VARICOSE VEINS: INDICATIONS AND CONTRAINDICATIONS TO INJECTIONS

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Major complications following the injection treatment of varicose veins are occurring with such frequency, that the call for a voice of warning is imperative. It is unfortunate when such cases are concealed, or divulged under the cloak of confidence. These accidents have been preventable. On the other hand, there are sufferers who are being denied treatment because of timidity based on ignorance. It is not right to deny help to patients for reasons based on prejudice; it is wrong to treat them at a serious hazard.

Buerger's disease (thromboangiitis obliterans) is frequently associated with varicose veins. There is an increase not only in the recognition of cases, but an actual increase in the number of cases occurring. It is an absolute contraindication to the injection treatment. It is easy to see the varicose veins and fail to recognize the early stages of an underlying thromboangiitis obliterans.

Dr. Leo Buerger reports to me a moderately early case of Buerger's disease in which injections of the varicose veins, performed by another physician, were followed at once by gangrene of both legs up into the thigh, necessitating bilateral high amputation!

Preliminary examination must not only include inquiry as to intermittent claudication, but also determine whether there is pulsation in the artery dorsalis pedis and artery tibialis posterior. In doubtful cases Samuels' test should be made, wherein the leg is elevated to an angle of forty-five degrees, and the ankle alternately flexed and extended while blanching of the plantar surface of the foot and pain in the calf are ascertained.[1]

Elderly Patients.—Elderly patients are a large group. Men over sixty-five years of age comprise one out of every five male patients entering the clinic at the Los Angeles General Hospital, and one out of every ten of the total number of patients. They contribute the largest number of patients rejected. A vigorous elderly patient in good health may have his varicose veins injected but when to the senility is added some other serious handicap, danger is encountered.

Such an added handicap is senile arteriosclerosis of the legs—evidenced by lack of pulsation in the artery dorsalis pedis and the artery tibialis posterior—that I am strongly opposed to injection of the varicose veins of such patients. In many of these the pain is not due to the veins which are before their eyes, but to the arterial disease which they cannot see. I have had such patients tell me that they must have relief and found on further questioning that the pain was largely in the limb in which there were few,

if any, varicose veins. In the limb with serious varicose veins there may be no pain at all. To occlude the vein in the presence of a gradual occlusion of the artery, is an entirely different story from ligation of the vein in the presence of a sudden occlusion of the artery. The logic and results of occlusion of the vein in the presence of gradual, not sudden, occlusion of the arteries, has been discussed unfavorably by Brooks[2] and by Lipschutz.[3] Aged folk, if their pain is due to the vein, can usually wear a linen-mesh bandage and be comfortable. Often there is impending gangrene of the feet. If gangrene, or phlebitis, or embolism follows treatment, the injection will be blamed.

Mr. F., aged sixty-eight, seen in consultation, had large varicose veins in both legs, containing small thrombotic and calcareous masses. He had severe pyorrhœa so that pus exuded from the gums on the slightest pressure. I refused to countenance the injection treatment of this patient. Two days later he developed a violent acute phlebitis with hyperpyrexia, and, for days, death seemed imminent. If his veins had been traumatized by injection, I believe a fatality would have been inevitable with death laid to the door of the injection treatment. As it was, he recovered, and as frequently happens in this particular type of case, the phlebitis obliterated the varicose veins.

Mrs. B., aged sixty-eight, a patient of Dr. I. W. Lynn, had very large varicose veins of the right leg. The artery dorsalis pedis and artery tibialis posterior had no pulsation. When pressure with the finger on the foot was released, color returned at the site of pressure slowly. There was no other apparent abnormality. Doctor Lynn refused to inject the veins. Just eight days later this patient who had not been injected was seized with a sudden pain in the leg. The great saphenous vein became thrombosed to the upper third of the thigh. The leg turned blue to the knee. Cyanosis deepened. There was no fever but a rapid pulse. Gangrene developed, necessitating high amputation.

Let the reader examine some of these cases with high amputation before his eyes, before he decides he is willing to inject the veins of the patient with absent pulsation in the artery dorsalis pedis and artery tibialis posterior.

I admit that Delater, Jentzer, Paul Linser, and Meisen sometimes allow injection even if there is senile arteriosclerosis in the legs. Reichert[4] has advocated injection for such cases. Delater reports cases to me in which the spasm was relieved by injecting the veins, adding that the effort is futile if the endarteritis is obliterating.

