

Puerperal Thrombophlebitis with Gangrene

Report of a Case

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THROMBOPHLEBITIS is often seen by the obstetrician.^{3, 9, 13} The first reported suggestion that thrombophlebitis could cause gangrene was described in 1593!¹⁰ There are, at present, 102 cases of thrombophlebitis with gangrene upon which information is available: 69 in the left lower extremity; 27 in the right lower extremity; 4 in the left upper extremity; and 2 in the right upper extremity. The higher incidence of thrombophlebitis in the left lower extremity may have an anatomic basis. The right common iliac artery somewhat compresses the left iliac vein shortly after the iliac artery leaves the abdominal aorta.^{1, 10} This pressure may be accentuated by the presence of a fetal head in the maternal pelvis. The higher incidence of thrombophlebitis in the left leg would account for the higher incidence of the complication in this extremity.

CASE REPORT

A 19-year-old primigravida was admitted on July 6, 1963, with mild preeclampsia at term. Labor was uneventful except for a second-stage arrest due to failure of rotation. The patient had an atraumatic outlet forceps delivery. No ergonovine maleate or derivatives were used.^{2, 6} During labor the patient com-

plained of some pain in her left leg. In the immediate puerperium there was an occasional dull ache in the back of the left calf; physical findings, however, were normal. In the ensuing 48 hr. the patient was ambulatory and afebrile.

Six days after admission, edema of the left foot and ankle was noticed, along with a mild tachycardia and low-grade fever. There was a similar small degree of edema of the opposite extremity with no pain. The leg was elevated and the patient put at bed rest. During the evening of the same day the pain became severe. The medical consultant confirmed the impression of ileofemoral thrombophlebitis and advised anticoagulant and antibiotic therapy. The peripheral pulses were present in the left leg. Detailed history at this time revealed that the father, paternal aunt, paternal uncle, and paternal grandfather all had suffered episodes of deep and superficial thrombophlebitis.

During the next 6 hr. a crisis occurred characterized by sudden peripheral cyanosis of the lower half of the leg and extreme pain and increasing edema. Peripheral edema made palpation difficult. No posterior tibial or dorsalis pedis pulses were obtainable. The popliteal pulse was questionably palpable. A decreased femoral pulse was present. An anesthesiologist saw the patient promptly. At this time the toes and foot were deeply cyanotic. A peripheral block was carried out, infiltrating around the femoral arteries, with resultant dramatic improvement in the color and temperature of the foot and toes. Seven hours later the area became cyanotic again,

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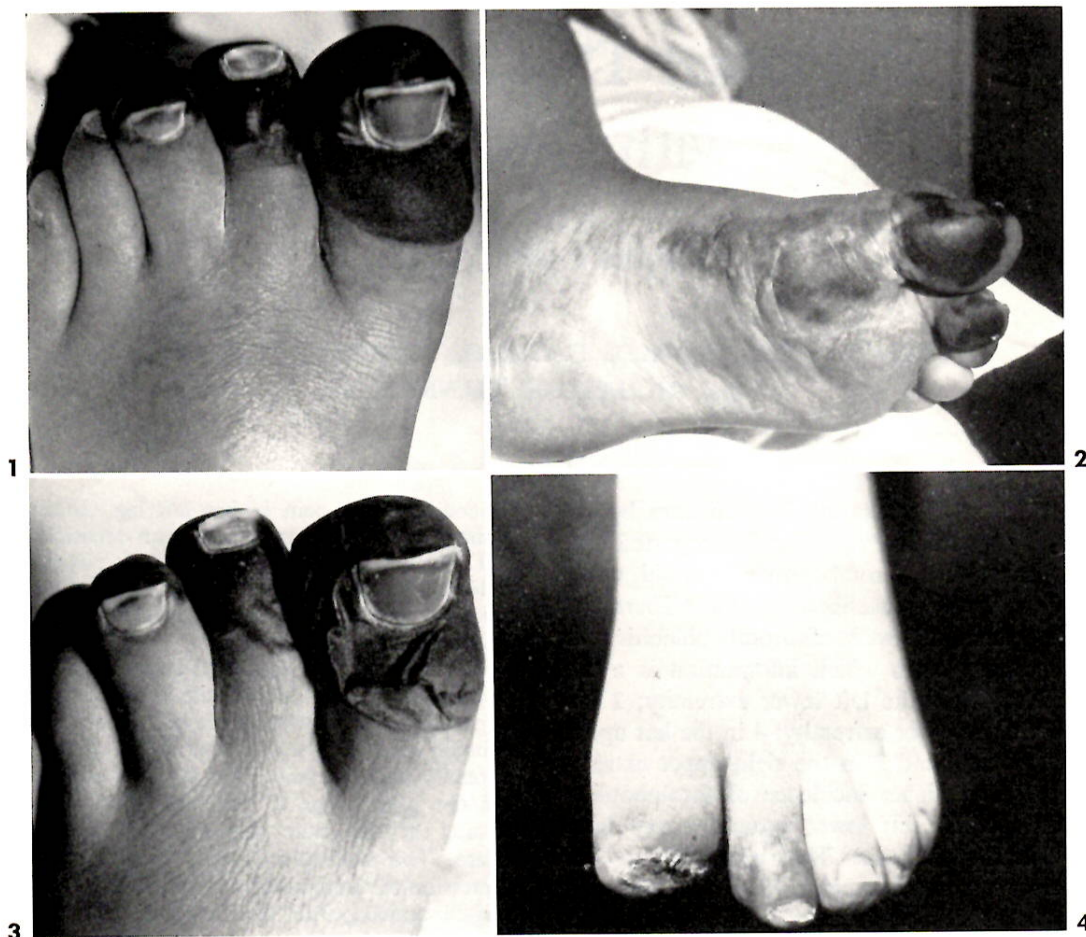


