Thrombophlebitis and varicosis syndrome in pregnancy

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Received August 6, 1996; revised manuscript accepted for publication October 30, 1996

Summary

Venous stasis of the lower limbs is common in pregnancy; the thromboembolic complications are 1 in 1000 and become reduplicated in puerperium. The management of 13 patients with deep venous thrombophlebitis of the lower limbs during pregnancy, the fetal outcome and delivery were evaluated retrospectively.

The delivery indications were the classic ones. Therapy was administration of calcium heparin and an angio-protector like diosmin. Good results, whether fetal outcome or mother morbidity in puerperium, were obtained.

Key words: Pregnancy; Thrombophlebitis; Heparin; Fetal outcome.

Introduction

The causes of thrombophlebitis are Virchow’s classic triad of changes in blood clotting factors, vessel wall damage, and stasis. Although pregnancy is often referred to as a hypercoagulable state because of increased levels of fibrinogen, factor VIII, and factor XII, there is little evidence that these increases lead to an increased incidence of thromboembolic disease during pregnancy [1-3]. In fact, some clotting factors, especially factor XI, usually decrease during pregnancy, significant advances have been made in defining the regulatory mechanisms that control blood clotting. These have been reviewed, with special attention given to the functions of the natural inhibitors antithrombin III, protein C, protein S and their role in promoting thrombosis when there are congenital deficiencies of these inhibitors as well as acquired abnormalities [2-9]. Protein S serves as a cofactor for activated Protein C, which has anticoagulative activity. Bolan and Alving (1991) noticed that these deficiencies may be found in approximately 10% of patients who are under age 45 and have venous thrombosis.

Alving and Comp (1992) noticed that pregnancy decreases levels of protein S to 40-50% of normal levels. The decrease occurs early in pregnancy and persists into the post-partum period; it appears to be a hormonal rather than a dilutional effect [8, 10, 11]. The same is true for antithrombin III levels, which decrease during pregnancy, especially in patients with congenital deficiencies of these inhibitors as well as acquired abnormalities where this deficiency may manifest itself as thromboembolic disease during pregnancy.

Another factor is vessel wall damage that does not occur during normal pregnancy but often occurs during delivery. Most often pelvic vesal damage occurs during cesarean delivery but improper or prolonged use of stirrups for vaginal delivery may lead to vessel wall damage in the legs, especially in patients with venous stasis of the lower limbs. There are not only thrombophilic changes, but also a risk of deep venous thrombophlebitis (DVT) and superficial thrombophlebitis due to venous stasis of the lower limbs [4, 6, 7, 12].

The etiopathogenesis is probably multifactorial while hereditary, constitutional, haemodynamic (decreased blood flow from compression by the dextrorotated uterus on the right ovarian vein), and endocrine like factors for example progesterone and oestrogens, which cause venodilatation and increased orthostatic venous pressure. Varicose dilatation allows valvular incontinence with further vesal failure, slowing of the venous blood velocity until stasis of blood.

Whit the stasis of blood, that increases in the first trimester, and the increase in blood pressure by 28 weeks’ gestation, venous pressure in the legs is twice that of non-pregnant levels and is an important factor of the Virchow’s triad, increasing the risk of DVT.

Deep venous thrombophlebitis (DVT) of the lower extremities occurs in approximately 0.24% of all deliveries. The risk of DVT after cesarean delivery is approximately three to five times greater than after vaginal delivery; composing risk factors include obesity, inability to ambulate, advanced maternal age, and higher parity. Should the DVT go untreated, approximately 15 to 25% of patients will develop pulmonary emboli and 15 percent will substan a fatal pulmonary embolus (PE). However, if recognized early and treated appropriately, the risk of PE and death are reduced to 4.5 to 0.7%, respectively.

