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Robotic Surgery in Otolaryngology

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Introduction

One of the goals of the Fecal Immunochemical Test (FIT)-based Bowel Cancer Screening Program (BCSP) is to prevent cancer by removing high-risk advanced colorectal neoplasia. Large Non-Pedunculated Colorectal Polyps (LNPCPs), defined as sessile and flat colonic lesions ≥ 20 mm in size, are believed to be especially at risk of progression to cancer and bear the risk of sub mucosal invasion, which increases with size. In addition, endoscopic resection is technically more challenging and associated with a higher risk of adverse events and recurrence. With LNPCPs expected to account for a significant amount of care within screening programs, quality of care for these lesions is of great importance. The Dutch BCSP is controlled on quality indicators such as the cecal intubation rate, Gloucester comfort scale, and adenoma detection rate to optimize the outcome of colonoscopy. Until now, no performance indicators exist for the quality of polypectomy, whereas the need for such measures has been recognized in the field. Quality of endoscopic care for LNPCPs can be described by 2 pillars: effectiveness of endoscopic resection, displayed by technical and clinical success rate, recurrence rate, performing surveillance colonoscopy, and referral to surgery, and safety of endoscopic care for LNPCPs, displayed by adverse event rate. Current evidence suggests there is still room for improvement regarding quality of endoscopic care for LNPCPs, because recurrence after EMR is significant, compliance with surveillance guidelines is suboptimal, and noninvasive LNPCPs are frequently referred for surgery.

Application of the Robot

Although expert centers have reported their outcomes of EMRs performed on LNPCPs, little is known regarding these outcomes in a screening setting. In this performance of 2 sub studies, we evaluated the quality of endoscopic care for LNPCPs in the Dutch BCSP. Main outcomes were technical and clinical success, recurrence rate, and surveillance compliance, adverse event rate of endoscopic therapy and surgery referral rate for LNPCPs. For this study, cross-sectional data of the Dutch screening registry were used to determine the LNPCP prevalence, supplemented by longitudinal, regional screening data for in-depth analysis. Within the Dutch BCSP, citizens aged 55 to 75 years are invited to perform a FIT once every 2 years. Participants with positive FIT results are invited for a screening colonoscopy. We included all screening colonoscopies performed from the onset of the screening program in February 2014 up to January 2017. No screening colonoscopies were excluded. Within the national BCSP, endoscopists have to be certified for quality assurance purposes. Certification involves a minimum number of colonoscopies and polypectomies per year, achievement of predefined quality levels for colonoscopy (cecal intubation rate ≥ 90% and adenoma detection rate ≥ 20%), a mandatory e-learning module (including Paris classification practicing), and evaluation of polypectomy skills by live practice and videos. Formal training in advanced polypectomy was nonexistent at that time. Registration of specific parameters is obligatory within the screening program. These parameters include colonoscopy characteristics (*i.e.*, Boston Bowel Preparation Score, cecal intubation rate, cecal withdrawal time, and inspection time) and endoscopic aspects of colorectal lesions (*i.e.* size, location (proximal location was defined as proximal to the splenic flexure), Paris classification, predicted histology, and resection technique). These data are stored in a national information system, called Screen IT.

The national screening organization provided national screening data, consisting of the total number of index colonoscopies and the number of index colonoscopies with ≥ 1 LNPCP detected between February 2014 and January 2017. Of the latter, colonoscopy characteristics and endoscopic aspects were described. Conclusions regarding histology, as evaluated by accredited pathologists, were not available for individual polyps because of a lack of coupling of endoscopy reports and pathology data. Furthermore, because only index colonoscopies were collected within the national screening organization, endoscopic or surgical follow-up data were also not available.

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