On the other hand, Forestier and Gaugier agree that senile arteriosclerosis of the leg is an absolute contraindication.

Simple debility added to old age may constitute a contraindication. Linser's only fatality was in such a case.[5] Other factors, added to old age, contraindicating injection, may be diabetes or a very high blood-pressure, a history of embolism or thrombosis in coronary or cerebral arteries, or severe focal infection.

Distant Foci of Infection.—I have previously warned[5] that phlebitis may be of metastatic origin from infection, acute or chronic, in the pharynx or mouth, and favored the removal of chronically infected tonsils and root abscesses under devital teeth, before injection, lest infection from them,

carried in the blood-stream, set up a phlebitis in veins, traumatized by injection. However, a more liberal position is justified. I was influenced by Gaugier who wrote me two years ago: "After making 300,000 injections we do not believe that infection of the teeth, tonsils, etc., could constitute a contraindication to the sclerosing method. We pay no attention to them." Clinical experience has forced me to Gaugier's position. I have had two cases of phlebitis following injection in which, so far as could be determined, there was no focus of infection. On the other hand, in about four thousand injections in patients who did have foci of infection which were not removed, not a single case of phlebitis developed.

Where there is a past history of phlebitis, not otherwise explained, where there are symptoms of toxic absorption such as rheumatic pain, when the patient is weak or aged—it may be safe to insist upon the elimination of such foci of infection. In other cases their removal is advised but not required. Veins should not be injected while the extraction of teeth is in progress, because at such times when the lymphatic spaces are being torn open there is unusual likelihood of absorption and dissemination of bacteria in the blood-stream. Varicose veins should not be injected in the presence of a subacute pelvic infection, or when the patient has a cold or an acute pharyngitis.

A Past History of Phlebitis.—Varicose veins patients with a past history of phlebitis are a large group, comprising one out of every six women and one out of every eight men in my clinic. These patients have veins which cause unusual suffering. I have had a patient declare that he preferred amputation to the continuance of his suffering from varicose veins which followed phlebitis. Should such patients be treated or turned away?

I must answer that each case is an individual problem in surgical judgment. The problem for judgment is not concerned with the question of the patency of the deep veins. That question, while important, is a mechanical problem which must be settled by tests which have been described.[6] The problem for judgment is this: In the individual case, will injection stir up the old phlebitis? This danger merits prolonged thought and study. Mortality from acute phlebitis may run as high as 8 per cent.[6] Even when the phlebitis has been in the superficial veins there may be danger. Hanschell writes me of three cases of recent superficial phlebitis which he injected in which "the resulting phlebitis and periphlebitis was unusually severe and persisted from eighteen months to two years." He who is too indolent to study the principles which I must explain further at some length, should not accept the very heavy responsibility presented by such patients.

How frequently such patients may be accepted and how frequently rejected may be suggested by some case series. I have asked Delater, of Paris, to contribute his results, for he has, I believe, the widest experience in this particular type of case of any worker living. In his series of 131 cases observed there were:

Patients with a past history of deep phlebitis	79
Patients with a past history of superficial phlebitis	52
	131
Patients accepted for injection	96
Patients rejected as unsafe	35
	131

Of the seventy-nine with a past history of deep phlebitis: Patients accepted, forty-four; patients rejected, thirty-five. Of the thirty-five declined, twenty-four had signs of impaired deep circulation. All of the fifty-two cases where the phlebitis had been superficial were treated. All of those treated were cured.

I have a smaller series of forty patients with a past history of phlebitis. Of these there were treated (and with success), twenty-two; rejected, eighteen. Nearly all of my patients had had a deep phlebitis previously.

In deciding whether the patient who has had phlebitis should be taken or rejected, there are four criteria which should enter into the judgment: (1) The time interval since the phlebitis; (2) The question as to whether the phlebitis reached the deep veins; (3) The age of the patient; (4) The possibility of special treatment.

What lapse of time should be allowed after an acute phlebitis before injections are made? The only rule that can be laid down is this: The longer the interval, the less the danger.

Noel Scott[7] waits three months after all inflammation has disappeared. Douthwaite, R. T. Payne,[8] de Takats[9] and J. M. Hayes[10] wait six months. Delater and Troisier wait two years. Hanschell now waits three years. Forestier, previously quoted as waiting ten years, now waits only five years. Gaugier adheres to the position which he took with Sicard, and if the deep veins were involved in a deep phlebitis, advises rejection of the patient even after ten to twenty years, and holds that it may be better for the general practitioner to let them alone entirely. In my opinion, no one should be injected in less than six months after a phlebitis and sometimes I reject patients even after ten years.

