Breast cancer vascularity: color doppler sonography and histopathology

朱娟秀

Lee WJ;Chu JS;Huang CS;Chang MF;Chang KJ and Chen KM

摘要

Abstract

In this prospective study, the authors examined 50 patients with breast tumors (malignant, n = 32; benign, n = 18) to investigate the correlation between color Doppler flow mapping and histopathological findings and to evaluate the clinical significance of color Doppler mapping. Among the 32 patients with breast cancer, color Doppler signals were detected in 24 patients (75%). The maximum flow velocities varied from 5 to 34 cm/sec, with 16 (67%) of them above 15 cm/sec. Among the 18 patients with benign tumors, color Doppler signals could be detected in 7 (39%). The maximum flow velocity varied from 3 to 30 cm/sec but was over 15 cm/sec in only two patients (28%). Histological studies revealed that color Doppler signals detected by Doppler sonography correlated with disordered neovascularization penetrating the lesion from its periphery, consisting of thin-walled blood vessels and large arteriovenous shunts. Although large tumors tend to have high Doppler flow, there is no significant correlation between the maximum flow velocity and tumor size. There is also no significant correlation between the detection of high flow color Doppler signals and the age, receptor status, tumor size, lymph node metastases, or clinical stage of patients with breast cancer. However, there is a positive association ($p < 0.05$) between nodal metastases and higher tumor flow velocity in T1 (2 cm) breast tumors, but not in larger tumors. It is concluded that color Doppler is useful in the assessment of tumor vascularity but is of limited value in the differentiation of benign from malignant lesions. However, the presence of color Doppler signals in Tl breast cancer suggesting early dissemination of the cancer might be of important clinical significance in detecting those small, apparently early, but aggressive tumors with poor prognosis.