Limited Surgery in Early Gastric Cancer

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With a 5-year survival rate of more than 90%, early stage gastric carcinoma has a far better prognosis than the more advanced stages. However, this survival advantage is currently achieved at the cost of subtotal or total gastrectomy. It is, thus, understandable that physicians are searching for ways to reach the same result by limited approaches. With this goal in mind, several endoscopic and laparoscopic procedures have been developed. For example, endoscopic mucosa resection is increasingly employed, especially in early cancers of limited extension [1]. Also, total or partial gastrectomies with limited lymphadenectomy (D0 or D1) are performed by minimal access surgery [2, 3]. Profound experience with these methods is a prerogative for their successful application. However, the indication for limited surgery depends on tumor localization and lymphatic involvement, too. The article by Skoropad et al. [4] in this issue of ONKOLOGIE confirms the well-known fact that nodal involvement impairs the prognosis of early gastric cancer, even after radical surgery. As a consequence, a limited approach is especially questionable in the presence of nodal metastases. The probability of lymphatic involvement in early gastric carcinoma is approximately 10–12%. It is lower (4%) in mucosal carcinomas and much higher (up to 23%) in submucosal tumors. Metastases are not confined to the D1 compartment but can also be found in the D2 compartment [5]. Therefore, an exact lymphatic staging is a prerequisite for limited surgery in early gastric cancer. Three possible approaches exist:

1. Prediction of lymphatic state on the basis of the characteristics of the primary tumor. These comprise size, appearance (elevated, depressed, ulcerated etc.), histological differentiation (Lauren classification), and depth of invasion (mucosa/submucosa). Currently, molecular markers (e.g. VEGF) in biopsy specimens are tested as predictors for nodal involvement. However, results are still contradictory. Gene chip analyses of tumor tissues will eventually give more conclusive data in the future.

2. Direct differentiation of involved and uninvolved lymph nodes with imaging procedures such as MRT/MRS, PET, or endosonographically guided fine-needle biopsy. However, these procedures have a sensitivity below 70–80 % and are therefore at the moment of limited value in the decision pro or contra limited surgery.
3. Much more promising is the method of sentinel lymph node biopsy (SLNB). This approach has, also according to our own experience, an acceptably high sensitivity and specificity [6–10]. New flexible nuclide detector probes or fluorescent dyes allow us to expect further advancements. Another advantage of SLNB lies in the subtle histopathologic characterization of the sentinel nodes. This increases the detection of micrometastases or single tumor cells, which, in the lymph nodes, according to recent investigations, are a relevant and important prognostic factor [11, 12]. Upstaging rates of otherwise node negative patients are as high as 40% with this method [10, 13]. However, the feasibility and accuracy of this technique under laparoscopic conditions has to be tested [14, 15]. SLNB could be a further step on the way to stage-adapted limited surgical therapy of early gastric carcinoma.

Thus, the conclusions of Skoropad and colleagues that therapy in early gastric cancer should be limited in most patients is not as yet applicable in reality. The key to the application of limited surgical procedures, such as laparoscopic or endoscopic surgical procedures, is the exact identification of nodal involvement. A reliable diagnostic procedure for this is still missing. The analysis of defined molecular markers in the primary tumor, improved imaging techniques and particularly sentinel lymph node biopsy could facilitate the identification of patient groups who can undergo limited surgery without additional risk.

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