CHRONIC VENOUS LEG ULCERS

Thesis
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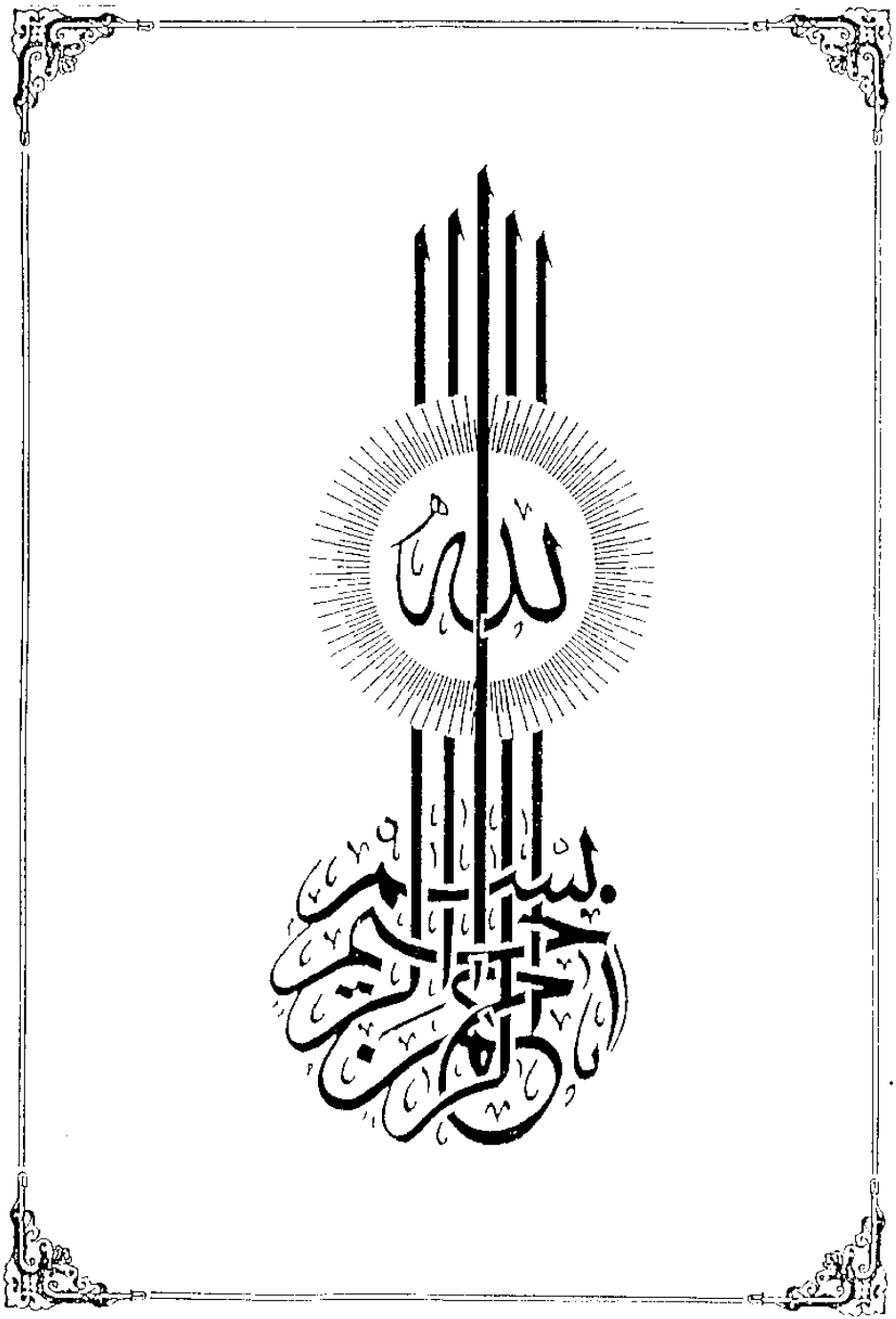

CONTENTS

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I N T R O D I C T I O N

" Doctor, what can you do about this ulcer I have on my lower leg?" is a question any doctor can meet during his practice.

