

Pathology
in
General Surgery

By
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THE UNIVERSITY OF CHICAGO PRESS

THE UNIVERSITY OF CHICAGO COMMITTEE
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Publication assisted by G. D. Searle & Co. which
furnished the engravings for the plates.

THE UNIVERSITY OF CHICAGO PRESS, CHICAGO 37
Cambridge University Press, London, N.W. 1, England
W. J. Gage & Co., Limited, Toronto 2B, Canada

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CHICAGO PRESS, Chicago, Illinois, U.S.A.

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Pathology
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General Surgery

To my preceptor

DALLAS B. PHEMISTER

PREFACE

THE surgeon who concerns himself only with the exercise of diagnostic and therapeutic technical skills squanders an opportunity for the more complete understanding of disease such as is offered to few who practice the disciplines of medicine. In contemplating the inadequacy of our knowledge, one senses an obligation for the complete physician to relate carefully the form and function of living parts as they are exposed at operation to the clinical manifestations with which they have been associated and to follow resected tissues into the laboratory, there to determine their gross and microscopic character. Such clinico-pathologic correlations not only represent the basis for improvement in the practice of medicine but should also be regarded as the reference points from which may be derived original concepts so vital to the continued advance of the frontiers of medical knowledge.

An effort has been made to present general surgical diseases systematically, with illustrations of the most commonly encountered conditions, together with a recent bibliography which has been selected as a guide for the reader who wishes to obtain more complete information. Material obtained from the departments of Surgery, Radiology, and Pathology, of the University of Chicago Clinics forms the case background for this book. The writer has drawn heavily on discussions with his teachers and colleagues and on information gleaned from the medical literature. However, the ideas expressed herein are his own, and for them he assumes sole responsibility.

Of those whose assistance has made my task easier, I thank especially:

Dr. Eleanor Humphreys, for continued inspiration and encouragement and for countless suggestions concerning the manuscript, which she read at several stages during its preparation and finally in its completed form.

Dr. Lillian Donaldson, for her assistance in procuring many of the roentgenograms.

Mr. Herbert Sigler, of the Harry C. Phibbs Company, for working unceasingly in behalf of this project, first in arranging for its financial support and, second, for supervising preparation of the illustrative plates.

Mr. J. G. Searle and the G. D. Searle Company for their generosity in bearing the costs of engravings for the illustrative plates.

Dr. Dallas B. Phemister, Dr. Lester B. Dragstedt, Dr. Alexander Brunschwig, Dr. William E. Adams, and Dr. Hilger Perry Jenkins, for their inspiration, counsel, and unselfish contribution of material for the illustrative plates.

Mr. Jean Crunelle and Mr. James Glaze, for technical advice and practical assistance in making the original color transparencies and x-ray prints.

Dr. C. Frederick Kittle, for assistance in library research.

The Ansco Corporation, for generously supplying the color film from which all but a few of the original color transparencies were made.

The staffs of the Medical Library of the University of Chicago Clinics and of the University of Kansas Medical Center and

PREFACE

of the Laboratory of Surgical Pathology of the University of Chicago Clinics, for courteous and prompt attention to the author's many requests.

The many persons of the University of Chicago Press and the R. R. Donnelley and Sons Company, for unstinting efforts in presenting the author's contributions in such beautiful fashion.

Mrs. Ellen Schaeffer, my secretary, for indefatigable and seemingly endless work with the manuscript.

And, lastly, my family and friends, for their patient understanding.

PAUL W. SCHAFER, M.D.

KANSAS CITY, KANSAS
January 24, 1950

INTRODUCTION

PATHOLOGY as the study of the nature and the origins of disease must inevitably gain wider horizons as our knowledge of form in relation to function increases. Today studies of normal physiology and of the pathogenesis and morphology of disease go on simultaneously in the laboratories of the basic and medical sciences and in hospitals and clinics. Form and function are being re-examined with new techniques, while new hypotheses are being tested in the living animal and in the human being. While research is accelerating and old theories are being modified or rejected, there can be no holiday in the training of physicians and surgeons. Today pathologists must continue to teach as best they can, more than ever aware that their knowledge is partial. If this is not the time for the definitive text or the encyclopedic handbook, there still is need for the informative mon-

ograph and for the text with a fresh viewpoint in a special field of pathology.

