The Clinical

Management of

VARICOSE VEINS

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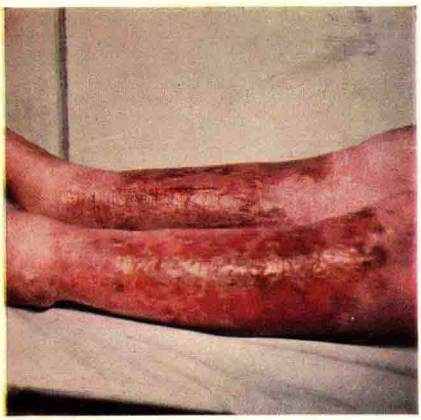

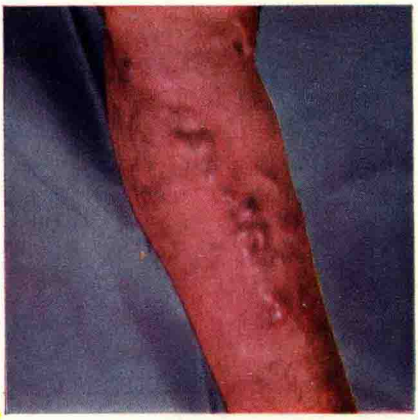

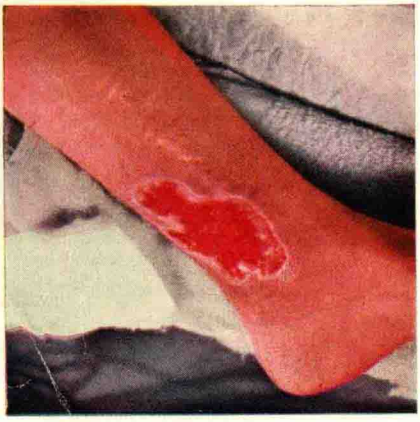

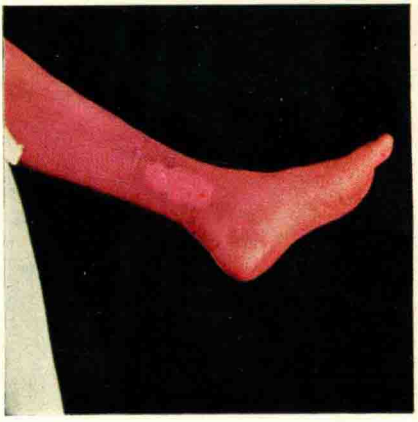

The morbidity of varicose veins is due to complications. Varicose eczema (*upper left*) with or without fungus infection may be most trying. Superficial thrombophlebitis (*upper right*) is a surgical emergency, since fatal pulmonary embolism is not unknown. Varicose ulcer (*lower left*) is a common cause of disability and requires correction of the underlying stasis for permanent cure. Response to proper treatment is prompt and completely satisfactory (*lower right*).

Dedicated to the memory of

JOHN EDWARD LANE, M.D.

FOREWORD

A man must pay some penalty for the pleasures and benefits derived from having elevated himself to the upright position. Thus, he has placed an added burden on certain structures and brought about pathologic states seldom found in quadrupeds. This basic developmental factor of evolution is further influenced by the stress and strain of the human race, as well as by the steady advancement of scientific endeavor to increase the life span.

The venous system of the lower extremities is nearly always adequate in youth, and seldom does one find abnormalities due to prolonged stasis or inflammation before the middle decades. The familial tendency in the development of incompetent and enlarged leg veins is acknowledged. There is, however, a marked occupational and biologic background that plays a greater role in this entity and its sequelae. Although many people of short or medium stature may have varicosities on the basis of previous inflammation of the deep veins and because of repeated pregnancies, the tall individual is more apt to become so afflicted by the normal activities of life and without the predisposing causes common to all.

It would appear that the most troublesome complications of varicose veins are seen in the underprivileged classes. This is probably due to the lack of adequate care that such people can or will obtain in the eariler manifestations of the process. They work longer hours, often standing, and cannot or do not heed warnings that send their more prosperous fellow citizens to the physicians. The grandmother at the hearthstone has suffered with varicose veins during her gravid periods as well as the mother, so that when the young woman complains of her lot, she is consoled by the fact that although her affliction is annoying it is apparently not fatal.

