

Scintigraphic prediction of therapeutic outcomes of splenectomy in patients with thrombocytopenia

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In patients with thrombocytopenia, platelet scintigraphy has been used to locate the site of platelet sequestration and destruction and to determine whether splenectomy will be of benefit. However, its efficacy in predicting the outcome of splenectomy is controversial. We assessed the feasibility of platelet scintigraphy in this regard. **Methods:** Platelet scintigraphy was performed in five patients (2 women, 3 men, mean age 48 years) before splenectomy. Four patients were diagnosed with idiopathic thrombocytopenic purpura and one with hypersplenism due to portal hypertension caused by intrahepatic chemotherapy against metastatic liver tumors of rectal cancer. Platelets labeled with 37 MBq of In-111 oxine or 1110 MBq of Tc-99m HMPAO were intravenously injected. Anterior images were obtained with a gamma camera 3–5 and 23–29 hours post-injection in five patients. Additional images were obtained 48 hours post-injection in three patients. For the analysis, a spleen/liver ratio (S/L ratio) was calculated using mean counts in regions of interest defined on the spleen and the liver. Serum platelet counts were measured before and after the operation; in three patients, splenectomy effectively resolved the thrombocytopenia (Group A), while it was ineffective in two patients (Group B). **Results:** The S/L ratios were apparently higher in Group A than in Group B; in Group A, the ratios were 6.05, 6.97 and 3.16 at 3–5 hours, 12.67, 7.48 and 3.46 at 23–29 hours and 17.66 and 8.12 at 48 hours, whereas, in Group B, they were 0.67 and 0.66 at 3–5 hours, 0.52 and 0.54 at 24 hours, and 0.42 at 48 hours. **Conclusion:** The results of this study indicate that platelet scintigraphy is of value in predicting the therapeutic efficacy of splenectomy in patients with thrombocytopenia.

Key words: platelet scintigraphy, idiopathic thrombocytopenic purpura, splenectomy