XIII.

POSTOPERATIVE TREATMENT OF THE RADICAL MASTOID OPERATION.

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The topic as given to me by the Program Committee, to be considered in this symposium, would indicate that at least two other phases of this major surgical operation had been or were to be considered: 1. The indications for the radical mastoid operation; 2. The technic of the radical mastoid operation.

The postoperative treatment of the radical mastoid operation is of special interest to the surgeon because of the uncertainty of its duration, the annoying complications and results of neglect to patiently and perseveringly, almost daily for many days or weeks, treat the case, make it the operation to be most dreaded and avoided by the patient and otologist.

This is due to the fact that so many operators have had unsatisfactory results, even after long and careful treatment. As a basis for the after-treatment of the radical mastoid operation, it is assumed: 1. The operation was indicated; 2. A complete operation was done; 3. The tympanic orifice of the eustachian tube was closed, or so nearly so as to prevent retention of secretion and moisture in the middle ear cavity.

The two things that make any postoperative treatment uncertain as to time and results are: 1. An incomplete operation; 2. Neglect to so modify the bony and cartilaginous meatus as to produce the best facilities for drainage, ventilation and inspection, and failure to thoroughly remove the pathologic conditions in the different recesses of the middle ear cavity. The posttympanic space and eustachian tube are often a source of a purulent discharge and necessitate a protracted treatment.

Since my paper before this society, 1915, I have performed the complete radical operation on the mastoid in only a few cases, the modified operation as advocated then giving satisfactory results, except in cases where there was indication of extensive necrosis in the attic and mastoid process or intra-

cranial involvement. Postoperative treatment begins as soon as the operation is completed, the external wound sutured, cavity dried and inspected.

The healing of the external wound is much quicker and more satisfactory if traumatism of the surrounding area is minimized. The unnecessary use of a number of hemostats and the too forcible and long continued use of retractors may so lower the vitality of the parts, as a result of bruising and stretching, that union or healing is seriously impaired.

I have used the various antisepticizing solutions in the operated area, during and after completing the operation, but none has given me as uniformly satisfactory results as a 1 to 1,000 solution of alphozone. This powder is readily soluble in water, is thoroughly antiseptic, nontoxic and does not interfere with the blood clot when this is used in the classical mastoid operation. This remedy is made of succinic acid and hydrogen peroxid and is said to be "as germicidal as mercury bichlorid, 75 times as germicidally powerful as carbolic acid, 100 times stronger than formaldehyde," etc., but the solution must be freshly prepared, as "when dissolved in or on contact with water alphozone combines with a portion of the water and undergoes a change known as hydrolysis."

Satisfaction or success in the postoperative treatment consists in rapidly obtaining and maintaining a dry cavity, covered by a vascular fibrinous dermatized membrane.

The completeness of the operation and refinement of technic has much to do with attaining this end, but notwithstanding the thoroughness of the operation and perfect surgical technic used, neglected after-treatment will result in disappointment or failure of the operation.

In some cases it is most difficult to keep down granulations, and granulations decrease hearing, especially if allowed to form on the internal wall.

The first dressing consisting of a folded strip of gauze, which had been saturated with 5 per cent iodoform emulsion and so applied through a large speculum as to touch every part of the cavity and tight enough to prevent any sagging of the fibrocartilaginous wall or contraction of the external auditory meatus; at the same time care must be used to pack evenly

but not forcibly—the latter may result in interference with free circulation in the soft parts or displace the flaps made from the fibrocartilaginous canal.

The external dressing, consisting of pads of folded gauze wet in the 1 to 1,000 alphozone solution, snugly fitted around the external cartilaginous ear, over this absorbent cotton is applied and held in place by a bandage. This external dressing is allowed to remain for at least 48 hours, when it is removed and a similar but lighter dressing is applied. The packing in the cavity is not removed for four or six days after the operation, and this must be so carefully done as not to cause pain or bleeding or interference with the firm union of the fibrocartilaginous flaps.

The cavity is not irrigated but thoroughly dried with absorbent cotton, and again packed with 5 per cent iodoform gauze. In the second dressing I do not use the iodoform emulsion. At this time the sutures are removed and folded gauze placed over the posterior wound, held in place by the bandage. Best results have been obtained by rapidly reducing the amount of external dressing and doing away with the bandage—both are uncomfortable and retain too much heat and moisture. The wire screen mastoid protector devised by me some years ago, Fig. 1, I find most satisfactory and enables me to do away with the heavy dressing and bandage on the fourth or sixth day after the operation. After the second packing is removed from the cavity, which is usually on the sixth or seventh day, no further packing is used unless there is sagging or prolapsis of the metal flap, but instead the entire cavity is filled with powdered boracic acid and alphozone (six parts boracic acid to one part pulverized alphozone), two or three times a day, until the cavity is thoroughly dry and covered by a vascular fibrous membrane. For two or three days after beginning the use of the boracic acid and alphozone there is quite a free discharge of seropurulent or serous fluid, which fills the bowl of the external ear. This is removed with sterile cotton, the middle ear cavity dried with the same material by means of an applicator. The object being to keep the cavity as free as possible from heat and moisture, covered with the powdered boracic acid and alphozone, thoroughly ventilated and protected from infection.

Slow recovery, elevation of temperature or postoperative fever I have found to be more frequently due to absorption of proteids or toxins from the intestinal canal and not from sinus thrombosis. Most cases requiring the radical mastoid operation are more or less septic—the vitality and power of resistance is far from normal and to this condition we are to add the results of the anesthetic plus the operation.

It must be remembered that in septic conditions food not digested and assimilated thoroughly deranges the body chemistry, fermentation and putrefaction go on.

Ordinary bowel movement may remove some of this, but an empty alimentary canal does not mean a clean one; peristalsis is imperfect and the result of food putrefaction, and small particles of fecal matter remain in the folds and pockets of the canal, which give rise to toxins which easily find their way into the blood and lymph stream. For these reasons, immediately after the operation the patient is kept comfortable for at least 24 hours; usually the administration of one hypodermic of 1/12 or 1/8 grain of heroin will accomplish this. Free purgation, restricted diet (protein free), daily bath and gentle massage, fresh air, sunshine and rest.

The method I have outlined briefly is the treatment I have followed almost exclusively for the past eight years, because of the satisfaction given. The cavity is dry and dermatized usually in from three to six weeks.

Other methods, such as skin grafting, blood clot, bismuth paste and paraffin, etc., in my hands have not been satisfactory.