MODERN SURGICAL TECHNIC

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SURGEON, ST. JOSEPH'S AND GOOD SAMARITAN HOSPITALS, LEXINGTON, KY.

SECOND EDITION

Four Volumes and Index Volume

2,590 Illustrations, Including

57 Full Color Plates

VOLUME THREE

Surgery of the Breast

Surgery of the Abdomen

Philadelphia London Montreal

J. B. LIPPINCOTT COMPANY

SECOND EDITION

THE FIRST EDITION OF "MODERN SURGICAL TECHNIC" WAS PUBLISHED IN 1938 AND WENT THROUGH ELEVEN PRINTINGS. THERE WAS ALSO A ONE-VOLUME EDITION DESIGNED ESPECIALLY FOR USE BY THE ARMED FORCES.

A SPANISH EDITION, IN THREE VOLUMES, WAS PUBLISHED BY SALVAT EDITORES IN 1941.

A PORTUGUESE EDITION, IN THREE VOLUMES, WAS PUBLISHED BY EDITORA GUANABARA IN 1944.

PRINTED IN THE UNITED STATES OF AMERICA

MODERN SURGICAL TECHNIC

Second Edition

VOLUME THREE

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Surgery of the Breast

"Simple mastectomy is too radical for a benign lesion and inadequate for cancer." (BLOODGOOD.)

ORIENTATION

In the last two or three decades no notable progress has been made in the diagnosis and treatment of carcinoma of the breast. True, refinement of technic and a better understanding of the problems involved have been achieved, but the over-all picture is still the same.

Radical operation before metastases have occurred gives the best results. There is no unanimity of opinion as to the value of pre- and postoperative irradiation. The author has adopted the middle course and submits the patient to brief preoperative irradiation and postoperatively to a more intensive course of irradiation.

When, after radiation therapy, nausea and vomiting occur, as is usual, this may be remedied by a high caloric diet, by decreasing the dose of irradiation or by interrupting therapy for a few days, if this seems necessary.

In cases of advanced carcinoma of the breast, estrogenic substances in large doses have yielded gratifying results in some cases—in the relief of pain and the reduction of the size of the tumor. The author has seen bone lesions improve remarkably after hormone therapy. Dresser (1939) pointed out the value of roentgen ray sterilization in the treatment of bone metastases following carcinoma of the breast. Not all patients, however, are relieved by recourse to this type of therapy. In premenopausal patients bilateral mastectomy and oophorectomy have yielded promising results (Guy W. Horsely).

F. A. Adair[1] has reported the successful use of testosterone propionate in approximately 200 cases of carcinoma of the female breast. Intramuscular injections of 100 mg. of testosterone propionate are given three times a week; a total dosage of 2,400 to 3,000 mg. Improvement is not to be anticipated when the tumor involves soft tissues such as liver, lungs and brain or when there is a local skin recurrence, but striking improvement is observed in most of the cases in which there is bone metastasis. Adair believes it probable that under the influence of testosterone the billions of cancer cells are "snowed under" by the copious deposit of calcium precipitates, especially in areas of bone destruction—a locking-in process in which cell reproduction is difficult. In cases of widespread bony metastases, the use of testosterone propionate seems to be more efficacious and longer lasting than x-ray therapy. Although to date most work has been done on cases of advanced malignancy of the breast, recently work has been started on cases of early operable carcinoma of the breast. Radical mastectomy is supplemented by large doses of testosterone implanted into the latissimus dorsi muscle or into the subcutaneous tissues near the wound at the time of the operation. This combination has been used by Adair in 135 cases to date. Two months after the operation further doses of testosterone are implanted. The patient receiving testosterone therapy usually develops some masculinizing sequelae, as evidenced by a deep, husky voice, hair on the face, acne on the face and body, and an enlarged

clitoris, but usually there is also, at least temporarily, a gain in weight, a feeling of well-being, a loss of bone pain and a repair of bone destruction. Testosterone may however, its effects are profound and gratifying.

