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Letter to the Editor

Implantable Infusion System and Thoracic Venous Thromboses

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THE USE of implantable infusion systems has been developed over recent years [1, 2].

These systems improve the comfort and safety of prolonged courses of anti-cancer chemotherapy. However, certain complications such as infection, extravasation of the drugs and thromboses have been reported [3]. The most important of these complications, in terms of frequency and potential severity, is thrombosis of the subclavian or jugular veins.

By means of a retrospective study, we have identified a group of 'at risk' subjects in order to apply appropriate prophylactic measures. In a series of 185 patients receiving continuous chemotherapy over a period of 5 days via an implantable system, 16 developed subclavian or jugular vein thrombosis (8.6%). Three patients had bronchial cancer and 13 had breast cancer (significant difference, $P < 0.01$).

Diagnoses for the 169 patients who did not have venous thromboses were as follows: breast cancer (66), bronchial cancer (44), ovarian carcinoma (21) and a miscellaneous group of digestive carcinomas, sarcomas and metastases with unknown primary (38). Diagnosis of thrombosis was based on the sudden development of clinical signs: pain in the upper limb with edema extending to the axilla and collateral circulation. Anticoagulant therapy was immediately instituted without other confirmation.

In general, the thromboses did not interfere with the functioning of the implantable infusion system as they were situated proximal to the catheter. However, two systems had to be changed because of obstruction. In the other cases, the clinical signs regressed with anticoagulant treatment at effective doses.

This high frequency of thromboses (16%: 13/79) in women with breast cancer does not appear to be definitely related to the presence of metastases (9 thromboses in 13 patients with metastases) or to previous radiotherapy (5 thromboses in 20 previously irradiated patients). The incidence of thrombosis is possibly favoured by chemotherapy which can induce a hypercoagulability state, as described by Canobbio *et al.* [4]. In particular, it seems to be significantly related ($P < 0.02$) to hormonal treatment with tamoxifen (10 thromboses in 27 patients receiving tamoxifen). This could be due to the decrease in anti-thrombin III activity induced by tamoxifen. This product is known to be thrombogenic [5]. This group of 'at risk' patients therefore appears to warrant prophylactic anticoagulant treatment.

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