FOREWORD

In public clinics will be found a large group of victims with varicose veins, at *all* times. If by chance there is a physician in attendance who has a special interest in these cases, the news rapidly spreads so that in a short time the number of such persons seeking help will be multiplied. Although many doctors have devoted much of their time to these problems and contributed greatly to the relief of these sufferers, there is still room for improvement. Certainly, the situation is treated lightly by many physicians and scorned by many surgeons. The medical student often finds little effort made by his teacher to inform him of the problems as a whole.

This monograph by Dr. Barrow is not intended to cover the subject in its entirety. The author has quickly disposed of the historic, anatomic, and physiologic background of the subject and devoted his profuse illustrations and not too wordy text to the practical side of the various situations commonly seen by the practitioner. He has drawn from his vast clinical experience and from the writings of his predecessors and contemporaries.

This work is presented in a logical sequence and the emphasis placed on the best methods, so far developed, to relieve the patient. The reasons for failure and the dangers involved by inadequate understanding of the specific problem to be dealt with are made clear.

ARTHUR W. ALLEN

Boston, Mass.

PREFACE

to the Second Edition

Since publication of the first edition of *The Clinical Management of Varicose Veins,* advances have been made in the therapy of diseases of veins—varices, phlebitis, and the postphlebitic syndrome, including statis ulcer. As the numbers of our aged population increase, the toll of diseases of the veins threatens to continue as an important cause of disability. In this second edition, discussions of the more recent methods of treatment have been added with descriptions and evaluations of those methods.

The kind reception accorded the earlier edition of this book indicates that its approach, the presentation of precise, specific, and detailed information necessary in the treatment of diseases of the veins, has been successful. This new edition follows that same general pattern. Theoretical and controversial points are presented, but again the emphasis is on concise and graphic presentation of therapeutic procedures. Toward this end, not only has the text been brought up to date, but many illustrations have also been improved and additional figures have been supplied.

Certain methods of treatment are now commonly accepted. Subcutaneous removal, or "stripping," of superficial varicose trunks has become standard therapy. Immediate high ligation in patients with superficial phlebitis is now well accepted. Interruption of deep venous trunks in patients with the postphlebitic syndrome continues *sub judice;* but indications for this procedure are becoming clarified, and results are being evaluated.

The solutions of some problems remain undiscovered; little progress has been made in other directions. Methods for the repair, reconstruction, or substitution of incompetent valves in the deep veins have improved slowly. We must for the present time be content with

palliation rather than cure of associated disability. However, increasing experience brings increasing awareness of the degenerative nature of lesions of the veins and of the need for continuing follow-up and minor treatment if major recurrences are to be avoided.

I should like to thank Mr. Paul B. Hoeber for the efficient, helpful cooperation and personal courtesies he has shown me.

DAVID WOOLFOLK BARROW

Milwaukee, Wis.

PREFACE

to the First Edition

Interest in diseases of the veins has increased markedly, coincident with extraordinary progress in the treatment of patients so afflicted. The application of the combined principles of suitable ligation, excision, and injections has offered expectation of permanent cure in patients with varicose veins who were previously helpless and considered hopeless. Even when stasis ulcer has complicated over prolonged periods, complete recovery can be anticipated following correction of abnormal circulation.

Diagnosis and therapeutic procedures are not difficult, but exact, specific, and detailed information is necessary to treat such patients safely and adequately. Ligation of the femoral artery or careless interruption of the femoral rather than saphenous veins is entirely unnecessary and brings into disrepute procedures which are harmless when correctly applied. Mistakes made in vascular surgery are not easily remedied.

Varicose veins are the result of a derangement of hemodynamics, the result of increased venous and capillary blood pressure. In this monograph an attempt has been made to give a dynamic but concise and graphic picture of the changes which occur through the various stages of their development, and not merely detail the pathology seen resulting from these changes in the peripheral circulation.

