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The parameters of basal microvilli sprouting from micro-vessels in PDAC can predict postoperative relapse

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Introduction: We have identified numerous 'hairy-like' projections on the surface of poorly vascularized PDAC micro-vessels that we refer to as "basal microvilli". Remarkably, basal microvilli were only found in invasive PDAC tumors, but were not present in non-invasive precursor lesions or normal pancreas. To clarify the relationship between the parameters of basal microvilli and clinicopathologic characteristics of PDAC patients and its significance in predicting postoperative relapse.

Methods: To perform an adapted thick (45 μ m) human tumor sections co-immunostaining and employing confocal microscopy with 3-dimensional construction imaging method. Associations of basal microvilli with clinicopathologic characteristics and Disease-free survival (DFS) in PDAC patients were evaluated.

Results: In terms of parameters of basal microvilli, lengths of basal microvilli were correlated with higher regional lymph nodes metastases rate, higher Ki-67 index and higher PET-CT SUVmax value (P<0.05). DFS rate in PDAC patients with longer lengths of basal microvilli were significantly worse than shorter lengths of basal microvilli (P<0.05), whereas no significant correlation between densities of basal microvilli and DFS was found (P>0.05).

Conclusions: Our study suggested that the length of basal microvilli, not density, can predict postoperative relapse in PDAC patients. The classification system refers to basal microvilli may be regarded as useful criteria predicting survival outcomes.

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