Fig. 1. Cyanosis of toes shows little change after treatment. Fig. 2. Edema has subsided, but first 3 toes and part of metatarsal arch remain dark and cyanotic after 48 hr. Fig. 3. At 6 weeks, patient was ambulant on crutches and was discharged, but observation and treatment continued. Fig. 4. Healed foot after removal of entire distal phalanx of first toe, and area over pulp and nail bed of second toe.

and a repeat block was performed in the same location, with some of the anesthetic substance being introduced intra-arterially. There was less return of color and warmth. The duration of the improvement was about 2 hr. The toes and foot again became dark and cyanotic.

At this time a long-acting spinal anesthetic was administered. Although there was relief of pain, there was little change in the color or temperature of the toes and foot (Fig. 1). Over the next 48 hr. the edema began to subside, and gradually a large area of demarcation began to develop which apparently involved the first 3 digits and part of the metatarsal arch area. (Fig. 2). It was felt that any defini-

tive surgery should be delayed as long as possible. The patient remained hospitalized for 6 weeks. Anticoagulants and antibiotics were continued. The patient was ambulant on crutches, with no weight-bearing on the affected limb. Figure 3 shows the condition of the foot at the time the patient was discharged for further observation as an outpatient.

The patient was readmitted 3 months after her first admission, and under general anesthesia the eschar was removed. What had appeared initially to be substantial involvement of the second toe proved to be a superficial process. The entire toe was preserved except for an area over the pulp and nail bed where

the epidermis was necrotic. There was no bone involvement and the entire digit was saved. The first toe, after removal of the eschar, revealed necrosis of half of the distal phalanx. Most of the pulp of the distal phalanx was necrotic, and so the entire distal phalanx was removed at the interphalangeal joint. Complete skin coverage was not available, and the toe was allowed to heal by granulation. The pathologic diagnosis indicated "soft tissue showing advanced mummification type of gangrene." Subsequent healing was unremarkable (Fig. 4). At present (1 year later) the patient walks with a slight limp due more to venous insufficiency and slight edema of the extremity than to the physical change in the foot. All peripheral pulses are now normally palpable and equal.

DISCUSSION

The diagnosis of gangrene of venous origin rests primarily upon the demonstration of evidence of venous occlusion without any primary arterial obstruction.^{7,11} The thrombophlebitis in this patient was probably related to her pregnancy, but the strong family history of thrombophlebitis suggests hereditary predisposition. The occurrence of thrombophlebitis with gangrene is incompletely explained.¹¹ The 2 generally accepted contributing factors in the phenomenon are sudden massive venous occlusion in most of the venous channels of the extremity and arteriospasm.¹² Massive venous occlusion has been considered to be the predominant factor in reported cases, and arteriospasm has been relegated to a secondary role of inconstant degree.^{4,5,8}

In the present case it is apparent that temporary relief of arteriospasm was not sufficient to prevent gangrene. The improvement noted in color, temperature, and palpable pulses indicated the relief of an intense arteriospasm. Attempts to produce more persistent relief were unsuccessful in preventing local gangrene, but may well have limited its extent. In most reported patients, thrombophlebitis and gangrene have occurred in the third and fourth decades.

This raises the question of pre-existing arterial disease as a contributory factor in these patients. However, the age and sex of this patient suggests the lack of importance of pre-existing arterial disease. To our knowledge this is the youngest parturient reported with this complication of thrombophlebitis. The disparity between the amount of early damage to the extremity and the actual amount of tissue ultimately lost is striking.

SUMMARY

A case of a 19-year-old woman who suffered puerperal thrombophlebitis with gangrene is reported. There was eventual loss of peripheral digits. Attention is called to this phenomenon which has been rarely reported. There was no effective means found of completely reversing the process from the time arterial insufficiency was noted, although the resulting final disability and loss of tissue may have been minimized by treatment. The resultant gangrene was of the "dry" variety. Long observation before actual amputation resulted in minimal disability.

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