ADHESIVE RUBBER DAM FOR THE PREVENTION OF POSSIBLE INFECTION AT THE SITE OF OPERATION.

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Infection of wounds during operation may always be traced to contact with materials, and is probably rarely if ever due to contamination from the atmosphere (Dr. P. L. Friedrich, *Arch. für Klin. Chir.*, B. 59.). The common sources of infection of operation wounds are as follows: 1. Instruments. 2. Sponges and dressings. 3. The hands of the operator or assistants. 4. The skin of the patient. 5. Towels, sheets, etc., used about the wound.

The exhaustive researches of Fürbinger, Ahlfeld, Koch and others emphasize the difficulty of rendering the hands aseptic, for after a short period of exposure they again become septic from their own secretions, as has been shown by cultures made for the inner surface of rubber gloves. We have been able to overcome this difficulty by the use of such gloves.

The sterilization of the skin surface in the field of operation is practically as difficult and uncertain as is the case with the hands, as shown by Mark Kummel, Lauenstein, Samter, Senger, and others. The danger of

infection from this surface is always present a short time after it had been prepared, because of the secretions from the sweat and sebaceous glands, which the sterilizing solutions have been unable to reach. Samter secured sterility in 20 per cent. of his cultures after thorough disinfection; Lauenstein, 44 per cent.; after preparation by Fürbinger's method, not a single case was free from germs, showing that asepsis of the skin is not often obtained.

For the past two years the author has been endeavoring to secure a sterile, adhesive rubber dam, which, when placed on the skin, would remain firmly adherent to it throughout the operation, at the end of which it might be removed. The mechanical, chemical and physical difficulties proved great stumbling-blocks, and one manufacturer after another declared it would be impossible to produce such an article. Finally all the difficulties were overcome, and an adhesive rubber dam produced¹ which answers all the purposes mentioned above. It is sufficiently adhesive to stand considerable traction without separating from the skin, and is not affected by water, antiseptics or wound secretions. It is prepared and sterilized, placed in sterile envelopes and these, again, placed in

other envelopes, much after the method used in preparing the dry sterilized catgut. Thus prepared, the dam remains in a perfectly sterile condition, and can be applied to the prepared skin, and, as an extra precaution, its surface washed with any of the antiseptics or sterilizing solutions. If it is not sufficiently adhesive a little ether spread over its surface will increase its adhesive properties. It is elastic and gives with the skin, being, in reality, a non-secreting, sterile, artificial derma, for the period of operation.

Owing to its elasticity, it may be applied to any part of the body. For laparotomies, it is spread over the abdomen, extending onto the symphysis pubis and covering the umbilicus. For herniotomy, it covers the inguinal region and genitalia, and it is in this operation that it is of the greatest practical importance, for we know that this field of all others is most frequently infected from the surrounding parts. In vaginal operations, it covers the entire perineum and prevents the soiling of the field from the rectum. In amputations, it entirely encircles the limb at the seat of operation. In operations on the eye, it covers all the remaining parts of the face. In fact, there is no part of the body to which it may not be readily applied, as is shown by the accompanying photographs.

METHOD OF APPLICATION.

The field of operation is prepared in the usual way. It is then thoroughly dried, washed with ether and the rubber is applied, the latter being put slightly on the stretch as it is brought in contact with the skin. The small quantity of ether retained by the skin increases the adhesive power of the dam. After it is applied, it is washed with alcohol or with any other sterilizing solution. The incision is now made through the dam, simultaneously with that in the skin, and to the same extent, as it stretches even more readily than the latter and there is no trouble in retracting it. The dam remains in position until the sutures are inserted and tied, after which it is lifted at one end, put a little on the stretch and divided at the points of suture in a manner similar to that of dentists in removing the dam from teeth.

Its second practical application is in all suppurating and draining wounds. In these cases it should be left on until suppuration and discharge have ceased so that it may protect the skin and prevent the erosion and eczema which are so frequently caused by the irritation of a purulent discharge. For this purpose it is particularly applicable in cases of artificial anus, cholecystostomy, gastrostomy, nephrotomy, suprapubic cystotomy and a draining, suppurative, circumscribed or general peritonitis.

We have used it in a number of cases at Mercy Hospital, with gratifying results, and feel that its simplicity of application and its self-evident advantages need no further word of comment.

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Politzer Air Douche for Inflating the Stomach.—Our foreign exchanges mention with approval Oehler's suggestion that the Politzer air-bag can be made to serve the purpose of inflating the stomach for diagnostic purposes. The subject reclines and takes a swallow of water. The tube of the air-bag is inserted in the nose, and as he swallows the water the air is expelled from the bag and passes with the water into the stomach. After repeating this simple maneuver three times the stomach is usually so inflated that its outlines can be accurately determined and its motor function tested by the peristalsis induced by the air.

1. By Johnson & Johnson.