FURTHER USES OF GELATIN FOAM
IN NEUROSURGERY*

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The demonstration of the effectiveness of fibrin foam as an agent for human thrombin for hemostasis is one of the outstanding contributions to neurosurgery of the decade. While Ingraham and Bailey* stated primarily on the use of this material in the control of hemorrhage, they described other purposes for fibrin foam and stated that it could be used at the same time as sulfadiazine and penicillin without change in tissue reaction, and without any alteration in the speed of absorption of the foam. From a practical as well as from a commercial consideration, the soluble gelatin preparation developed by Correll and Wise was demonstrated by Light to be equally as effective an agent for thrombin as human fibrin foam. In the report made by Light and Prentice on the use of this new absorbable sponge in hemostasis, they listed several other uses for this “universal protein” in addition to those for the control of bleeding. Following the introduction of the gelatin foam it was the author’s privilege to participate in the clinical comparative uses of fibrin and gelatin foam with human and bovine thrombin for the control of hemorrhage in neurosurgical operations. The gross results of these experiences were reported by Pilcher and Meacham. It was in the course of these experiences that it became evident that the gelatin material had other adaptabilities than those already pointed out by Ingraham and Bailey, and Light and Prentice. While it is certain that more than one individual has found the gelatin sponge useful beyond its hemostatic and other purposes referred to in the literature, these experiences have not been recorded. Feeling that the gelatin sponge can be utilized in the field of general surgery as well as in other surgical specialties, it may be helpful to re-emphasize the recorded usefulness of this material and to tabulate the further employment to which it has been extended.

The two specific uses of the foam material not heretofore alluded to in the literature are (1) as a substitute for cottonoid strips for the protection of the brain surface for retraction purposes and as a sealing pack for a dry operative field against spinal fluid flooding, and (2) as an agent for the obliteration of surgical “dead spaces.”

The production of the large gelfoam sponges (Fig. 1) makes it possible to utilize these as a substitute for cottonoid strips. The handling of these strips is made easier by cutting the strips in desired lengths and thicknesses before soaking them in normal saline solution. The gelatin material, where retraction protection is needed, owes its value to the fact that there remain

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no irritating foreign particles as was demonstrated by Mayfield in his experience with cotton material. On cut surfaces of the brain where one is operating after a lobe resection or through a transcortical exposure, the strips are left in place as hemostasis may demand (Fig. 2). In procedures where one operates in an opened ventricle, appropriately sized packs of gel-foam can be used to seal the foramen or artificial openings in these cavities.

Fig. 1. The larger sponges cut from the "bricks" measure 15 × 2 cm. in the dry state. It is more effective to cut these in the dry in suitable sizes for protective purposes or as substitutes for cotton pledges for mechanical purposes.

Fig. 2. Cerebellar approach.