The present book has been designed to provide factual observations and correlations within the area designated by the title. Written by a surgeon with great interest and special training in surgical pathology, it deals mainly with abnormalities encountered in general surgery. Its uniqueness lies in the correlations possible only to the surgeon who has examined and treated the patient and who then studies the surgical specimen with care and enthusiasm. Dr. Schafer's years of training at the University of Chicago gave him unusual opportunities to study, at first hand, a wide variety of surgical diseases. His book with its excellent illustrations is the culmination of those years and of experience gained since as a surgeon and a teacher at the University of Kansas.

ELEANOR M. HUMPHREYS

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PATHOLOGY IN GENERAL SURGERY

EPIDERMAL CYSTS

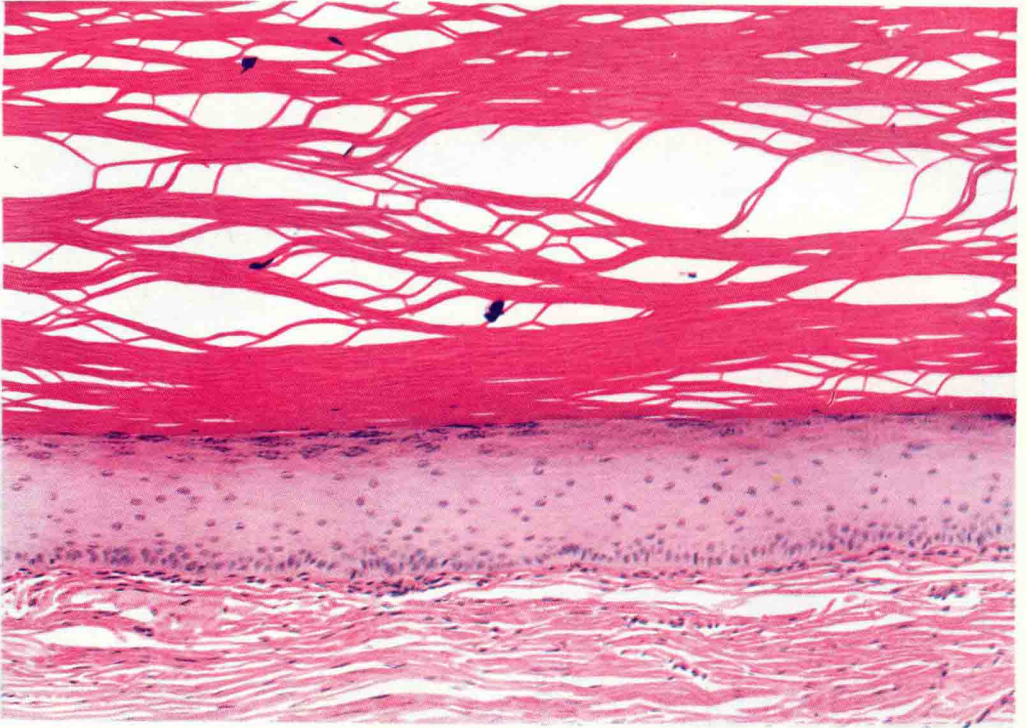


PLATE 1.—Wall of intact epidermal cyst, presenting a lining of stratified squamous epithelium, the outermost basal cells of which are regularly applied at right angles to a straight basement membrane. Dermal appendages are absent. Desquamated keratin fills the lumen.

