

Residual Tumor After Pancreaticoduodenectomy: The Impact of a Brand New Standardized Technique to Evaluate Resection Margin Status

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Context Pancreaticoduodenectomy (PD) is the only potentially curative treatment for patients affected by periampullary cancer. Resection margin involvement (R1) after PD ranges from 14% to 75% and it has been demonstrated to significantly affect survival. It has been recently supposed that the reason of this difference is the lack of consensus on the method used to manage the specimen. The results of recent studies indicate that the use of a new technique to manage the specimen determines a significant increase of R1 resection rate up to 75%. We report the results of a case control study that evaluated the impact of this new technique in a series of 50 patients undergoing PD for cancer. **Material and Methods** From October 2004 through October 2010 at our institution surgical specimens after PD were analyzed by the pathologist according to international approved guidelines [1]. From November 2010 this method was replaced by a different technique [2] that included: 1) introduction of the concept of "circumferential margins"; 2) multicolor inking of six margins (a. Pancreatic transection margin; b. Biliary transection margin; c. Anterior surface of the pancreatic head; d. Posterior surface of the pancreatic head; e. Bed of the superior mesenteric vein; f. Bed of the superior mesenteric artery); 3) axial slicing of the specimen; 4) the following definition of R0 resection: tumor at a distance of at least 1 mm from the margin. From November 2010 through November 2011 we utilized the new method to manage 50 consecutive specimens after PD. In order to analyze the results of the new method we planned a case control study

focusing the following parameters: 1) rate of R1 resections; 2) average number of examined blocks; 3) average number of examined lymph nodes; 4) lymph nodal status. **Results** Statistical analysis of the two groups of patients showed no significant epidemiological, pathological and clinical difference. 1) The rate of R1 resections was: 68% (new method) and 10% (control group) (P<0.0001); 2) the average number of examined blocks was 48.2 (range: 29-92) (new method) and 10.7 (range: 5-21) (control group) (P<0.005); 3) the mean number of examined lymph nodes was 33.2 (range: 11-60) (new method) and 8.7 (range: 0-26) (control group) (P<0.005); 4) metastatic lymph nodes were found in 90% (new method) and in 46% (control group) (P<0.001). **Discussion** Our results confirmed that the new method determines a statistically significant increase of R1 resections if compared with the conventional method. This evidence confirms recently published data showing that "conventional technique" underestimate the rate of R1 resections. As a consequence, we can assume that R0 resection for periampullary cancer is performed only in a minority of cases. If confirmed, this evidence will impact clinical management of pancreatic cancer.

References

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