COMPARATIVE ANALYSIS OF D2-40 AND LYVE-1 IMMUNOSTAINING IN LYMPHATIC MALFORMATIONS


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ABSTRACT

Identification of lymphatic vessels in normal tissue and vascular malformations has been considerably enhanced by the recently discovered lymphatic endothelial markers D2-40 and LYVE-1. However, comparative analysis of these two antibodies in the evaluation of lymphatic malformations has not been widely reported. We evaluated twenty lymphatic malformations of skin/subcutis/soft tissue with immunostaining for D2-40 and LYVE-1. Ten high-power fields from each section were scored for total number of immunopositive vessels using identical fields with both markers. Vessels were grouped by diameter (<225 μm and >225 μm), with each vessel categorized according to the percentage of its lumen showing immunopositivity (<25, 25-75, or >75). Endothelial staining intensity was graded low or high in each case. We found no significant difference between total number of vessels stained with D2-40 or LYVE-1 or between the 2 markers in terms of the percentage of luminal circumference stained or intensity in vessels smaller than 225 μm. LYVE-1 stained a higher percentage of luminal circumference of channels greater than 225 μm at both low and high intensities. Large channels stained much less and sometimes not at all with either antibody. D2-40 and LYVE-1 are both effective for highlighting endothelium of lymphatic malformations, staining similar percentages of channels. LYVE-1 provides more luminal staining in channels larger than 225 μm but is less specific also staining macrophages and adipocytes. Both markers are expressed less strongly or sometimes not at all in large channels.