Anatomy of the transverse colon and possible pathways of aberrant lymphatic tumour spread in complete mesocolic excision for colon cancer

Abstract Text
Purpose of the study: Lymph node metastases to the pancreatic and gastroepiploic nodes in transverse colon cancer have been described, however, the mode of spread in this area remains unclear. We aimed to describe the possible pathways of aberrant lymphatic spread in the area of the proximal superior mesenteric artery and vein, the greater omentum, and the lower pancreatic border. Methods: Cadaveric dissections were undertaken in four donors according to the principles of complete mesocolic excision with central vascular ligation. The vascular anatomy of the transverse colon was scrutinized to determine possible pathways of lymphatic spread to the pancreatic and gastroepiploic lymph nodes. Summary of results: We identified vascular connections between the transverse colon and the greater omentum at the level of both the hepatic and the splenic flexures. Additionally, small vessels running from the transverse mesocolon to the lower pancreatic border in the area between the middle colic artery and the inferior mesenteric vein were demonstrated. Venous tributaries to the gastrocolic trunk could be exposed to highlight its surgical importance as a guiding structure in complete mesocolic excision for colon cancer. Conclusions: We were able to confirm that it is feasible to clearly separate embryologic compartments by dissecting along predefined tissue planes when performing complete mesocolic excision. However, the close vicinity of the foregut, midgut, and hindgut results in vascular connections that might serve as potential pathways for lymphatic metastatic spread of transverse colon cancer. Acknowledgements: NW is supported by a Pathsoc Career Development Fellowship.