Classic symptoms for DVT include unilateral leg pain, tenderness, swelling, edema, a palpable cord and a change in limb color. Diagnostic presumption of thrombophlebitis must always be confirmed by Doppler ultrasound examination which must be done in all high risk patients because of the late onset of clinical evidence. Unfortunately, the first sign of DVT may be a fatal pulmonary embolism with tachypnea (90%), dispnoea (80%), pleuritic chest pain with or without splinting (70%), apprehension (60%), cough (50%) and tachycardia (40%). Patient eva-
luation is complicated in post-cesarean section patients since splinting from incisional pain and tachypnea are not unusual findings.

Doppler studies have a sensitivity of 90% for popliteal, femoral or iliac thromboses, but only 50% for calf involvement because of abundant collateral vessels.

Contrary to popular belief, there is no or only a slight increase in the incidence of thromboembolic disease during pregnancy. The time of the most significant risk, however, is early puerperium, when the incidence is 5-6 times higher than it is in nonpregnant women. It seems evident that endothelial damage is the most important causative factor in thromboembolic disease during post-partum.

Materials and Methods

A group of 13 pregnant patients, affected with venous pathology, were studied in the 1st Obstetrical & Gynecological Clinic of Catania University: 11 with lower limb varies, two deep thrombophlebitis.

Pregnant women with venous problems, observed only in the latest pregnancy or lacking regular follow-up, were excluded from our review.

The age of the women ranged between 18 and 39, parity between 0 and 5; they were observed from the 10th week of gestation through the delivery time (ranging from the 38th to the 40th week).

Diagnosis was performed by clinical, LAB-tests (PTT, PT, AP, fibrinogen and platelet count) and by Doppler velocimetry.

In 11 of the 13 women a severe varicose disease was found: bilateral lower limb and varicose varices with sensible lowering of venous flow in 11 patients and deep vein thrombophlebitis in two.

The 11 varicose patients were treated with prophylactic elastic bandages and vasoprotective drugs (Diosmine tbl 300 mg x 2 + Calcioparine 0,2).

The patients with thrombophlebitis were hospitalized until healed and, afterwards, underwent the same prophylactic treatment like the 11 above.

All cases were controlled after 40 days: clinical examination, LAB-tests, Doppler velocimetry.

Vaginal delivery was successful in five cases (Tab. 1). A cesarean section was carried out in eight women: six of them had a previous laparotomic delivery, one because of a post-partum thrombophlebitis after the preceding pregnancy, one because of placenta praevia (35th week) (Tab. 2).

A previous cesarean section had been performed in more than 75% of the group; all cases were pluriparous women.

Calcioparine was administered 12 hours after childbirth and women who underwent cesarean section were mobilized early on without risk of morbidity.

Results and conclusions

Careful anamnesis at the beginning of pregnancy and early observation of the lower limb varies have proved to be particularly effective for the prevention of complications.

Clinical evaluation of the case was made with the collaboration of the Department of Angiology.

Every patient with positive anamnesis was submitted to a protocol that included clinical, ematological, chemical and in strumental tests.

In the 11 pregnant women with lower limbs varices the prophylactic care (elastic compression stockings and administration of calcium heparin) was effective in 100% of the cases [13]. Follow-up was done every 40 days to check the elastic compression and the treatment in order to improve the symptomatology.

In the two cases of thrombophlebitis admission was very important as it was possible to have instrumental monitoring with echoduplex to study the thrombo evolution, valvar continuity and eventual backflow.

In a case observed at 15 weeks with deep venous thrombophlebitis involving the femoral vein until the right external iliac vein, the saphena vein filter was not applied but the patient was monitored until delivery.

The continuation of prophylactic care even during puerperium was essential if associated with early mobilization. Indeed, the last follow-up showed no complications in 100% of the cases.

In conclusion, for early mobilization, when possible, the best delivery is vaginal; but if it is impossible, collaboration between the obstetrician and angiologist becomes essential.

Table 1. —

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Table 2. —

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<td>Post-partum thrombophlebitis after the preceding pregnancy</td>
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References


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