The surgical treatment of carcinoma of the breast is based upon the premise that

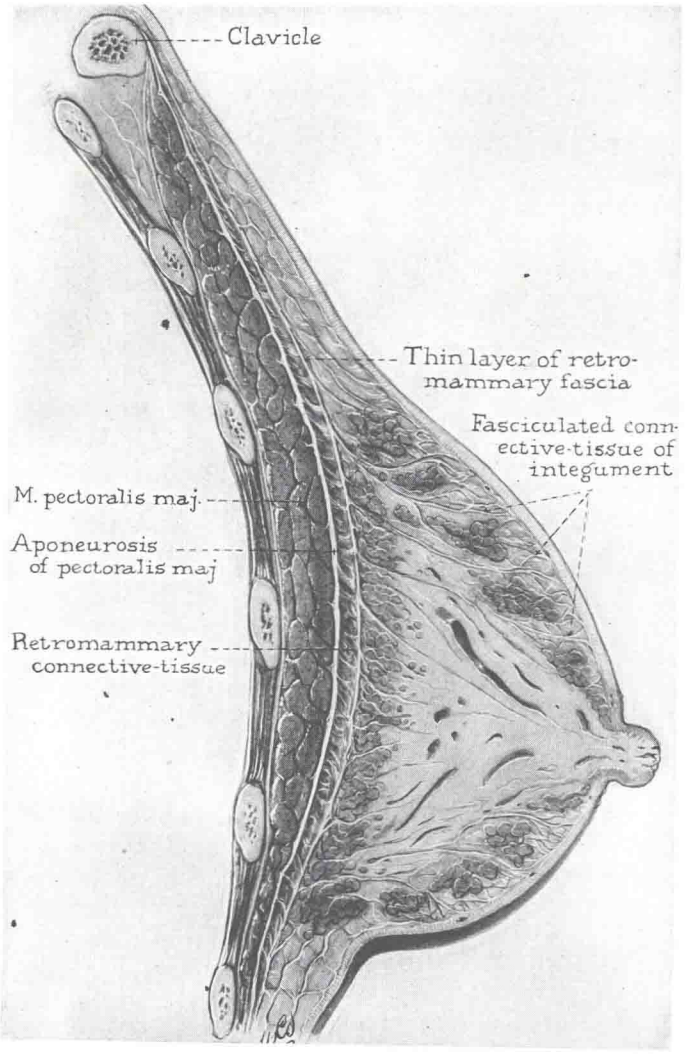

FIG. 1242. A thorough knowledge of anatomy of the breast is essential to forestall errors in operative procedure.

be used on female patients suffering from breast malignancies at any age, while the estrogen therapy must be confined to patients of 60 years and older. Testosterone is not a cure for carcinoma of the breast; malignant disease at the outset is localized, and that it later invades other tissues via the lymphatics and occasionally by the blood stream. If this is so, successful therapy in the treatment of breast malignancies

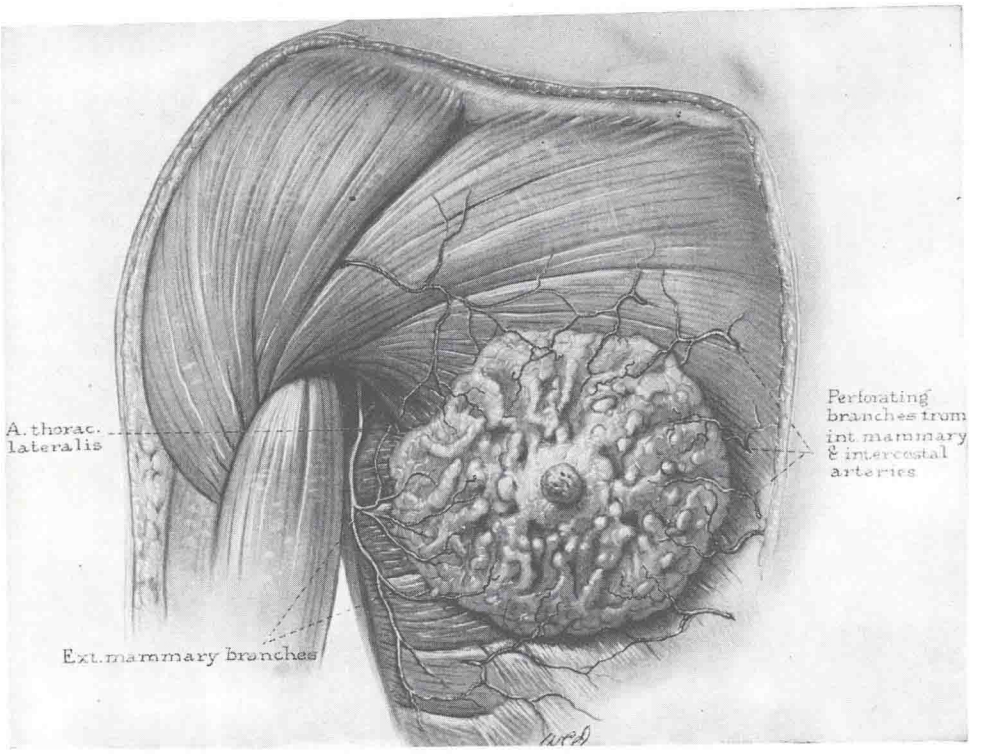

FIG. 1243. Arterial supply of the breast.

depends upon early recognition and upon prompt, complete eradication of all the affected tissues.

Since the breasts are stimulated by the internal secretions of the ovaries prior to the menopause, *castration* has been advocated sporadically for many years as an adjuvant in the treatment of carcinoma of the breast. The rationale of ablation of the ovaries rests on the fact that malignant mammary gland cells also may be stimulated by ovarian secretions. Beatson was probably the first to advocate castration prior to the menopause in women who had advanced carcinoma of the breast. In recent years, ovarian function in such cases has been suppressed by the roentgen ray.

