

What's New in the Patient Safety World

June 2018

ISMP on Fire Risk from Skin Preps

Among our numerous columns on surgical fires, several have focused on the role of skin preps or ointments as fuels for such fires:

- January 2011 “[Surgical Fires Not Just in High-Risk Cases](#)”
- April 24, 2012 “[Fire Hazard of Skin Preps Oxygen](#)”
- April 2013 “[Reminder: Hand Sanitizers Are Flammable](#)”
- October 1, 2013 “[Fuels and Oxygen in OR Fires](#)”
- December 16, 2014 “[More on Each Element of the Surgical Fire Triad](#)”
- January 10, 2017 “[The 26-ml Applicator Strikes Again!](#)”
- January 9, 2018 “[More on Fire Risk from Surgical Preps](#)”

Surgical fires caused by skin preps and ointments also recently was highlighted in an ISMP Medication Safety Alert ([ISMP 2018](#)). Over the years, ISMP's MERP (Medical Error Reporting Program) has noted fires related to a number of substances, mostly flammable substances such as surgical skin preps containing alcohol or alcohol-containing iodophors; eye lubricants and ointments containing petrolatum; wound dressings containing tincture of benzoin or collodion; and skin numbing agents containing ethyl chloride. The latest alert, however, notes some new potentially flammable substances.

Gebauer's Ethyl Chloride spray, which had been applied as a numbing agent to a patient's big toe prior to a minor surgical procedure, was ignited when electrocautery was used during the procedure. There are warnings on the bottle, both in the form of a small icon of a flame on the front of the bottle and warning text on the side buried within dense text that it should never be used in the presence of an open flame or electrical cautery equipment. It's certainly not surprising that such warnings were not heeded.

That is very reminiscent of the easily missed warning we have described in numerous columns about the 26-ml Chloraprep applicator as long ago as 2012 (see, for example, our January 10, 2017 Patient Safety Tip of the Week “[The 26-ml Applicator Strikes Again!](#)”). Indeed, the new ISMP report also includes yet another instance related to the 26-ml applicator.

The ISMP article goes on to mention past cases related to Gebauer's Ethyl Chloride spray, LACRI-LUBE S.O.P. ocular lubricant (white petrolatum and mineral oil ophthalmic ointment), and tincture of benzoin.

As usual, the ISMP alert has excellent recommendations for reducing the risks of surgical fires related to such substances. First is taking inventory of such substances in multiple areas (not just OR's but any procedural locations, including doctors' offices, clinics, and ambulatory surgery units). Then the list should be evaluated to see whether safer alternatives are available.

Ensuring awareness of the risks should be a priority. This includes affixing ancillary labeling to the products where the manufacturer's warnings are "not prominent or distinctive", as in the case of the 26-ml Chloraprep applicator or the Gebauer's Ethyl Chloride spray. They also emphasize selection of properly sized prefilled applicators of alcohol-based surgical skin prep solutions.

They also reiterate the other important aspects for prevention of surgical fires, including:

- Avoid pooling of flammable preps
- Ensure adequate drying time of flammable preps
- Dispose of flammable agents properly
- Minimize use of supplemental oxygen
- Promote communication (not just the fire risk of a case, but also the timing of use of heat sources relative to use of any supplemental oxygen)
- Do annual training

We've pointed out in our previous columns that there has been a shift over the years in the "setting" of surgical fires. They now occur more frequently in relatively "minor" surgeries like temporal artery biopsies, or removal of skin lesions or cosmetic procedures on the head/neck region. Two key factors contribute to that trend. One is that in such cases oxygen may be given in a "free" fashion (i.e. it may be delivered via nasal prongs or a face mask rather than via an endotracheal tube or otherwise secured airway). The other factor is a general cavalier attitude when doing "minor" cases and lack of attention to things like the risk of flammable substances as described in today's column.

Surgical fires are "never events" that are fully preventable. But organizations need to ensure they have raised awareness, done appropriate training, discuss the fire risk during the pre-procedure huddle and/or surgical timeout, and do the things noted above.

Our prior columns on surgical fires:

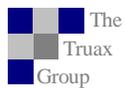
- December 4, 2007 ["Surgical Fires"](#)
- April 29, 2008 ["ASA Practice Advisory on Operating Room Fires"](#)
- November 2009 ["ECRI: Update to Surgical Fire Prevention"](#)
- January 2011 ["Surgical Fires Not Just in High-Risk Cases"](#)
- March 2011 ["APSF Fire Safety Video"](#)
- November 2011 ["FDA Initiative on Preventing Surgical Fires"](#)
- December 13, 2011 ["Surgical Fires Again"](#)
- April 24, 2012 ["Fire Hazard of Skin Preps Oxygen"](#)
- April 2013 ["Reminder: Hand Sanitizers Are Flammable"](#)

- June 25, 2013 [“Update on Surgical Fires”](#)
- October 1, 2013 [“Fuels and Oxygen in OR Fires”](#)
- August 12, 2014 [“Surgical Fires Back in the News”](#)
- December 16, 2014 [“More on Each Element of the Surgical Fire Triad”](#)
- December 2015 [“Unique Ignition Sources in Surgical/OR Fires”](#)
- January 10, 2017 [“The 26-ml Applicator Strikes Again!”](#)
- January 9, 2018 [“More on Fire Risk from Surgical Preps”](#)

References:

ISMP (Institute for Safe Medication Practices). Surgical fires caused by skin preps and ointments: Rare but dangerous and preventable. ISMP Medication Safety Alert! Acute Care Edition 2018; March 8, 2018

<http://www.ismp.org/resources/surgical-fires-caused-skin-preps-and-ointments-rare-dangerous-and-preventable>



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