The second criterion which distinguishes between a previous superficial phlebitis and a previous deep phlebitis is stressed by Delater, Douthwaite and Gaugier. They hold that there is little or no danger after a superficial phlebitis, but that caution must be used when there has been a deep phlebitis. Payne will never inject when there has been a history of phlegmasia alba dolens. Ronald Thornhill is of the same persuasion.

But how is one to tell now whether a phlebitis in the past did or did not include the deep veins? Tests for the patency of the deep veins now do not tell whether there has been a phlebitis in the deep veins in the past, because some of the deep veins may be shown by patency tests to be open

while other deep veins may be occluded and harbor bacteria. Deep veins once thrombosed by infection may be recanalized and now be patent.

The following items do give warning that a previous phlebitis was deep: A history of surgical trauma in the lower abdomen before the phlebitis (Delater); trouble in walking for two months after phlebitis (Delater); past recurrences of the phlebitis (Delater); œdema one-third of the way up the leg (Douthwaite); a white œdema (Gaugier); hydro-arthrosis of the knee (Gaugier).

In a superficial phlebitis, the inflammation is localized at the painful area, the recovery is rapid, and if there is a remaining œdema of the lower leg it disappears after application of an Unna's paste bandage (Delater).*

Forestier dissents. He minimizes the importance of the distinction between a previous superficial phlebitis and a deep phlebitis; so do Meisen and McPheeters.[11]

Both parties in this controversy have truth behind them: Happy results from injection by careful men are being obtained in cases where the previous phlebitis was deep. Nevertheless, special caution in treatment, to be described below, is essential when there has been a history of deep phlebitis.

A third criterion which I consider important is the age of the patient. A young patient with a history of phlebitis may be accepted while an elderly patient is refused because younger patients have better resistance to infection and are not such likely subjects for thrombosis and embolism.

Special Treatment in Patients with a Past History of Phlebitis.—Some of the patients who have had phlebitis demand very different treatment from ordinary cases. In such cases instead of the usual ambulatory treatment, some of these patients are hospitalized and ordered to stay in bed. This is simply the old surgical principle of preventing the dissemination of infection by putting the part to rest. The veins are further splinted by the application of a firm linen-mesh bandage all the way up the leg, which is worn day and night. These patients require only one-tenth as large doses as ordinary patients. One or two minims of the quinine urethane solution is used as the first dose. After injection they suffer pain, not experienced by other patients, but this pain is relieved at once as long as the leg is kept bandaged.

Conclusion.—For the protection of the patient, it is recommended that before any injection treatments there be a complete physical examination or that as a minimum the following items of history and physical examination be ascertained:

* Deutsch, H., maintains that a deep phlebitis always begins with a sudden pain in the calf muscles—Zur behandlung der akuten lokalizierten phlebitis der unteren extremitat, Wien. klin. Wchnschr., vol xlii, p. 1162, September 5, 1929. Ipsen, J., notes that a thermometer on the plantar surface of the foot shows fever in a deep phlebitis but no fever in a superficial phlebitis—Recherches sur les artères à l'état pathologique, Acta chir. Scand, vol. lxv, p. 341, 1929.

History

Name .....
Address .....
Age .....
Age when varicose veins began.....
.....
Pain.....For how long
.....
Inflammation in leg.....
Phlebitis or milk leg.....
When .....
Typhoid..... When.....
Pelvic troubles.....
Intermittent claudication.....
.....
Has patient ever taken quinine with symptoms of toxæmia.....

Physical Examination

Temperature..... Pulse.....
Blood-pressure .....
Do veins extend above the inguinal region on the abdomen.....
Œdema of leg.....
Pulsation of artery dorsalis pedis.....
.....
of tibialis posterior.....
Cyanosis or rubor when foot is dependent
.....
Pain or blanching of toes when leg is elevated and ankle is alternately flexed and extended .....
Sclerosis in veins.....
Pain on walking five minutes with legs firmly bandaged.....
Description of veins.....
Pelvic tumors.....
Pelvic Infection.....

Urine: Specific gravity.....albumen..... sugar.....

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