

A METHOD OF SPLINTING SKIN GRAFTS.

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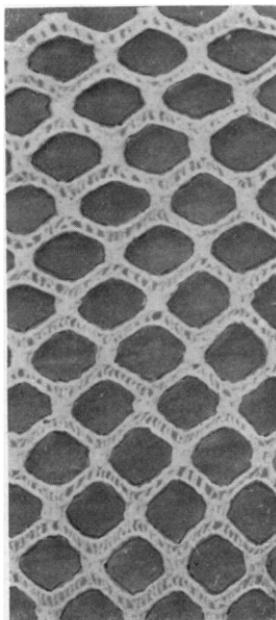
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EVERY surgeon has his own pet method of dressing skin grafts, and fairly good results are obtained when the grafted wound is dressed with gauze moistened with normal salt, or borax solution, 1 : 40; with overlapping strips of rubber protective; with dry gauze or powders; with silver foil; or when it is simply left exposed to the air without any dressing. However, there are many partial takes and failures for the reason that the grafts are not properly splinted after they are applied, and in consequence slip down with the dressings, or are floated off by blood or serum collecting beneath them. In order to overcome this difficulty it is necessary to reinforce the grafts with some material which has enough body to act as a splint, and at the same time is not too rigid to shape itself readily to any desired location. It is also very important that it should not adhere to the grafts and granulations, or cause too much pressure, and also that there be free escape of any secretions into the dressings.

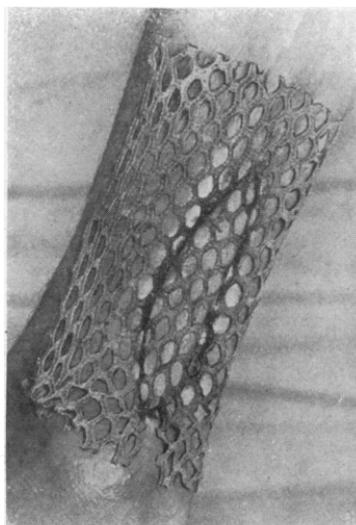
After experimenting with various materials, I tried a coarse meshed net, such as is used for curtains. It is made of loosely woven bars of cotton thread, surrounding openings about 1 cm. in diameter. It is necessary to have the openings approximately this size as smaller ones often become clogged. This proved too flimsy, and also became adherent to the grafts. So in order to increase the body of the fabric, after washing out the sizing and drying, I soaked the material in a rubber solution made up of pure gutta-percha, 30 parts, and chloroform 150 parts, and found that after the chloroform had evaporated and the material was dry there was enough stiffness to give a very satisfactory splinting material. When prepared the net should be of a light grayish-brown color throughout.

FIG. 1.



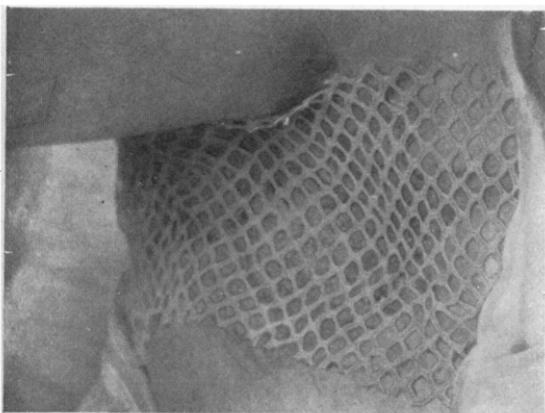
Shows the actual size of the openings of the mesh.

FIG. 2.



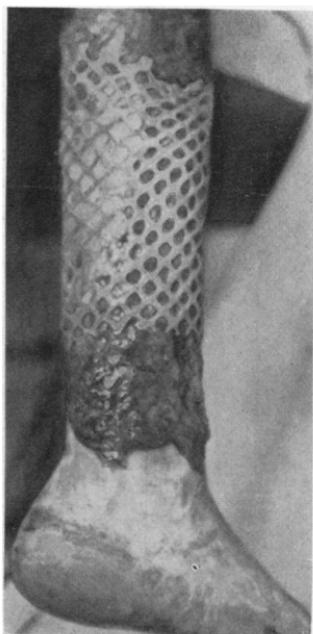
Shows the material splinting a whole-thickness graft on ulcer following osteomyelitis of tibia. Note cuts to allow accurate fitting. Photograph taken four days after application of mesh.

FIG. 3



Shows the close fitting of the mesh over Thiersch graft on deep breast wound following excision of carcinoma on a very fat woman.

FIG. 4.



Shows the mesh over whole-thickness graft on burn, with the overlapping edges resting on granulation tissue. Photograph taken seven days after application.

The sterilization before application is as follows:

Cut in pieces as large as may be desired and separate them with one or two thicknesses of gauze. Place in a sterile jar, and fill it with 1:1000 bichloride of mercury solution. Change this solution three times with twelve-hour intervals, and finally allow the mesh to remain permanently in 1:1000 bichloride solution. It can be kept for a considerable time in this way (I have used it after keeping it nine months in the bichloride solution), although it is better to make up small quantities and often. The dry permeated material will keep indefinitely. No hot solutions must come in contact with the mesh during the sterilization or application.

Technic.—After the grafts are in place the mesh is taken out of the bichloride solution and thoroughly rinsed with salt solution, then dried with a sterile towel. A piece is cut large enough to allow a margin around the grafted area of from 5 to 10 cm. Then the material is applied and pressed snugly down on the grafted area and surrounding skin or granulations. Should the conformation of the part or wound not permit the mesh to be evenly applied, a few cuts with scissors will allow an infolding and accurate fitting, which is necessary in order that the splinting may be successful. The overlapping edges may be secured to the skin by strips of adhesive plaster when necessary. After the net is in position the dressing selected is applied, and the whole secured by a bandage.

Where the overlapping material rests on granulation tissue, it will be found that it can be lifted up at any time without causing pain or bleeding, as the granulations do not adhere to or grow into the bars of the impregnated material.

With this mesh in place the grafts can be observed from time to time with little or no danger of displacing them. The first dressing is usually made 36 to 72 hours after operation, and if the gauze next to the mesh has dried out, it must be thoroughly soaked with salt solution, and then carefully lifted with an instrument, while with a pledget of gauze the net is held down, as the dressing is raised from it, in order to guard against any displacement. Then the wound is irrigated with

salt solution, and any secretions wiped away. The mesh is left in place from four to ten days, and then can be removed without difficulty.

Any type of dressing may be used over this material,—silver-foil, wet or dry gauze, etc., and I have found it particularly desirable in those cases where the grafted area was exposed to the air.

Conclusions.—The use of such a material permeated with rubber is advantageous in that it splints the grafts without too much pressure, and is easy to apply and secure in place. It does not adhere to the grafts or to granulations. It allows the free escape of any secretions which may form, and thus prevents maceration. Any sort of dressing may be placed over it. The progress of the healing may be observed at any time without danger of displacing the grafts. Should any blisters form and serum or blood collect beneath the grafts, it can be removed at once.

I have used this open-mesh material over Thiersch and “whole thickness” grafts, on nearly every part of the body, and have found its use a distinct advantage.