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Which treatment for large rectal adenomas? Transanal Endoscopic Microsurgery or Endoscopic Submucosal Dissection? Results of a Systematic Review and Meta-Regression

Arezzo A [1], Passera R [2], Verra M [1], Bonino MA [1], Morino M [1].

[1] Digestive, Colorectal and Minimal Invasive Surgery, University of Torino, Italy

[2] Division of Nuclear Medicine, University of Torino, Italy

Background and study aims: Ten years ago the introduction of Endoscopic Submucosal Dissection (ESD) techniques revolutionized early lesion treatment of the digestive tract. It seemed for the first time that even flexible endoscopy could achieve R0 en-bloc resection as the goal of transanal surgical excision. The aim of this study was to compare safety and effectiveness of ESD and Transanal Endoscopic Microsurgery (TEM) for preoperatively assessed large rectal adenomas.

Patients and methods: A systematic review of the literature published between January 2001 and December 2010 was conducted. Data were integrated by original databases of published series requested to authors when needed. Pooled estimates of the proportion of patients with en-bloc resection, R0 resection, complications and recurrence in ESD and TEM prospective series for preoperatively assessed rectal adenomas were compared using random effects meta-regression analysis.

Results: A total of 11 ESD studies and 10 TEM studies were included. No studies directly compared ESD with TEM. Mean polyp size was 35 mm for ESD vs. 40 mm for TEM (P= 0.393). En-bloc resection was achieved in 87.7% for ESD vs. 99.0% for TEM patients (P<0.001). R0 resection was achieved in 73.9% for ESD vs. 89.4% for TEM patients (P<0.001). Postoperative complication rates were 8.0% for ESD vs. 8.4% for TEM patients (P=0.876). Recurrence rates were 8.4% for ESD vs. 1.8% for TEM patients (P<0.001). Need for further treatment rates were 8.4% for ESD vs. 1.0% for TEM patients (P<0.001).

Conclusions: When considering resection of preoperatively assessed large rectal adenomas, ESD appears to be equally safe to TEM. Effectiveness of ESD in achieving en-bloc and R0 resection is slightly lower, although the difference is statistically significant. Nevertheless, need for further abdominal treatment according to oncologic criteria is significantly increased after ESD. These data retrieved by comparison of single technique prospective series need to be confirmed by a large prospective trial before making any recommendation.