

Marching towards personalized surgery, fewer complications, higher survival rates

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The past 15 years have resulted in dramatic changes in the treatment of colon cancer. The most significant development, since the work of Werner Hohenberger (1), lies in the fact that the Norwegian cancer registry demonstrates a steady improvement in 5-year survival rates within this same period. What is most astonishing is the fact that the chemotherapy regimen has been stable within the whole period. The conclusion drawn therefore is: it is possible to achieve better long-term survival rates through "just performing better surgery". If correct, such a trend could in turn, lead to the decline of chemotherapy use in the treatment of colon cancer. Never the less, "just better surgery" does require a definition.

When analyzed, the history of surgical education has focused on the surgeon, his apprentice, the surgical procedure and has seldom shown any interest in the individuality of or the variability in the patient. As has been successfully demonstrated through the work of Spasojevic (2) and Naesgaard (3), this individuality and variability can and should lead to the individualization and personalization of surgery.

Allow us to simplify the case. Drawing lines where the surgeon should divide the tissue will not be sufficient for all patients. Modern radiology allows for the preoperative awareness of the anatomy (through segmentation and 3D reconstruction (4)) that will in turn allow the surgeon to approach anatomical structures in a more responsible manner, from outside the lymphatic flow. Thus, the definition of "just better surgery" entails preoperative anatomical awareness than enables us to approach vessel origins (perform the lymphadenectomy) from outside the lymphatic flow (5). Personalized surgery should improve survival rates, reduce complications and the need for chemotherapy in most patients treated for localized colon cancer.

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