Leg ulcers are often a perplexing problem. While certain causes of leg ulcers will be recognised by specialists, competent in certain fields, other types might be misdiagnosed. Internists; surgeons, dermatologists, and general practioners, as well as podiatrists and orthopoedic and plastic surgeons are all interested in or caring for patients with leg ulcers. The internist dealing with peripheral vascular disorders is confronted with deciding if the ulceration is due to either arterial or venous insufficiency, which are most common, or perhaps to an infectious agent (bacterial or fungus), tumour, underlying metabolic disorder, etc. The dermatologist, who is trained to recognise the cutaneous manifestation of internal disease, will often recognise that the typical lesions of necrobiosis lipoidica diabetcorum are clues to underlying diabetes mellitus, or that the fungating ulceration could be a deep fungus infection or pyoderma gangrenosum and he will search for chronic ulcerative colitis. The dermatologist will frequently use a simple procedure of skin biopsy to help him establish the proper diagnosis of the leg ulcer. The surgeon is

often consulted by a patient with a chronic ulceration of the leg because the patient needs either a skin graft or possible arterial surgery. The surgeon must be aware of the many conditions, other than vascular lesions, which may produce the leg ulcer and for which skin grafting may not be the treatment of choice.

Because of the many problems involved in arriving at a proper diagnosis of leg ulcers, a diagnostic evaluation and a comprehensive classification is hereby discussed (Roenigk and Young 1975).

History:

Since many leg ulcers have certain characteristic features, a comprehensive history of the ulcer, obtained through the following questions, is necessary in order to establish a proper diagnosis:

1. What did the ulcer look like at first?

Leg ulcers often change their oppearance after secondary infection or after the application of many types of local medication which may have been used in attempt to heal the ulcer.

2. What started the ulcer?

Local injury, strong medication, infection, thrombophlebitis, cold and factitial (self-induced)

injury may be factors in precepitating the ulceration.

3. What is the family history?

This is particularly helpful in certain hematological disorders (Sickle-cell anemia or thalassemia) and certain connective tissue disorders (systemic lupus erythematosus or rheumatoid arthritis).

4. How quickly did the ulcer develop?

Rapidly developing ulcers suggest venous insufficiency; slowly developing ulcers suggest arterial insufficiency or malignancy.

5. How painful is the ulcer?

Stasis ulceration are often painless, whereas arterial ulcers are very painful. The patient with ischemic ulceration due to arterial insufficiency often will sit in a chair all night and not elevate his legs because the dependent position gives him the most possible blood supply to his painful ulcer. Venous ulceration, on the other hand, often improves with elevation because this position relieves the oedema of the surrounding tissues.

6. What drugs has the patient taken?

It is important to obtain a complete list of all medications taken by the patient. Specific questions

concerning non-prescription medications such as sedatives, sleeping pills, and analgesic antacid medications should be included, since these drugs are often a cause of leg ulcers.

7. Is there a history of other systemic disorders?

A current or past history of anemia, rhermatoid arthritis, collagen diseases, etc., often gives a clue to the etiology at an unusuall leg ulcer.

Physical Examination:

1. Where is the ulcer?

Ulcers due to stasis dermatitis are often located over the internal malleolus because this area is drained by the saphenous venous system (as well be discussed later). Ischemic ulcers occur on areas farthest from the occluded vessel. The common location for ischemic ulcers due to arterio-sclerosis is the toes or dorsum of the foot. Hyertensive ischemic ulcers tend to occur on the lateral malleolus.

2. What is the condition of the surrounding skin?

The surrounding skin should be closely examined for stasis pigmentation, presence or absence of arterial pulsation, evidence of scleroderma, petechia, hemorrhage,

etc. The colour of the skin is important. A pale colour indicates poor arterial blood supply, as in ischemic ulcers.

3. Are there signs of other systemic diseases?

A heart murmur of cardiovascular syphilis, arthritis due to systemic lupus erythamatosus, or other signs of diabetes mellitus (i.e. eye - ground changes) are helpful in determining the cause of the leg ulcer.

