Treatment of liposclerosis of the leg by fibrinolytic enhancement: a preliminary report

N L BROWSE, P E M JARRETT, M MORLAND, K BURNAND

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Summary

Fourteen patients with longstanding lipodermatosclerosis of their lower legs, secondary to venous disease in 11, were treated for three months with stanozolol, a drug that enhances fibrinolytic activity. No other treatment was given and no change made in existing treatment. All the patients improved. Two were cured in three months, three were able to stop treatment in the next three to 11 months, and the other nine continued to improve.

Fibrinolytic enhancement, with stanozolol, seems to be a worthwhile addition to the treatment of venous liposclerosis and deserves further study.

Introduction

Burnand *et al*¹ have shown that prolonged venous hypertension causes fibrinogen to leak from the dermal capillaries and form an impervious fibrin cuff around these vessels, which may be the cause of venous ulceration. They have also shown that the blood of patients with postphlebitic lipodermatosclerosis has depressed fibrinolytic activity.^{2 3}

It seemed possible that the enhancement of these patients' blood fibrinolytic activity might help in removing the extra-vascular fibrin and improve the nutrition of the affected skin. We present here the results of a pilot study of this form of treatment.

Patients and methods

Fourteen patients (four men and 10 women, mean age 49.3) were treated. All had areas of pigmentation, induration, and tenderness over the inner aspect of the lower leg that had not responded to treatment with elastic support bandages or, in most cases, surgical treatment of associated varicose veins. The symptoms and signs of liposclerosis had been present for a mean of eight years (range 2-30 years).

Eight patients had phlebographic evidence of a deep vein thrombosis and had had their long saphenous veins ligated and stripped, and five had also had their lower medial incompetent communicating veins ligated. Three patients had no evidence of deep vein thrombosis, but their varicose veins had been treated by long saphenous vein ligation and stripping.

Four of the 11 patients with evidence of venous disease had venous ulcers when they began treatment, and another six had had their ulcers healed sometime before starting treatment. Three patients had no clinical or phlebographic evidence of venous disease.

The fibrinolytic activity of the blood before and each month during treatment was assessed by measuring the dilute blood clot lysis time

(DBCLT),⁴ the fibrin plate lysis area (FPLA),^{3 5} and the plasma fibrinogen level.⁶ In some patients hand vein tissue fibrinolytic activity was measured.^{3 7} All patients were given stanozolol, 5 mg twice a day, by mouth.^{8 9} No other changes were made in their treatment.

The effect of treatment on the liposclerosis was assessed objectively, by mapping out the area of induration and recording it on graph paper, and subjectively, by asking the patient if there was any change in the texture or pain in the abnormal tissues.

Results

The table shows the blood fibrinolytic activity of the 14 patients before and after three months' treatment with stanozolol. All the values were abnormal before treatment and showed a significant improvement.

Change in blood fibrinolytic activity in 14 patients with venous liposclerosis after 3 months' treatment with stanozolol

Test (mean)	Levels before treatment	Levels after 3 months' stanozolol	Significance of difference (P)
DBCLT (min)	602	192	<0.05
FPLA (mm ²)	219	402	<0.05
Plasma fibrinogen (g/l)	3.89	3.21	<0.05

The mean area of liposclerosis before treatment was 219 cm² (range 26 to 639 cm²). After three months' treatment this had reduced to 58 cm² (range 39 to 155 cm²). This 73% reduction in area was significant (P=0.02). In two patients who had had symptoms for two years and 10 years the tenderness and thickening completely disappeared within three months.

All patients stated that their legs had become less painful, the affected skin softer, and the pigmentation less noticeable. Four patients had venous ulcers when treatment began. After three months one ulcer had healed, two had decreased in size, and one had not changed. Thus there was no evidence that stanozolol, which is a steroid, had any deleterious effect on ulcer healing. Three of the original 14 patients continued their treatment for a further three to 11 months, until the liposclerosis was "cured." At the time of writing (after a mean of 9.4 months) the condition has not recurred in these patients. Nine patients continued to improve on treatment.

Side effects—Six patients gained 3.2 kg during the first month of treatment but their weight then remained steady. One patient put on weight continuously during treatment. Two patients developed mild androgenic side effects, a slight loss of hair, and acne. Six patients had intermittent minor attacks of cramp while on treatment, and migraine was induced in three patients who had previously suffered from this condition. No patient developed abnormalities of liver function tests.

