

RESTORATION OF THE AURICLE

By J. PAUL DE RIVER *

IN the realm of surgical science there is nothing more interesting than the history of plastic surgery. In remote times it was used to remedy the ravages of disease and repair disfigurements resulting from injuries. The records of Indian and Egyptian surgical art confirm its antiquity. The branch that probably antedates all others is rhinoplasty. While we cannot fix with certainty the period in which it was first practiced, we may be reasonably sure it was developed in India or ancient Egypt where it was a common practice among certain tribesmen to cut off or mutilate the noses and ears of their captives, and also of those guilty of marital infidelity.

References to restorative surgery are found in the Ebers papyrus, the hermetic book on medicine of ancient Egypt, believed to have been written in 1552 B. C., and in the hieratic writings of unknown authorship. The Roman Hippocrates, Celsus, who lived during the reign of Augustus Tiberius, described the restoration of the nose, ear, and lips by the use of neighboring skin. In 1597 the work of Gaspar Taliacotius, entitled "De curtorum chirurgia per insitionem" and published in Venice, described operations for repairing the lips and ears, and restoring the nose by utilizing the skin from the arm. The bibliographic records of plastic surgery are abundant with material contributed by authors throughout the world, including the American surgeons' noteworthy share.

Although the subdivisions of this art have multi-

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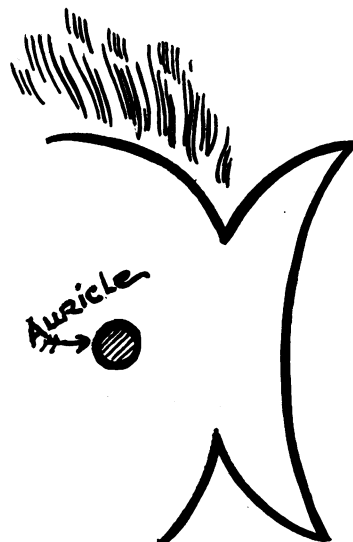


Fig. I - Szymanowski' Method.

plied as various organs or parts have become involved, the fundamental principles underlying all plastic operations seem to have changed but little, and those now utilized are largely the result of experience gained in the World War. A more thorough understanding of sepsis and asepsis, the control of wound infection, the conservation of tissue and certain mechanical devices have aided the surgeon in carrying out in detail the remedial defects in heretofore nonaccessible regions of the body.

Time has solved many surgical problems and clarified certain theories that have been misunderstood and misquoted in some of our textbooks. Due to the many and various wounds and disfigurements encountered in the World War, a diversity of operations were tried. Many of these fell by the wayside although they had been advocated as the proper procedure. Through this wealth of material a greater knowledge of plastic surgery has been gained, thus placing it on a fairly stable basis. The older methods that have proved worthless have been relegated to the surgical junk heap. This does not mean that a plastic millenium has been reached, for, as in all other branches of science, there is much yet to be learned. Only by practical experience and ingenuity can the remaining obstacles be overcome.

In dealing with the subject of otoplasty I reviewed twenty-one textbooks on surgery. In only three was any reference made to it. Textbooks written since the World War gave very brief descriptions of the surgical procedure recommended. It is hoped that this article will stimulate others in the art of otoplasty. There is much to be done, excluding the operations for cosmetic purposes. The loss of an ear is a gross disfigurement, at times reducing the unfortunate to social ostracism. It is a distinct vocational handicap in many gainful occupations.

The classical operation, as given in the textbooks, is that of Szymanowski's. He advises utilizing the skin posteriorly to the auditory canal. (See illustration No. 1.) The flap is outlined, dissected up and doubled upon itself posteriorly. It is brought forward and placed in the desired position, then sutured through and through that the raw surfaces



Fig. 2

Fig. 3

Fig. 4

will heal together. The denuded area back of the newly formed ear should be skin grafted before healing can be expected.

Detached, full-thickness grafts were formerly used, but due to the lack of blood supply they have not always proved successful. Skin grafting of the granulating raw surface may be handled with more assurance of success if the tube pedicle flap from the side of the neck is used, and the pedicle allowed to remain attached to the neck just below and posteriorly to the angle of the jaw. In this manner sufficient skin can be readily removed from the posterior triangle of the neck and swung up into place to cover the denuded area. The graft carries an adequate blood supply which assures its vitality. The neck wound is undermined and its edges closed with dermal and relaxation sutures of silkworm gut. At the end of ten days, or after circulation has been established, the pedicle is severed at its base or lower end. A small portion of the tube is split; one end is attached to the anterior superior end of the newly formed ear, after Szymanowski's operation. The reattached proximal end of the tube is allowed to adhere in its new position. The pedicle is again severed at its base and partially split throughout its length. The split or under surface

of the tube is sutured to the original postauricular flap, forming the helix. The lower end of the tube is sutured to a prepared area, posteriorly and inferiorly to the auditory meatus, and serves as the lobule of the newly formed ear.

