol from the pads might have built up under the drapes and ignited.

Case 2

To enable surgery for cardiac tamponade to get underway without delay, Isodine Field Solution was used to disinfect the whole of the chest and abdomen. After the cardiac tamponade was relieved, the patient's heartbeat did not restart spontaneously, so the physician decided to make an incision in the inguinal region and therefore applied Isodine Field Solution to the thigh as well. Immediately afterward, when the physician used the electrosurgical pencil, it ignited a pool of disinfectant that had accumulated under the patient's body and the patient sustained burns to both sides of the inguinal region, extending up the sides of the chest to the armpits.

Preventive measures taken at the medical institutions in which the events occurred.

- The medical institution will alert staff by attaching a warning label stating "Caution: Flammable (Caution required when using electrosurgical pencils)" to bottles of disinfectant.
- Staff members will remove pads that have absorbed any excess disinfectant before placing the drapes over the patient.

Complementary comment by the Comprehensive Evaluation Panel

- Ensure that staff members are fully aware that some disinfectants are flammable.

* As part of the Project to Collect Medical Near-Miss/Adverse Event Information (a Ministry of Health, Labour and Welfare grant project), this medical safety information was prepared based on the cases collected in the Project as well as on opinions of the "Comprehensive Evaluation Panel" to prevent the occurrence and recurrence of medical adverse events. See quarterly reports and annual reports posted on the Japan Council for Quality Health Care website for details of the Project.

<http://www.med-safe.jp/>

* Accuracy of information was ensured at the time of preparation but cannot be guaranteed in the future.

* This information is intended neither to limit the discretion of healthcare providers nor to impose certain obligations or responsibilities on them.



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