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## Easy and difficult colorectal endoscopic sub-mucosal dissection (ESD): Prospective study to safely speed up western training

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**Introduction:** Endoscopic sub-mucosal dissection (ESD) achieves significantly higher en bloc and R0 resection rates than endoscopic mucosal resection (EMR) and represents the best technique to achieve the curative resection of gastrointestinal superficial neoplasms. Although a level of competence can be achieved in the Western world through a stepwise training, it is unclear if it is sufficient to safely adopt ESD for colorectal lesions.

Aim: To identify pre-operative patient and lesion features prognostic of successful ESD.

**Methods:** Prospective single center study conducted by an endoscopist who achieved an initial level of competence in colorectal ESD. Inclusion criteria: Colorectal neoplasms either  $\geq$ 15 or  $\geq$ 20 mm associated or not to a scar, respectively; no features of SM-deep invasion (pit pattern V associated with a demarcation area). ESD was performed by the standard technique without expert supervision. The multivariate analysis was used to identify prognostic variables of successful ESD (en bloc resection). The following variables were evaluated: patient age and sex; lesion location, morphology, size, nodularity (>20 mm), scar, progressive endoscopist experience.

**Results:** From March 2010 to July 2014, ESD was attempted in 106 patients (mean age 66; females 43%) for 114 lesions (median size 10 cm2, range 1-85). Lesions were 85(75%) in the colon, 29(25%) in the rectum; LST-G 70 (61%), LST-NG 35(31%), Is 9(8%); with scar 11(10%) and a nodule in 27(24%). En bloc, R0 and curative resection rates were achieved in: 92(81%), 90(79%), 86(75%). SM invasion was diagnosed in 13(11%). Perforation occurred in 5(4%) without precluding a successful ESD in 3. Prognostic variables of successful ESD in colon at the multivariate analysis are reported and no significant variables were identified for rectal ESD.

**Conclusions:** A level of competence in colorectal ESD is not sufficient for a widespread adoption of ESD in the colon. Superficial neoplasms at a very high-level of difficulty for ESD are colonic either located in the cecum or flexures, larger than 40 mm, or associated with a scar. Western endoscopists without expert supervision should avoid ESD of very difficult lesions until an expertise level has been achieved.

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