Laboratory Tests:

The following tests are divided into two groups. The first group of tests should be done for any leg ulcer. The second group of studies is specifically for the more unusual types of leg ulcers.

I- Routine laboratory tests:

Hemoglobin.

White blood count.

Urinalysis.

Blood sugar.

Chest X ray.

Bacterial culture.

Serological test for syphilis.

II- Special laboratory tests:

Lupus erythematsus test.

Antinuclear factor.

Latix fixation for rheumatoid arthritis.

Sickle cell preparation.

Special hematological tests.

X rays - arteriogram.

venogram.

lymphangiogram.

colon.

Fungus cultures.

Skin tests - PPD.

deep fungus.

Serum paper electrophoresis.

Urinary porphyrins.

Uric acid.

Skin biopsy.

Muscle biopsy.

CLASSIFICATION/ (Roenick & Young 1975)

The following outline gives the various classifications at leg ulcers:

I- Vascular:

A. Arterial:

1. Thromboangiitis obliterans.
2. Arteriosclerosis obliterans.
3. Livedo reticularis.
4. Hypertension.
5. Chronic pernio (chronic chilblains).

B. Venous - chronic venous insufficiency.

C. Lymphatics - elephantiasis nostra (lymphedema).

II- Vasculitis:

A. Atrophic blanche.

B. Allergic vasculitis.

C. Lupus erythematosus.

D. Necrotizing angiitis.

E. Periarteritis nodosum.

F. Rheumatoid arthritis.

G. Degos disease.

III- Hematologic:

A. Sickle cell anemia.

B. Spherocytic anemia.

C. Thalassemia.

D. Polycythemia vera.

E. Leukemia.

F. Dysproteinemia.

IV- Infections:

A. Fungus:

1. Blastomycosis.

2. Coccidiomycosis.

3. Histoplasmosis.

4. Sporotrichosis.

5. Maduromycosis.

B. Syphilis.

C. Bacterial infections.

D. Tuberculosis:

1. Erythema induratum.

2. Lupus vulgaris.

3. Papuloneerotic tuberaclid.

V- Metabolic disorders:

A. Diabetic ulcer.

B. Necrobiosis lipoidica diabeticarum.

C. Pyoderma gangrenosa.

D. Gaucher's disease.

E. Gout.

F. Porphyria cutanea tarda.

VI- Tumours:

A. Basal cell carcinoma.

B. Squamous cell carcinoma.

C. Kaposis henarrhagic sarcoma.

D. Lymphoma:

1. Lymphosarcoma.

2. Mycosis fungoides.

VII- Miscellaneous:

A. Drugs:

1. Halogens.

2. Ergotism.

3. Methotrexate.

B. Chemical burns.

C. Trophic ulcers.

D. Thermal.

E. Lichen planus.

F. Weber - christian Disease.

G. Achrodermatitis chronica atrophicans.

H. Insect bite.

I. Radiation.

J. Frostbite.

K. Factitial (self - induced).

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Frequency of occurance of each type (Taylor - and Cotton 1973):

Venous	75%
Arterial	5%
Traumatic	10%
Miscellaneous	10%

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D E F I N I T I O N

Stasis ulcer is a distressing and disabling complication of chronic venous insufficiency, known since ancient times and yet often ineffectively treated even in modern times. It is common, reputedly afflicting 500.000 persons in United States alone (Lofgren 1965) and 250.000 persons in Great Britain (Taylor and Cotton 1973). Since many patients are disabled, the economic loss from this affliction is high.

By definition, stasis ulcer is an open defect in the skin and subcutaneous tissues brought on by venous congestion. (Lofgren 1965) Synonyms are varicose[1], postphlebitic, indolent, gravitational[2], venous[3] and simply leg ulcer, but the term "stasis ulcer" seems more accurate since it describes better the basic underlying condition.

Effective treatment has at times been delayed by the patient because of neglect or indifference. Various local remedies applied to the lesion have usually produced no lasting benefit (it is simple to heal an ulcer of the leg; the difficulty is to keep the ulcer healed: "Taylor and Cotton 1973").