not included in this series. Some of the cases were not completely cleared by two baths, and these had to have a third application of the treatment; a few had four applications. The numbers, however, were very small: in 28 cases three baths were required, and in 3 cases four baths.

Owing to the possibility that dermatitis, present as the result of treatment, might persist, it was necessary to adopt some kind of follow-up, and the following form was forwarded to the regimental medical officer for completion seven days after the man's return to his unit.

SUBJECT: SCABIES " FOLLOW-UP "

To: M.O. i/c
Reg. No. Name Rank
The a/m man was discharged from the Camp Reception Station, on
....., having been treated for scabies. I should be very grateful if you would examine him on
..... and return the attached proforma. It is recommended that one week's treatment of calamine lotion be given.

Lieut.-Col., R.A.M.C., O.C., Field Ambulance.

To: Camp Reception Station, Tel.
Name Number Rank
Condition of skin (is there any dermatitis?)
Is there any irritation? If so, where?
Do you consider there is any recurrence of scabies?
Date Signature

Excellent co-operation was given by the R.M.O.'s concerned, and in only a few instances was it necessary to send out reminders.

The following Table shows the numbers treated and the percentages of recurrences and incidence of dermatitis:

Treatment	No.	Cures	Recurrences	Dermatitis
Benzyl, meth.	527	519	8 (1.56%)	6 (1.2%)
Benzyl, aqueous	448	447	1 (0.24%)	14* (3.1%)
Thiosulph. + HCl	24	24	1 (4.0%)	1 (4.0%)

* 11 of these occurred at a time when it was impossible to obtain *sapo moll.* B.P., so a brown soft soap issued by the O. i/c Barracks was used instead. This I think definitely contributed to the incidence of dermatitis. This soap was not used in the preparation of the spirit emulsion.

Conclusions and Summary

One thousand cases of scabies were treated, half with an aqueous and half with a spirit emulsion of benzyl benzoate. It would appear from the results that the aqueous is as efficient as the spirit emulsion. The advantages as regard cost are obvious.

The amount of dermatitis is slightly higher and the incidence of recurrence very much lower. There are a few general points worth noting about the cases sent in for treatment. The incidence of penile, abdominal, and thigh lesions is amazingly high—79%—and the fact that only one case had the lesion confined to the interdigital spaces bears out the theory that most people consider that the disease is due to close body contact. This is also borne out by the fact that the majority of these men gave a history of having returned from leave during the previous 7 or 8 days or admitted recent venereal contact.

K. Mellanby (*British Medical Journal*, 1941, 2, 405) states that the possibility of the spread of scabies by means of blankets was very remote and that the spread by underclothes was possible under conditions which appear to offer the maximum chance of infection. It is hoped that these conclusions will be further tested, so that this point can be cleared up. If what he states is true then surely the amount of time, labour, and money spent on the disinfection of clothes is useless.

I should like to thank all the medical officers who have helped in this investigation for their assistance, and also to pay tribute to the nursing orderlies whose work made the above results possible.

W. N. Warvi and R. W. Rawson (*Arch. int. Med.*, 1942, 69, 90) record a case of torula meningitis in a man aged 39 in whom the characteristic symptoms were the insidious onset and the intermittent but progressive course, going on to a fatal termination. The increasing intracranial involvement caused the following symptoms: severe headache, visual, sensory, and motor disturbances; weakness; projectile vomiting; disorientation; coma; and respiratory failure. The case is the eighth reported example of the association of Hodgkin's disease with torula meningitis.

TREATMENT OF VARICOSE VEINS IN SOLDIERS

BY

ERIC L. FARQUHARSON, M.D., F.R.C.S.Ed.

Major, R.A.M.C.

The treatment of varicose veins by injections alone presents many difficulties when it is applied to military patients. In the first place, it is common for the affected veins to show the condition of *ectasia* rather than true varicosity, and veins of this type do not respond at all well to injection methods. Secondly, regular or systematic treatment is often quite impossible, owing to the continual movement of troops, re-postings, etc. A large proportion of soldiers reporting sick with varicose veins have had a few haphazard injections at irregular intervals; these may have had no effect whatsoever, or the benefit conferred was only temporary—a fact that has not escaped the soldier's notice and encourages him to distrust or to refuse further injection treatment.

Any form of operative treatment recommended must be considered in the light of its effect on the man's efficiency as a soldier, and precedence must be given to the method which is most likely to make him fit for full duty within the shortest possible time. Extensive radical excisions (Payne, 1941) have no place in the treatment of military patients. Apart from the long period of convalescence required, the scars which remain often form a basis for continued complaints.

The Trendelenburg operation, when it is not combined with injection, is frequently most disappointing. There may be little or no diminution in the size of the varices, or, alternatively, any improvement noted may be only temporary, as the affected veins dilate again, owing to the opening up of collateral anastomoses with the deeper channels. When combined with injection, the Trendelenburg operation has many advocates, and a 90% cure has been claimed (Oldham, 1941) for this method of treatment. Many workers, however, including the writer, have not been so successful in the results obtained, in that the thrombosis is apt to be incomplete and patchy in distribution. Furthermore, a formal Trendelenburg operation is not to be undertaken lightly, and there is no question that military patients must be admitted to hospital.

