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How to Detect Sessile Serrated Adenoma/Polyps

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See “Endoscopic Features of Mucous Cap Polyps: A Way to Predict Serrated Polyps” by Brian T. Moy, Faripour Forouhar, Chia-Ling Kuo, et al., on page 368-374.

Interval colorectal cancer (CRC) is defined as CRC diagnosed after a negative screening or surveillance colonoscopy (no cancer detection) and before the next recommended follow-up examination.¹ It has been generally accepted that most CRCs are derived from adenomatous polyps. Therefore, if an adenomatous polyp is detected and removed during a regular colonoscopy, the development of CRC can be prevented. Actually, previous studies have shown that the colonoscopic removal of adenomatous polyps reduces the mortality from CRC.² However, interval CRCs have been consistently reported in patients who have undergone a complete colonoscopy.^{3,4}

There are several explanations for the development of interval CRCs including: missed lesions, new lesions, and incomplete resected lesions.⁵ Recent studies have reported that interval CRCs exhibit some characteristics such as a predominant proximal location, association with the CpG island methylator phenotype (CIMP), and microsatellite instability.^{5,6} Further, these characteristics of interval CRCs overlap with sessile serrated adenomas/polyps (SSA/Ps). In recent years, there has been a growing interest in SSA/Ps.

Although only 20% of serrated polyps are SSA/Ps, SSA/Ps are considered more important than the other serrated

polyps due to their malignant potential. SSA/Ps have been recognized as precursors of CIMP-positive and *BRAF* mutant CRCs that are often associated with microsatellite instability.^{7,8} Unfortunately, the diagnosis of SSA/Ps is easy to miss due to their indistinctive endoscopic morphologies. According to recent studies, the detection of SSA/Ps correlates with the gastroenterologist's experience and skills.⁹ Therefore, it is crucial to know about the endoscopic features of SSA/Ps. Previous studies have reported that SSA/Ps exhibit presence of several endoscopic characteristics such as a mucous cap, a rim of debris or bubbles, an alteration of the contour of a mucosal fold, the obscuring of an underlying submucosal vessel, a nodular surface and a dome-shaped protuberance.^{10,11} Following analysis of 158 SSPs, Tadepalli et al. reported that a mucous cap (63.9%) and peripheral rim (51.9%) were the most common characteristics of SSPs; further, these characteristics showed a remarkable positive association with SSPs (odds ratio [OR] 3.8, $p=0.0002$).¹⁰ Murakami et al. showed that 95%–100% of SSA/Ps with or without dysplasia had a mucous cap.¹²

In a current issue of *Clinical endoscopy*, Moy et al. investigated whether a mucous-capped polyp, one of the most common endoscopic features of SSA/Ps, can predict the presence of serrated polyps.¹³ They examined the endoscopic features of 147 mucous-capped polyps to determine if they could predict SSA/Ps. Among these, there were 127 (86%) serrated polyps (right-sided hyperplastic polyps, SSA/Ps, or traditional serrated adenomas), and only 43 (29%) SSA/Ps.¹³ To find the predictive features of SSA/Ps, they also evaluated other endoscopic characteristics of mucous-capped polyps such as polyp size (≥ 10 mm), the distinct border, elevation, rim of debris, location, varicos vessels, nodular surface and alterations in the

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fold contour. It was observed that 39 polyps of 43 SSA/Ps (91%) and 56 polyps of 104 non SSA/Ps (54%) were combined with varicous vessels, and these results were found to be statistically significant (adjusted OR, 10.75; $p=0.000$). Based on these findings, the researchers concluded that mucous- capped polyps are more likely to be serrated polyps and the presence of a mucous cap combined with varicous vessels was a significant predictor for SSA/Ps.

This study revealed some interesting results; however, these results should be interpreted with caution.

Although previous studies have shown that most SSA/Ps had a mucous cap, this study demonstrated that most mucous- capped polyps were unfortunately not SSA/Ps (43/147, 29%). Additionally, while most mucous- capped SSA/Ps had varicous vessels (39/43, 91%), the percentage of SSA/Ps among mucous- capped polyps with varicous vessels was only 41% (39/95). Therefore, it is insufficient to conclude that the combined presence of a mucous cap and varicous vessels is a predictor for SSA/Ps. Additionally, there exists a possibility that further analysis according to the number of morphological characteristics of mucous capped polyps would provide more information and better predictability for SSA/Ps.

Recent studies have attempted to identify the morphological characteristics of SSA/Ps using several advanced imaging techniques such as narrow band imaging (NBI), image enhanced endoscopy or autofluorescence imaging.^{7,14} According to a recent meta-analysis, most of studies conducted using NBI and NBI proved to have a higher sensitivity for detecting SSA/Ps compared to other endoscopic imaging techniques.¹⁵ However, the sensitivity of NBI for detecting SSA/Ps has shown variations, depending on the endoscopic features. For example, indistinct borders (OR, 3.7) and a cloud-like surface (OR, 2.65) were found to be associated with SSA/Ps on high-resolution white light, whereas on an NBI, a cloud-like surface (OR, 4.91), indistinctive borders (OR, 2.38) and dark spots inside the crypts (OR, 2.05) were correlated with SSA/Ps.¹¹

Based on current studies, there are no clear and definite endoscopic features to predict serrated lesions, especially SSA/Ps. However, in general practice, it is paramount to make efforts not to miss the serrated polyps. This can be accomplished by gaining an in-depth knowledge of the several endoscopic characteristics of serrated polyps and conducting a meticulous

examination of the bowel mucosa.

Conflicts of Interest

The authors have no financial conflicts of interest.

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