

Analyzing The Cleanliness of Surgical Gowns with Scanning Electron Microscopy

An essential requirement for all medical devices is that they should be clean from microbial contamination¹. In addition, to avoid foreign body reactions, medical devices should be clean from foreign bodies or particulate matters². Although, it is possible to see objects as small as 50 μm , with the naked eye, a microscope is required to detect anything smaller. In this study, surgical gowns, single use of standard performance (SP) and high performance (HP) material and reusables made of cotton and synthetic material, were evaluated to explore their cleanliness at a microscopic level using scanning electron microscopy (SEM).

Results

A wide variety of particulates could be seen on all the surgical gowns with SEM. The particulate matter on the single use gowns were confirmed to be integrated in the material. All SEM analyses of the non-woven gowns of both SP and HP materials were consistent and showed that the non-woven material looked clean (Figure 1 A and B).

In contrast, all samples of the reusable gowns revealed a wide variety of unidentified structures. Figure 1C indicates that synthetic reusable gowns

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