Resectability of pancreatic adenocarcinoma in patients with locally advanced disease downstaged by preoperative therapy: a challenge for MDCT.

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OBJECTIVE: The purpose of this study was to determine whether preoperative neoadjuvant therapy in patients with locally advanced pancreatic cancer affects the ability of multiphasic MDCT to predict successful surgical resection.

MATERIALS AND METHODS: From 2000 to 2006, there were 12 patients with prior neoadjuvant therapy successfully downstaged by CT and 31 age-matched pancreatic cancer patients without preoperative therapy who underwent pancreatic MDCT followed by attempted pancreaticoduodenectomy. Three readers blinded to surgical findings independently analyzed immediate preoperative MDCT scans of 43 patients comprising the retrospective data set in random order for vascular involvement (degree of contact and narrowing) and distant metastases. Individual reader sensitivity and specificity for resectability prediction were compared for study and control groups using the Fisher's exact test. Interobserver agreement was assessed using the kappa statistic.

RESULTS: Seven (58%) of 12 neoadjuvant-treated adenocarcinomas and 10 (32%) of 31 control pancreatic carcinomas were resectable (p > 0.05). For resectable disease, sensitivities were 86%, 71%, and 14% for the neoadjuvant group.
and 90%, 90%, and 60% for the control group (p > 0.05). Specificities were 80%, 100%, and 100% for the neoadjuvant group and 57%, 43%, and 76% for the control group (reader 2 specificity difference, p = 0.04). The multi rater kappa value of resectability prediction for neoadjuvant patients was 0.28, and that for control subjects was 0.63 (p < 0.001). In the neoadjuvant group, the majority of individual reader errors were false-negative resectability interpretations resulting from overestimation of vascular involvement. Consideration of degrees of venous abutment did not improve estimation of resectability in patients with neoadjuvant therapy.

**CONCLUSION:** Sensitivity for prediction of resectability tends to be lower for patients with locally advanced pancreatic cancer that has been downstaged by neoadjuvant therapy, but this trend is not statistically significant. Interobserver variability for determination of resectability is statistically higher than for controls who did not receive preoperative therapy.