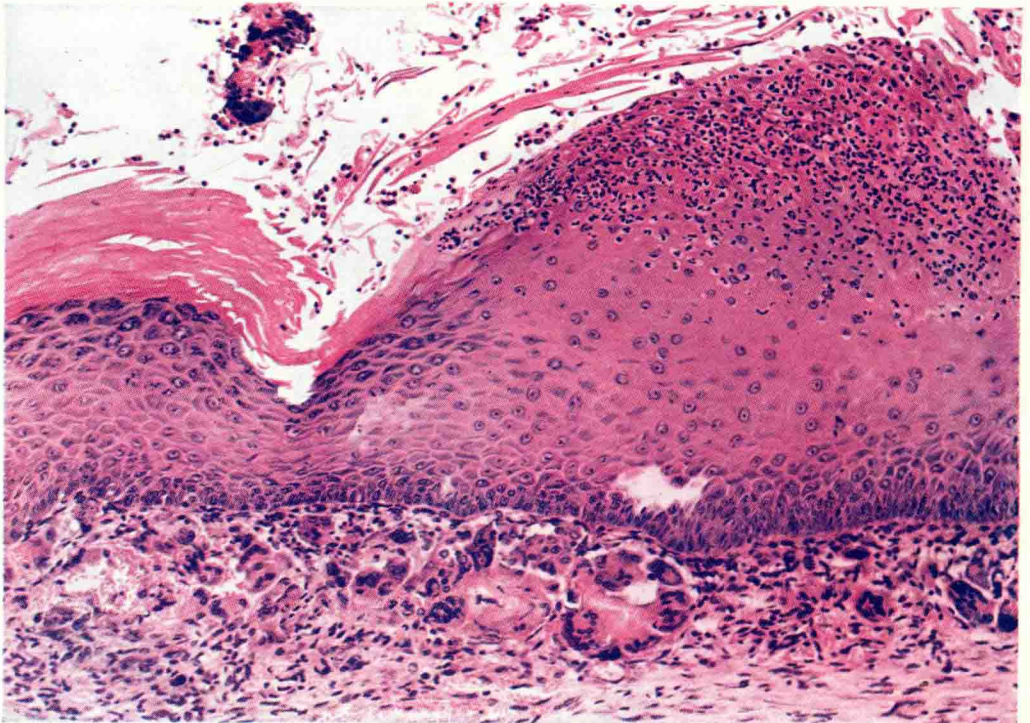


PLATE 2.—Wall of epidermal cyst, which ruptured into the tissues during evacuation. Inflammatory cells are present in the lumen, in the superficial areas of the lining epithelium, and in the surrounding connective tissue. Foreign-body giant cells are also present in the latter location.

CUTANEOUS CYSTS

IT IS proper that one of the first considerations in this text should be of the most common lesion subjected to examination in most laboratories of surgical pathology. As such, the "sebaceous cyst," in spite of the complacency with which it is ordinarily viewed, presents problems which will be recurrent throughout the following descriptions. Its clinical characteristics and gross and microscopic structure are well known; its mode of origin as a retention cyst following obstruction of a gland duct is generally accepted, though by some with reservation; yet considerable difference of opinion exists in the matter of its origin from a sebaceous gland. The chief reason for this controversy lies in the fact that the lining of the cyst is composed of stratified squamous epithelium, and only rarely are secreting sebaceous gland cells encountered. The usual explanation for this seeming paradox is that the duct of a sebaceous gland becomes occluded and gland secretions accumulate within, causing enlargement of the duct with the formation of a cyst. The stratified squamous epithelial lining of the duct thus becomes the lining of the cyst so formed and further contributes to the volume of its contents by proliferation and desquamation of its cells. These then lose their identity as they become incorporated into the cheesy, fetid, yellow, amorphous mass which fills the cyst. The sebaceous gland cells atrophy and disappear as a result of the pressure of the expanding cyst. That this sequence of events does occur can oc-

asionally be demonstrated by a fortunate collection of cases. However it is undoubtedly true that a cyst of identical structure can be formed in similar fashion in relation to other skin accessories and by the implantation of epithelium beneath the skin as a result of accidental injury or during the course of surgical operations. Thus a better name for this condition would be "epidermal cyst" but, because of precedent and general practice, it is likely that these structures will continue to be called "sebaceous cysts." The common "wen" of the scalp is an unquestioned example of a true sebaceous cyst which results from occlusion of a sebaceous gland duct. Clinically it presents as a firm, rounded prominence which moves freely on the underlying bone. Often patients seek medical attention only after the appearance of multiple lesions.

