Introduction
Exposure to powder from surgical gloves presents a health hazard, with possible untoward reactions, to patients and staff. It has been well documented in literature: glove cornstarch powder induces adhesion formation while potentiating wound infections. Additionally, latex proteins bind with glove powder, becoming aerosolized when gloves are removed from the package, donned or removed from the hands. These aerosolized latex proteins then precipitate a potentially life-threatening allergic reaction in latex sensitized patients and healthcare providers.²

Powdered Gloves May Contribute to an Increased Risk of Surgical Site Infections (SSIs)
Patients who suffer hospital-acquired infections cost hospitals up to $34,670 in direct costs³, a figure that can rise sharply when indirect costs such as increased litigation, decreased referrals, unreimbursed expenses as well as a patient’s lost wages and potential morbidity are included.

Glove powder can, and will, trigger unnecessary hazards leading to:⁴
- delayed wound healing
- bacterial environmental contamination
- adhesion formation
- granuloma formation

It is difficult to estimate the exact amount of glove powder that is released into an incision, especially with the variability in size and the practice of changing gloves during surgery; which subsequently introduces additional powder. According to a study by Suding, the existence of more than 10 mg/ml of glove powder may affect the rate of abscess formation.⁵

All of these potential consequences can increase the risk of Surgical Site Infections (SSIs).

Glove Powder Acts as Vector to Latex Allergen with Increased Association of Occupational Asthma
Powdered latex gloves have been implicated as one of the main contributors to the latex aeroallergen levels in a healthcare facility.⁶ A protocol to establish a natural rubber latex–safe environment should be developed and implemented⁷ in all healthcare facilities. Latex proteins can be aerosolized by attaching to glove powder, increasing latex allergy sensitization and potentially eliciting delayed hypersensitivity reactions upon direct and indirect contact.⁸ This not only can increase the risk of acquiring a latex allergy, but can also increase the risk of acquiring occupational asthma through inhalation of the latex proteins.⁹ Additionally, in a study by Kelly not only were sensitization rates reduced with the use of low-allergen, powder-free latex gloves, some healthcare workers actually lost their sensitivity thus allowing them to continue to work in their environment.¹⁰
FDA Final Rule Banning Powdered Surgical Gloves

FDA has finalized their decision to ban powdered gloves, as follows:

- “The Food and Drug Administration (FDA or Agency) has determined that Powdered Surgeon’s Gloves, Powdered Patient Examination Gloves, and Absorbable Powder for Lubricating a Surgeon’s Glove present an unreasonable and substantial risk of illness or injury and that the risk cannot be corrected or eliminated by labeling or a change in labeling. Consequently, FDA is banning these devices.” This ban will become effective January 18, 2017.

Conclusion

Cornstarch powder is not benign. When starch glove powder was originally introduced in 1947, researchers hoped that it would prove to be inert in clinical practice. Over time, however, it became evident from clinical and laboratory studies that cornstarch was capable of producing post-operative reactions, foreign body granuloma formation and delayed wound healing. Cornstarch powder also leads to increased latex sensitivity in healthcare workers. Type 1 and Type IV hypersensitivity reactions to latex proteins in hospital staff may lead to increased staff sick time and decreased job satisfaction, when the employee can no longer stay in their current position.

In 1947, the origin of powder used on gloves was to aid in donning. With the various powder-free glove options now available, this is no longer necessary. The FDA decision to ban powdered gloves is now final and effective as of January 18, 2017. Hospitals must now move quickly to eliminate powdered gloves from their facilities. They can reach out to glove manufacturers to assist them in the transition to powder-free glove alternatives.

References:

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