

Prevalence of venous stasis and surgical procedures in deep venous thrombosis

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Abstract

The aim of this study was to assess the association of venous stasis and surgery to deep venous thrombosis in a tertiary hospital. The association of venous stasis and surgery with deep venous thrombosis was evaluated in patients at Hospital de Base, Faculdade de Medicina de São José do Rio Preto in the period from June 2007 to June 2008. Eighty-one patients (56.7% females and 43.2% males) were analyzed. Recent histories of immobilization or bed rest were reported in 16% of the cases and 9.8% had recently been submitted to surgical procedures. Venous stasis persists as a factor very closely related to deep venous thrombosis despite of prophylactic measures employed in hospitals.

Key words: deep venous thrombosis, risk factors, surgery

Introduction

Deep venous thrombosis (DVT) remains a major challenge in medicine. The main factors involved in thrombotic events described by Virchow in 1845 are still valid today and include hypercoagulability, venous stasis and endothelial injury 1,2.

Several congenital and acquired conditions, identified in recent years, have further improved our understanding of this disease as laboratorial changes have been better defined 3-6. However, well established factors such as venous stasis and endothelial damage remain as important causes of thrombosis and require more categorical and effective preventive measures 7.

Although DVT is common in hospitalized patients it is often under diagnosed. The overall incidence of DVT identified in general surgery by the 125I-fibrinogen test is 25% of patients not submitted to prophylaxis. 7 The incidence of venous thrombosis increases sharply with age: it is very rare in young Individuals (< 1 per 10 000 per year) but increases to Approximately 1% per year in very old age, which Indicates that aging is one of the most important risk factor for venous thrombosis 8. The aim of this study was to evaluate the association of venous stasis and surgeries with DVT in a tertiary hospital.

Materials and methods

A cross-sectional, prospective, quasi randomized (in order of arrival), descriptive and quantitative study was performed to assess the association of venous stasis and surgery with DVT in patients at Hospital de Base, Faculdade de Medicina de São José do Rio Preto from June 2007 to June 2008. Researchers scheduled visits once a week to the vascular surgery ward and identified patients under treatment for DVT confirmed by Doppler ultrasound. The patient history was investigated in particular in respect to being bedridden for clinical problems for periods longer than one week and surgery within the preceding month. These data were input on an Excel spreadsheet and statistically analyzed.

The study was approved by the Research Ethics Committee of FAMERP.

Results

Eighty-one patients, 46 female (56.7%) and 35 male (43.2%) were included in this study. The participants' ages ranged between 25 and 95 years with an average of 57.23 years. Thirteen (16%) of the patients had histories of recent immobilization or bed rest and eight (9.8%) patients of surgical procedures within one month prior to the DVT.

Discussion

This study evaluated possible associations of DVT in patients with histories of immobilization, bed rest or surgeries in general. About one quarter of patients with DVT had a history of surgery or being bedridden; this study did not include cases of endovascular procedures. The causes of DVT in approximately 75% of patients were not identified and thus still need to be investigated. These figures however are lower than those found in the literature.⁹

One study reported that silent pulmonary embolism was diagnosed in 1665 of 5233 Patients (32%) with DVT with its Incidence being higher in proximal DVT compared to distal DVT. Silent pulmonary embolism seems to increase the risk of recurrent pulmonary embolism in 5.1% of cases versus 0.6% of individuals without silent pulmonary embolism.¹⁰

Two studies in our service that evaluated acquired hypercoagulable states, identified associations with anticardiolipin antibodies (28.8%) and with cancer (13.4%)^{11,12}. Hence, there are other important causes of thrombosis. The low prevalence of thrombosis in bedridden patients may be justified by prophylactic measures often prescribed in these cases.

The triad of risk factors of Virchow, venous stasis, endothelial injury and hypercoagulability, is still valid today. However, with new diagnostic methods for hypercoagulability, and the greater attention paid to the paraneoplastic syndromes, the importance of these risk factors has increased in recent decades. Disease prevention is one aspect that should be considered when trying to reduce the prevalence of thrombotic events in at-risk individuals such as in the bedridden and after surgery.

A model for predicting the risk of venous thromboembolism in hospitalized medical patients has yet to be developed and validated. Several scoring systems based on risk assessment models have been proposed to help physicians prescribe appropriate prophylaxis¹³.

Therefore, the low prevalence in this study compared to published studies may be justified by routine prophylactic measures.

Conclusion

Venous stasis and the postoperative period are important factors associated with deep venous thrombosis despite of prophylactic measures normally employed in hospitals.

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