

# New Paradigms in Polypectomy

## Resect and Discard, Diagnose and Disregard



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### KEYWORDS

• Optical diagnosis • Colonic polyps • Colorectal cancer • Narrow band imaging

### KEY POINTS

- There are major potential advantages for patients, clinicians, and health care providers if optical diagnosis rather than conventional histopathology is used to characterize small polyps at colonoscopy.
- Correct allocation of surveillance interval is the key outcome measure in assessing the accuracy and clinical acceptability of a Resect and Discard, Diagnose and Disregard strategy.
- Standards for achieving high-quality optical diagnosis have now been defined.
- High levels of accuracy in optical diagnosis of small polyps have been achieved at expert centers, but this has not been replicated in community practice.
- There is a need for improved training, assessment, and quality assurance of optical diagnosis for a resect-and-discard, diagnose-and-disregard strategy to become widely acceptable and a standard of care.

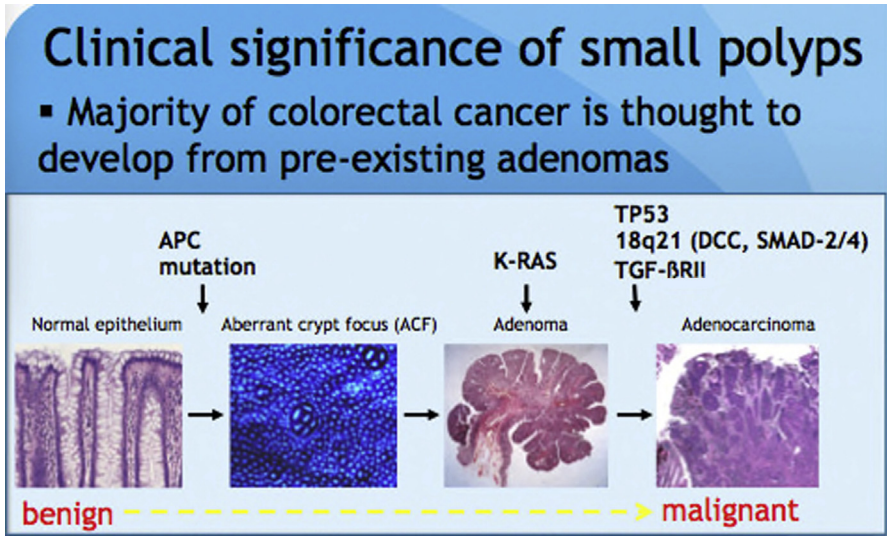
### INTRODUCTION

Colorectal cancer (CRC) is one of the leading causes of morbidity and mortality in the Western world. In the United States alone, 135,260 people were diagnosed with and 51,783 died of CRC in 2011.<sup>1</sup> Most sporadic CRCs develop from adenomas in a well-described adenoma-carcinoma genetic sequence **Fig. 1**.<sup>2</sup> It involves a progression from normal epithelium to low-grade dysplastic adenoma to larger, protruding adenoma with high-risk features (high-grade dysplasia or villous component) and finally to invasive cancer as a result of mutations in several genes, including APC, KRAS, and p-53.<sup>2</sup> This pathway is thought to account for approximately two-thirds of all CRCs (see **Fig. 1**).

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**Fig. 1.** Histopathologic changes and genetic events in colorectal tumorigenesis. TGF, transforming growth factor. (Data from Refs.<sup>2,79–81</sup>)

Colonoscopy offers immediate therapeutic capability and resection of adenomas to halt the adenoma-carcinoma sequence, reducing the risk of CRC development. The evidence that colonoscopy prevents incident CRC and reduces mortality is indirect but substantial. Cohort studies of colonoscopy and polypectomy have suggested that, against Surveillance Epidemiology and End Results data, the rate of CRC detected was about 80% lower after polypectomy than expected for the population.<sup>3,4</sup> An Ontario population-based cohort study of 2,412,077 individuals 50 to 90 years of age followed over 14 years found that for every 1% increase in complete colonoscopy rate, the hazard of death from CRC decreased by 3%.<sup>5</sup> Additional evidence for a protective effect of colonoscopy with polypectomy can be extrapolated from flexible sigmoidoscopy trials, with the most recent randomized controlled trial<sup>6</sup> that enrolled 170,432 participants demonstrating that the incidence of CRC in people attending for screening was reduced by 33% (0.67; 95% confidence interval [CI] 0.60–0.76) and mortality by 43% (0.57; 95% CI 0.45–0.72). Therefore, population-based screening is widely recommended and implemented in Europe and the United States.<sup>7,8</sup> In the United States alone, more than 14 million screening colonoscopies are performed each year.<sup>9</sup>

Currently, most polyps seen at colonoscopy are removed by endoscopic resection and sent for histopathology. Bleeding and perforation are the most common complications of polypectomy, with risks of 0% to 4%<sup>10,11</sup> and 0% to 0.23%,<sup>12,13</sup> respectively, reported in the literature, although they are likely to be higher in routine and community clinical practice.

### SIGNIFICANCE OF SMALL COLORECTAL POLYPS

Increased awareness of the importance of colonoscopic quality in addition to advanced technology available to operators has led to increased polyp detection rates, at least in the published literature. More than 90% of polyps detected at colonoscopy are small (6–9 mm) or diminutive ( $\leq 5$  mm), with the latter making up

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