Epidermal cysts occur generally over the body but are most frequently encountered on the scalp, face, neck, shoulders, and back. They are situated in the dermis and thus move with the overlying epithelium, in which at times the orifice of the occluded duct may be seen. No deep fixation is encountered unless previous inflammation has caused marked scarring. They are usually small but may attain fist-size when located in unexposed areas in persons loath to consult a physician. The epithelium overlying large cysts becomes considerably thinned, and the yellowish, doughy content of the cyst can be palpated and seen through the translucent skin. Frequently, either sponta-

neously or as a result of the patient's attempting to evacuate the cyst, its contents become infected, and occasionally the wall ruptures. The infected contents of the cyst have a foul, rancid odor.

On microscopic examination of the intact cyst its wall is seen to be lined by flattened stratified squamous epithelium, the outermost row of basal cells of which is regularly applied to a perfectly straight basement membrane with no tendency to form interpapillary projections and without related accessory structures. If the fat droplets and cholesterol crystals of the cyst escape into the surrounding tissue, they set up a foreign-body reaction, featuring many multinucleated giant cells, in the cytoplasm of which phagocytized debris is commonly seen. A varying acute and chronic inflammatory cell infiltration and a variable amount of scarring occur about such cysts, depending on the amount of pre-existing inflammation. In cases with marked previous inflammation epithelial remnants may not be found. Both basal-cell and squamous-cell carcinomas are alleged to occur within epidermoid cysts; however, this is an uncommon complication.

Treatment consists of complete surgical excision. Best results are obtained when the uncomplicated cyst is excised intact. If rupture occurs during resection, care must be exercised to remove the entire cyst wall, and, if doubt remains, an escharotic may be applied to residual epithelium. A poor cosmetic result will follow; thus this treatment should be used only in those situations where this is not an important consideration. Infected cysts should first be incised and evacuated and then subsequently resected after complete healing has taken place. Post-traumatic epidermoids may be prevented by the exercise of meticulous care in debridement and suturing.

Dermoid cysts of the skin, by definition,

are congenital in origin and develop from a rudiment of skin which is carried into the tissues at the time of closure of the various embryonal clefts and fissures to which these cysts are related. For the most part they are relatively rare, occurring about the lateral angle of the palpebral fissure usually in the upper eyelid, in the scalp, and about the ear. The common variety is the pilonidal cyst located near the tip of the coccyx. It usually communicates with an inconspicuous mid-line skin dimple by means of an epithelium-lined sinus and is thought to represent either an inclusion defect in the closure of the caudal end of the embryonal neural tube or to be due to internal traction on the integument caused by regression of the tail bud. It has the characteristic structure of all true cutaneous dermoids. The cyst wall has an outer fibrous capsule and is lined by stratified squamous epithelium, with the normal papillary structure seen in the overlying skin. Skin accessories, such as hair follicles, sweat glands, and sebaceous glands, are present in variable numbers. The cyst is filled with cheesy sebaceous material, into which project hairs growing from the cyst wall.

Dermoids, particularly the pilonidal variety, are likely to become infected and, like sebaceous cysts, are best treated by complete excision. Owing to the fact that they lie deep in the loose subcutaneous fat, as they enlarge or rupture they may seed epithelial fragments outside the cyst wall, and these fragments form communicating sinuses which must be included in the resection. Since the pilonidal cyst commonly extends to the level of the sacral fascia, it should be treated by wide, deep, longitudinal, elliptical excision. Persistence of difficulty after operation can be ascribed to such factors as inadequate excision, improper reconstruction of tissues, or inadequate protection of the healing wound. Many detailed technics