

THE DISINFECTION OF THE SKIN OF THE HANDS.

"Before an operation the nails are trimmed as close as possible with the scissors, and any tags of skin are removed. At first those who have worn their nails long find it uncomfortable to cut them off, but the discomfort soon disappears. The nail itself may be made aseptic. A bit which was cut off did not infect broth. But it is highly improbable that the crevices beneath the nails can ever be disinfected.

It is probable that some skins are much harder to disinfect than others. The roughness which is caused by the use of certain chemicals is a serious bar to disinfection, and assistants are occasionally obliged to use chemicals which do not agree with their skin. The following method, however, does less harm to our own hands than any which we have hitherto tried:

After the scissors have been used, the hands and arms are first scrubbed for three minutes in hot water and soap to remove all dirt and grease. The scrubbing-brush ought to be steamed or boiled before use, and kept in 1 in 1,000 biniodide of mercury solution. When the soapsuds have been thoroughly washed away with plenty of clean water, the hands and arms are thoroughly soaked and rubbed for not less than two minutes with a solution of biniodide of mercury in methylated spirit, 1 part of biniodide in 500 parts of spirit. Hands which cannot endure 5 per cent. carbolic acid lotion, or 1 in 1,000 sublimate, bear frequent treatment with the spirit and biniodide. After the spirit and biniodide has been used for not less than two minutes, it is washed off with a biniodide of mercury lotion, 1 in 2,000 or 1 in 4,000.

A scrap of skin snipped off and dropped into broth gave the following results: Surgeon's hands.—Eight tests were made before September, 1895. The spirit and biniodide were used for about a minute. The skin was septic five times in eight tests. When the immersion in spirit was increased to at least two minutes, the unsatisfactory results improved, and the skin was septic twice out of thirteen tests. It is wise to increase the time of immersion in spirit and biniodide when the skin is rough. Almost invariably the scrap of skin to be used for the test was taken before the operation. Once it was taken at the end, and proved to be aseptic. In preparing the skin everything depends upon the care and efficiency with which the processes are carried out. Mr. Ernest Bridges, the House-Surgeon at the Great Northern Hospital, has achieved the highly creditable feat of having sterilised his own hand five times in succession, and the patient's skin five times in succession.

The house-surgeons who assist at operations have all taken the keenest interest in these tests. It is, therefore, interesting to see the success which has attended their efforts to

disinfect their hands. Out of twenty-four tests, twenty-one were aseptic, and three were septic. Once the skin of a casual house-surgeon was septic, and twice the skin of the dresser was septic. These were the only occasions on which the skin of the dresser was tested; but it is improbable that good results can be obtained except by those who have realised the extreme difficulty of the task.

The Sisters and Nurses are devoted in their efforts to obtain good results. The skin of their hands is often rough from frequent washing and immersion in various kinds of lotion during their work in the wards. The skin of the Sisters' hands was tested seven times, and was aseptic five times and septic twice. The skin of the Nurses was tested six times, and was aseptic five times and septic once.

Thus, the skin of various hands was tested sixty-one times, and was aseptic in forty-five and septic in sixteen. I have no doubt that, as the difficulty of the task is realised, the proportion of septic skin will diminish, as it has done in the case of the surgeon.

It would be interesting to try to learn whether contact with septic materials increases the difficulties of disinfection. Once the skin of the surgeon and of the Nurse were aseptic, although both had just been engaged in a case in which the intestine was ruptured. The value of vigorous scrubbing with soap and water is very great. On one occasion the skin of the hands was aseptic after it alone. It is right to say, however, that the same hands had, a short time before, been immersed in lotions. On another occasion the skin of the unprepared hand infected the broth with a variety of bacteria, including the colon bacillus. Once the unprepared skin of the hand failed to infect broth. Here, again, the hands had been immersed in lotion for some time prior to, but not just before, the test. When working at the bacteria of the skin I constantly used scrapings of it for the inoculation of broth, and in no instance failed to start a mixed culture of moulds, cocci, and bacilli. Welch says that traces of sublimate can be found in the skin of the hands of surgeons who are in the habit of using that drug six weeks after it had been discontinued.

Seeing how hard it is to disinfect the hands, we allow as few as possible to touch the instruments and appliances used for operations. The Sister or Nurse has merely to hand fresh basins of lotion; they do not touch the towels or sponges except in emergencies, when, to save time, they may have to cleanse the latter of blood. Otherwise the assistant or surgeon alone touch the sponges, which are handed to them in biniodide of mercury lotion. As biniodide does not form an insoluble compound with albumen, it is quite easy for the assistant to wring out the sponges. Moreover, no one but the surgeon touches the instruments or ligatures."

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