Individual instances have been cited as spectacular examples of the benefits of this treatment, but reported results have varied, and it is generally recognized that the benefits, if indeed they do occur, are temporary and that the patient eventually succumbs to the original malignant invasion.

ANATOMIC CONSIDERATIONS

A thorough knowledge of the anatomy of the breast is essential to forestall errors in operative procedures. The breasts consist of parenchyma, stroma and adipose tissue (Fig. 1242).

Arteries. These are: the first, second, third and fourth perforating branches of the internal mammary artery, the long thoracic artery, the pectoral branch of the acromiothoracic artery, the superior branches of the axillary artery, the perforating branches of the internal mammary artery and branches from the subscapular artery (Fig. 1243) extending from the inner side from the second to the sixth rib.

Veins. The veins correspond to the arteries. The veins anastomosing around the nipple are known as the circle of Haller.

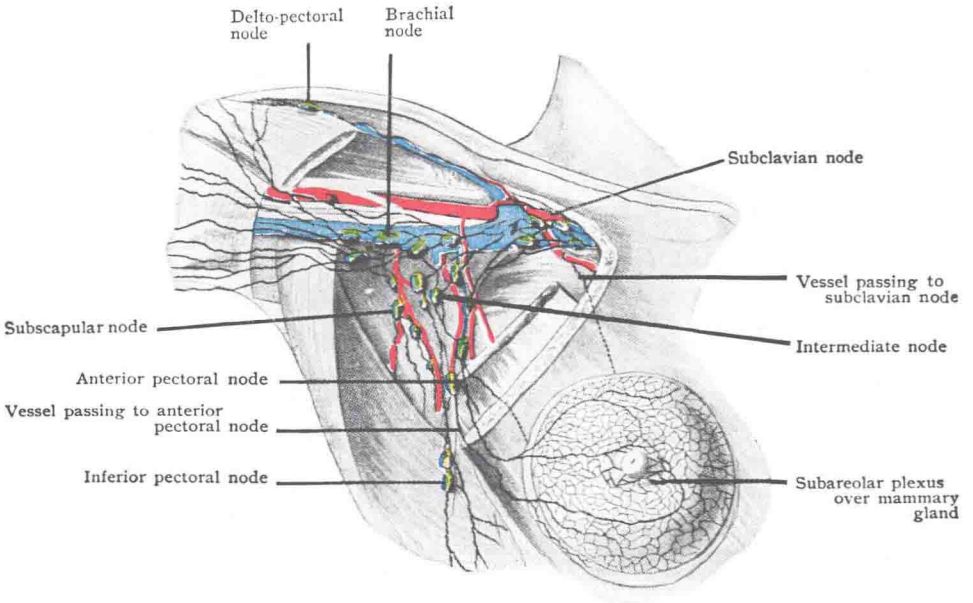

FIG. 1244. Lymphatics of the breast. (Porier and Cunéo from Muller: Davis' Applied Anatomy, ed. 9, Philadelphia, Lippincott.)

Nerves. The nerves of the mammary region are the intercostal, thoracocostal, long thoracic, descending cutaneous branches of the cervical plexus and branches from the brachial plexus.

Lymphatics and Lymph Nodes (Fig. 1244). There are two sets of lymph nodes, superficial and deep. The deep lymphatics lie within the interlobular connective tissue, forming a plexus around the mammary lobules. They follow the course of ducts and converge upon the surface beneath the areola, where they enter the subareolar plexus of Sappey. In addition, this plexus receives cutaneous lymphatics from the nipple and the areola. The deep lymphatics also communicate with the pectoral plexus, situated beneath the pectoral fascia. From the pectoral and subareolar plexus the lymphatics course outward, forming several large trunks which terminate in the pectoral group of the axillary nodes. From the inner side of the breast a few lymphatic trunks course along the anterior perforating arteries and terminate in the anterior mediastinal lymph nodes. From the upper part of the mamma they terminate in the subclavicular group of nodes after perforating the costocoracoid membrane. There is a free intercommunication between the lymph channels in the axilla, and the pectoral plexus also communicates through the upper part of the anterior abdominal wall with the subperitoneal plexus of the abdomen.

The Relation of the Lymph Nodes of the Subclavicular Fossa to Cancer of the Breast. This is discussed by Carajannopoulos (Athens, Greece), Henri Godard (L'Oeuvre Scientifique) and Professor Pierre Delbet. They point out that in certain cancers of the breast one finds an involvement of the supraclavicular lymph nodes in cases in which the axillary nodes are not involved. In these cases, malignant extension has taken place along a different route from that commonly observed, in which the axilla is involved before the supraclavicular fossa is invaded. These facts led Delbet to advise his pupil Pierre Mornard to make a detailed study of the lym-