Varices are most frequent in the leg, and when found elsewhere are usually the expression of more deep-seated pathology, which should be the object of therapeutic attack rather than the veins themselves. Varicose veins in the leg, on the other hand, form a disease entity which responds to treatment of the varices themselves. For

these reasons, this monograph is limited to a consideration of varicose veins of the leg.

The text is based on observations made on approximately 3,500 patients with varicose veins, or their records, and personal investigation in the laboratory, and not upon statements found in the literature. References are few and are usually limited to considerations of physiology or pathology which cannot be readily demonstrated by examination of the patient. Controversial points are minimized.

The text has been so planned that knowledge of preceding chapters facilitates the understanding of subsequent material, and, although a complete index has been compiled for reference, it is believed that the reader will profit best by beginning at the first page and reading consecutively. Theoretical considerations have been minimized for the sake of brevity and ease of reading, but where detailed knowledge of normal physiology is necessary to understand the production of pathologic changes and the patient's symptoms, clear and complete presentation, rather than condensation of subject matter, has been the goal. Specific therapeutic procedures have been described and pictured in detail and, while it is realized that other technics may be equally applicable, the ones pictured here are limited to those which have given satisfactory results in my hands.

It gives me great pleasure to express my appreciation to Dr. Alton Ochsner and his associates in the Tulane Medical School and to members of the surgical staff of the Massachusetts General Hospital for training received in those institutions. I am also grateful to Dr. Robert R. Linton for his comments on the treatment of varicose eczema and postphlebitic ulceration and his permission to include them in this monograph. To Dr. Arthur W. Allen, whose suggestions, considerate criticism, and kindness in writing the Foreword have added so much to the value of this monograph and without whose encouragement it would not have been completed, I owe an especial debt which I wish to acknowledge here.

DAVID WOOLFOLK BARROW

The Clinical Management of VARICOSE VEINS

CONTENTS

Chapter I.

History and Anatomy

The cause of the discomfort and disability due to varicose veins has been recognized since the earliest times. The great practitioners of healing through the ages have concerned themselves with this disease. Hippocrates is said to have advocated free incision into the overlying skin, perhaps trying to get rid of harmful humors or hoping that cicatrization would obliterate the varix. He forbade incision into the vein, for reasons which anyone who has seen the hemorrhage from traumatic rupture of a varix can understand. Celsus, in the first century A.D., went further and recommended cautery incision and avulsion of the diseased vein. Still later Aetius, in the sixth century, and Paulus Aegineta, in the seventh century A.D., sectioned the saphenous vein and observed that there were fewer collaterals in the thigh, so that section of the vein there seemed preferable to section in the leg. Subsequent authors suggested ever higher ligation until, in 1916, John Homans showed that the most effective method to prevent the establishment of harmful collateral circulation was ligation at the sapheno-femoral junction.

In 1801, Sir Everard Home, perhaps better known as a brother-in-

law of John Hunter, was the first to observe that dilatation of the vein made the valves incompetent, thus allowing the hydrostatic force of the entire column of blood to press backward. Brodie, in 1846, and Trendelenburg, in 1890, noted that there might even be retrograde flow of blood from the femoral into the saphenous vein, an observation anticipated several centuries before by Paracelsus, who had reported a patient with so large a varix that he fainted when it filled from above as he stood up. This reaction was eliminated by obliteration of the varix by external compression. More recently, Landis and others have explored fluid and electrolyte exchange through capillary walls and provided a more exact understanding of the changes which occur in patients with severe varicose veins.

Following the development of the hypodermic needle in 1851 by Pravaz, it was noted that the injection of corrosive sublimate in the treatment of syphilis resulted in obliteration of veins; however, solutions used at first were too caustic and painful for the routine treatment of simple varicose veins. The introduction of milder intravenous solutions in 1911 by P. Linser was followed by much better results, and the method was widely acclaimed. This optimism, however, was dampened by the evidence of frequent recurrence, and, in 1927, Moszkowicz, of Vienna, again advocated ligation followed by injection, a method which has been used widely with much success. Subcutaneous removal of long segments of incompetent veins, or "stripping," first popularized in the early nineteen hundreds, has again become a widely advocated method of treatment, and in those patients in whom the deep veins have been damaged by preceding phlebitis, ligation of deep veins has been advocated by Homans, Bauer, and others and the ligation of incompetent communicating veins, by Linton. The importance of control of residual edema by postural exercises and external elastic compression, and attention to serum protein levels has been emphasized by Barrow.