Subcutaneous Ligature combined with Injection

The accompanying photographs illustrate this method. In the case treated the varicosity involved the whole of the great saphenous system and had been present for 12 years. Complete thrombosis of all the dilated veins was obtained from one treatment.

In the method of subcutaneous ligature, a stitch is passed round the vein, and is tied over a swab placed on the skin surface. Except in cases where the varicosity extends right up to the saphenous opening (see below), the vein is ligatured at its highest visible or palpable point. This may be situated in the thigh (often at the junction of the upper and middle thirds) or at the medial side of the knee. In the former case a second ligature is applied at knee level. Very occasionally a third ligature is required.

An injection of sclerosing solution is made into the vein immediately below each ligature. The injected fluid takes effect in a "closed" and relatively small segment of vein, where the blood is almost completely stagnant and there is no dilution from backflow. As the result an effective thrombosis is invariably obtained.

Technique of Ligature.—The ligatures are most easily applied with the patient standing up. Silkworm-gut, threaded on a fairly fine curved skin needle, is employed. The needle is passed round the vein, transfixing the skin about 1/4 in. on each side of it, and the gut is tied over a small roll of gauze the thickness of a finger. A local anaesthetic is quite unnecessary.

Injection.—On the suggestion of Lieut.-Col. S. Sokolowski of the Polish Army Medical Corps, 20% saline solution has been used. This has the great advantage of being readily obtainable, and it has been most effective. Up to 50 c.cm. can safely be injected at one treatment, so that a widespread

thrombosis can usually be obtained. Ten to 20 c.cm. is injected below each ligature, the amount depending upon the extent and varicosity of the veins under treatment. Cramping pain is felt in the limb about 15 seconds after injection; it may be fairly severe for 30 seconds, but usually passes off completely within 2 minutes.

If the dilatation extends right up to the saphenous opening, subcutaneous ligature is impracticable; an open ligature is therefore carried out, but no widespread dissection is attempted. The vein is exposed by a 1/2-in. incision at its highest point, and is divided. Ten to 20 c.cm. of saline solution is injected into the cut lower end before this is ligatured.

After-treatment.—The presence of the ligatures *in situ* causes comparatively little discomfort, and, considering the extent of the thrombosis produced, the reaction is not severe. It is customary, therefore, to return the patient to his unit, with a recommendation that he be excused all duties for 48 hours, and that he be kept on light duty until he reports back for removal of the ligatures in 7 days' time. Patients whose veins are very dilated are detained in hospital for one or two nights. During this time the limbs are firmly bandaged to compress the veins and to reduce the size of the ultimate thrombosis. Open ligature of the vein at the saphenous opening does not necessitate hospitalization provided that, in contrast to a formal Trendelenburg operation, it is done through a small incision and no extensive dissection is attempted. After removal of the ligatures a further period of light duty may be required, depending upon the reaction present, but most patients can return to full duty within two weeks of the original treatment.

Results of Treatment.—The immediate results are excellent. Of 150 soldiers treated by this method the great majority required only one treatment for each affected limb. About half the patients had two ligatures applied—one in the thigh and one at knee level. The rest, in whom the varicosity or ectasia did not extend above the knee, were treated by a single ligature at this level. As already stated, most of the patients returned to full duty within 2 weeks of the original treatment. The late results cannot at present be assessed, owing to the difficulties of follow-up in Service patients. It has not been possible to re-examine more than 30 patients, and these at intervals of from only 2 to 9 months after treatment. In these, however, the affected veins had all contracted down to hard slender cords, in which any possibility of re-canalization seemed to be quite out of the question.

Discussion

It is maintained that the method of subcutaneous ligature combined with injection is particularly suitable to the treatment of military patients, in whom injections alone are unsatisfactory and all forms of radical operation are contraindicated.

The method is not, of course, a new one (Russell, 1941; McCurich, 1941), and I am aware that it has been extensively criticized (Eckhoff, 1941; McAusland, 1941; Schick, 1941; Oldham, 1941), mainly on the grounds that the saphenous vein cannot be ligatured at its highest point. Treatment by ligation at any lower level is stated (Schick, 1941) to be followed eventually by as high a percentage of recurrences as after simple injections alone, and it has suffered the sweeping condemnation (Oldham, 1941) that it is as futile as would be the removal of the distal half of a hernial sac. The first assertion is at least open to question; the second can be categorically denied. Complete thrombosis of all dilated veins in the great saphenous system can usually be obtained at one treatment by two well-placed ligatures with an injection below each. Most patients return to full duty within two weeks of treatment, and hospitalization is rarely necessary. No claims are made regarding the late results. Fresh varices may undoubtedly develop in the years to come, as they may with any form of treatment. It is suggested that this, like other post-war problems, does not require serious consideration at the present time.

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 McAusland, S. (1941). *Ibid.*, 1, 763.
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 Oldham, J. B. (1941). *Ibid.*, 2, 357.
 Payne, R. T. (1941). *Ibid.*, 2, 533.
 Russell, H. S. (1941). *Ibid.*, 1, 626.
 Schick, N. (1941). *Ibid.*, 2, 67.

FIG. 1.—Showing the extent of the varicosity.

FIG. 2.—Subcutaneous ligatures at A and B. The first injection was given as shown, and the second at the point marked C. 20 c.cm. of 20% saline was injected in each situation.