This method provides a covering of skin to the original raw surface behind the ear, and helps in the actual formation. If carefully followed we are able to obtain a fairly good-looking ear, with helix, antehelix and lobule. Provided the middle and internal ears are intact, it is surprising to note the increase of hearing, for the newly formed pinna aids materially in conducting sound waves to the middle ear.

The principle of tubing the pedicle of a flap has shed new light on how to deal with tissue loss, whether the result of trauma or disease causes. Large areas denuded of skin may be repaired. By means of the so-called caterpillar method, which I have described, the graft is assured an adequate blood supply the source and direction changing each time the base of the flap becomes the free end. The chief bugbear of the plastic surgeon has been the nourishment of the graft. Its viability has been his chief concern. Failure often resulted because of an insufficient blood supply. However, this has been



Fig. 5

Fig. 6

Fig. 7

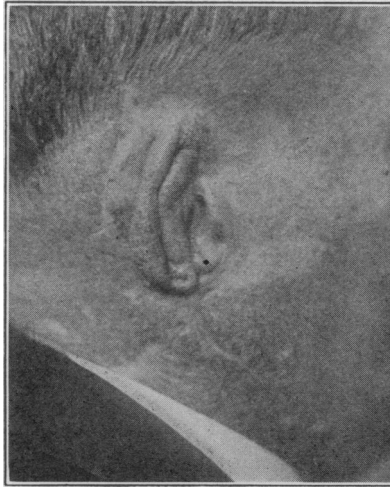


Fig. 8



Fig. 9

largely overcome by the tube flap, for in most cases it can be fashioned to carry its own nourishment. And when based on the face or upper portion of the neck we may be almost certain of its viability, provided the tube is not too long.

CASE—H. F., white male, aged 51, single, merchant seaman. Family and past history negative. History of present condition: September 20, 1924, patient was struck by an automobile and dragged for several yards, resulting in the loss of his right ear and an injury to his right arm. The ear was picked up, but no attempt was made to restore it.

I examined the patient some time later and found a complete loss of right pinna, with a marked reduction of hearing on the right side. The middle, external and internal ears were found to be functioning.

Operation: October 20, 1925. Operation performed under general anesthetic. The postauricular flap method of Szymanowski's was used. The denuded surface was covered with skin from the posterior triangle, right side of neck, after the tube-flap method. The tube was based at the angle of the right jaw, and the graft sutured in place with interrupted fine dermal sutures. The neck wound edges were undercut and closed with fine dermal sutures and reinforced with silkworm gut. A light gauze dressing was applied.

October 31, 1925—The tube pedicle was detached from its base; the inferior free end split and its surface sutured to the upper end of the postauricular flap and side of the head. Wound was closed with dermal sutures and dressing applied.

November 16, 1925—Inferior end of tube pedicle was detached from its bed, partly split and its surface sutured to the posterior surface with dermal sutures. The free end of the tube was sutured to the raw surface of the face just beneath the auditory meatus.

November 28, 1925—Results satisfactory. Hearing improved. Patient discharged from the hospital.

December 20, 1925—Patient reported for observation. He was greatly pleased and was again following his occupation as a merchant seaman.

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Recent Observations on Scarlet Fever—The new method of treating scarlet fever patients by the administration of a suitable antitoxin has presented a problem in relation to the development of protection against the disease. A study in the New Haven Hospital of late immunity developed by former patients who were treated with scarlet fever antitoxin and those who did not receive antitoxin indicates that there may be some disadvantage in the therapeutic dosage with the antitoxin in respect to the establishment of a more lasting immunity. It may turn out that the combating of the actual disease decreases the security that an attack of scarlet fever almost invariably promoted in former days. Nicholls at Yale has demonstrated the presence of *Streptococcus scarlatinae* in a proportion of persons who exhibited features of infection with hemolytic streptococci without evidences of clinical scarlet fever, thus showing that an existing immunity to the soluble toxin of *Streptococcus scarlatinae* does not prevent the development of local pyogenic infections with this organism. Persons so infected may serve as foci for the spread of scarlet fever. Trask of Yale urges that a large excess of antitoxin be used for therapeutic purposes to obtain consistently satisfactory results. In late cases with faded rash, little or no benefit may be expected from antitoxin therapy. Septic complications may continue when the specific toxemia and its attendant rash have terminated, thus suggesting that *Streptococcus scarlatinae* may have two different modes of attack and thus result in different clinical pictures of the disease.—*Jour. A. M. A.*, March 26, 1927, p. 1004.

Does Infant-Welfare Work Preserve the Unfit?—

It has often been said that the methods of preventive medicine which have so greatly decreased the deaths of infants under 1 year of age, only preserve babies to die in later childhood. Dr. I. S. Falk of the department of hygiene and bacteriology of the University of Chicago, after a study of the deaths of white infants and children up to the age of 10 years during a quarter of a century period in Chicago, finds, on the contrary, that the death rates for the subsequent years are also lower.

Length of years doesn't amount to much without health; so it is better to aspire to the maintenance of health rather than to longevity.—*Ohio Health News.*