Gross Anatomy

Varicose veins are limited to the superficial veins of the lower leg. Due to the firm support of the surrounding tissues, deep veins rarely become incompetent, except following deep thrombophlebitis (see page 25); a clinical study of varicose veins thus becomes a study of the superficial venous system and its anastomoses. The long saphenous system is the larger and clinically more important in man, but phylo-

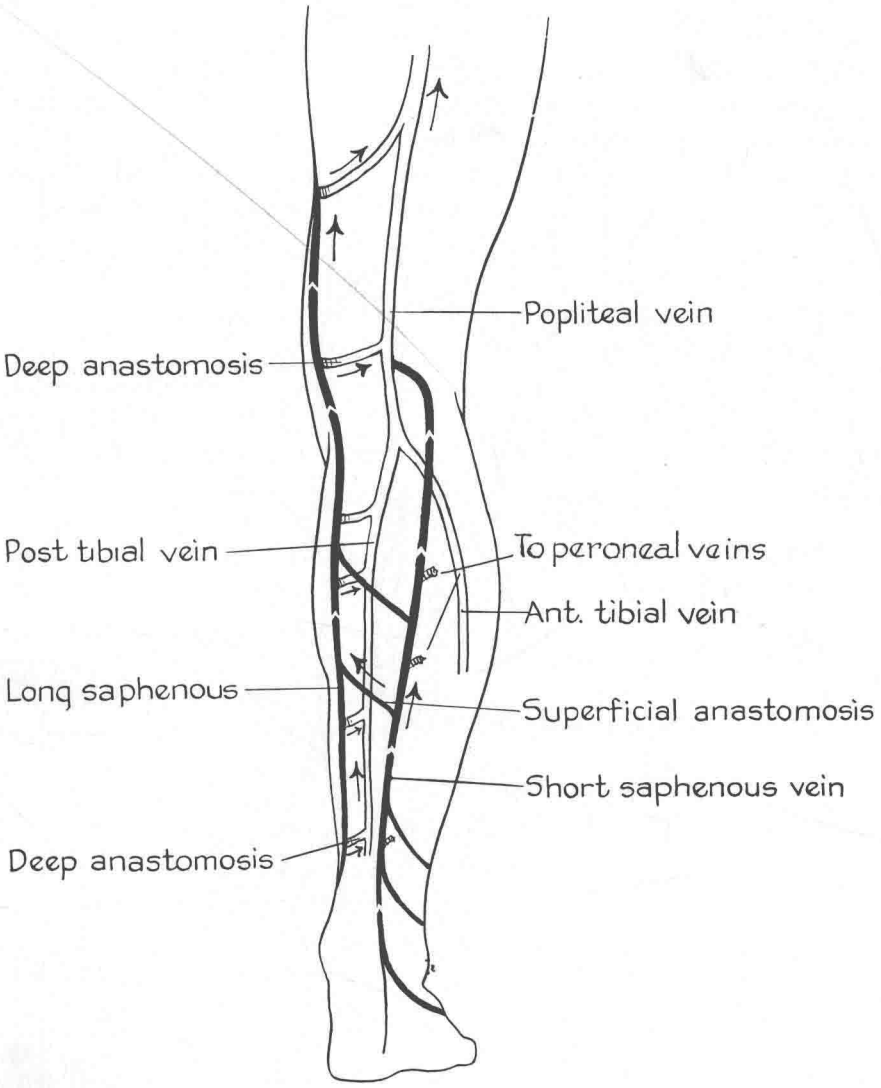

Fig. 1. The short saphenous vein emptying into the popliteal vein exclusively (occurs in 57.3 per cent).