Discussion

We think these results are sufficiently encouraging to justify a preliminary report to stimulate others to assess this treatment. We must emphasise that stanozolol seems to improve the pain, the induration, and the thickening, but does not affect the rate of healing of coexisting ulcers. This pilot study does not justify any definite scientific conclusions because it was not a blind study for the patient or the doctor, and some of the methods of assessment and the comparisons with unmatched control subjects are open to criticism. Nevertheless, the surprising improvement in symptoms and signs has stimulated us to set

Department of Surgery, St Thomas's Hospital, London SE1

N L BROWSE, MD, FRCS, professor of vascular surgery

P E M JARRETT, FRCS, DOBSTRICOG, senior surgical registrar

M MORLAND, BSC, technician

K BURNAND, MB, FRCS, senior surgical registrar

up a double-blind crossover controlled trial, the results of which we hope to publish during 1977.

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CONDENSED REPORTS

Amaurosis fugax and carotid artery disease: indications for angiography

L A WILSON, R W ROSS RUSSELL

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Summary

A prospective study of 80 patients presenting with amaurosis fugax was performed in an attempt to relate clinical features to angiographic findings in the internal carotid artery. Carotid bruit, transient cerebral ischaemic attacks, hypertension, and claudication were associated with a high prevalence of angiographic abnormality. Every patient who showed all these features had an operable lesion, as did 88% of those who had three features. In patients over 50 years of age carotid stenosis and atheromatous ulceration were occasionally found in the absence of bruit and transient cerebral ischaemia, but only one patient aged under 50 had an operable lesion and no associated features. Clinical features were therefore valuable in predicting the outcome of angiography, but it seems prudent to restrict angiography to patients aged over 50, who are most likely to benefit from surgery on the carotid artery.

Introduction

A brief episode of visual loss in one eye (amaurosis fugax) is usually caused by a transient reduction in the ocular blood supply. Fisher¹ first drew attention to the occurrence of this symptom in some patients who also had transient or permanent hemiparesis on the contralateral side. He showed that the underlying abnormality in these patients was in the internal carotid artery, which was either occluded by thrombus or narrowed by atheroma. Subsequent reports have indicated two possible mechanisms. The carotid artery may be the site of origin of

emboli to the ocular or cerebral circulation,² or the low perfusion pressure distal to an occlusion may render the eye vulnerable to ischaemia should there be a temporary reduction in systemic blood pressure.³

Since amaurosis fugax may precede a permanent cerebral deficit, and since stenosis of the carotid artery is amenable to surgery, Fisher's observations have stimulated a policy of active clinical investigation in the hope of preventing cerebral infarction. In many centres carotid angiography is routinely advised in all such patients in the search for a carotid lesion which can be treated surgically.⁴⁻⁶ But such a policy has several disadvantages. Firstly, many patients with amaurosis fugax do not subsequently develop a permanent deficit, either cerebral or ocular, and the proportion of such "benign" cases has been variously estimated at 40% to 84% of the total.⁶⁻⁷ Secondly, some patients with amaurosis fugax show no radiological abnormality in the carotid artery.⁸ Presumably the disturbance in ocular circulation in these patients is due to emboli from the heart or proximal great vessels, transient reductions in cardiac output, or other factors such as vasospasm or abnormal platelet or coagulant activity. Thirdly, even when a carotid lesion is found, surgical treatment is not always effective, although most controlled trials have shown fewer transient cerebral ischaemic attacks and completed strokes in patients who have undergone operation.⁹

We performed a prospective study to clarify the second question—the frequency with which angiography shows an abnormality amenable to surgical treatment in patients with amaurosis fugax—and so to provide simple clinical guidelines about investigating this common and alarming symptom.

Patients and methods

Eighty consecutive patients who presented for the first time with uniocular amaurosis fugax to a general hospital, an eye hospital, or a neurological hospital were studied. The study was prospective and continued over three years. Amaurosis fugax was defined as an episode of uniocular visual loss of less than four hours' duration which left no residual impairment either of visual field or visual acuity.

Angiography was performed in 67 patients. One patient refused the investigation, and 12 were excluded: in seven angiography was judged to be hazardous on grounds of age, severe hypertension, or severe coronary artery disease in older patients; and five patients had an alternative basis for these attacks, such as polycythaemia or cardiac valvular disease. All patients underwent electrocardiography and

Department of Neurological Studies, Middlesex Hospital Medical School, London W1

L A WILSON, MB, MRCP, research assistant

St Thomas's Hospital, and Moorfields Eye Hospital, London

R W ROSS RUSSELL, MD, FRCP, consultant physician