Endoscopic Recognition and Management Strategies for Malignant Colorectal Polyps: Recommendations of the US Multi-Society Task Force on Colorectal Cancer

**Goal:** Review endoscopic features of lesions associated with cancer and provide guidance on management of these lesions

### Endoscopic Recognition and Management Strategies for Malignant Colorectal Polyps: Recommendations of the US Multi-Society Task Force on Colorectal Cancer

**Optimal management is based on endoscopic diagnosis.**

Before endoscopic resection, every colorectal lesion detected should be assessed based on: **morphology,** **surface,** and **vessel pattern,** to help identify lesions with high risk of deep submucosal invasion or not.

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**What is a Malignant Polyp?**

- A colorectal lesion with cancer invading submucosa but **not extending** into the muscularis propria
- AKA submucosally invasive lesion, carcinoma in situ, or intramucosal carcinoma
- Should **NOT** be confused with invasive colon cancer

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**Endoscopic surface pattern classifications**

**1) Narrow Band Imaging International Colorectal Endoscopic Classification (NICE)**

- **Type 1** (serrated class: either hyperplastic or sessile serrated polyp)
- **Type 2** (conventional adenoma)
- **Type 3** (lesions with disruption of surface pattern and vessel structure)

**Specific (but not sensitive) for deep submucosal invasive cancer**

**2) JNET classification**

- **NICE** is limited due to difficulty in distinguishing low grade dysplasia, high grade dysplasia, and superficial submucosal invasion in type 2 lesions
- Divides NICE type II into JNET 2a and 2b (assoc with high grade dysplasia and superficial submucosal invasion)

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**By Andrew Yu**

3) Kudo Pit Pattern Classification
- Requires magnification colonoscopy with dye spary and allows for evaluation of malignant polyps through characterization of pits, which are openings for crypts
- 6 patterns
  - Type I and II: characteristic of normal, serrated, or inflammatory polyps
  - Type III – V: considered to indicate dysplastic and malignant changes

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Description</th>
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<tbody>
<tr>
<td>Type I</td>
<td>Round pit (normal pit)</td>
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<tr>
<td>Type II</td>
<td>Asteroid pit</td>
</tr>
<tr>
<td>Type III</td>
<td>Tubular or round pit that is smaller than the normal pit (type I)</td>
</tr>
<tr>
<td>Type IIIa</td>
<td>Tubular or round pit that is larger than the normal pit (type I)</td>
</tr>
<tr>
<td>Type IV</td>
<td>Dendritic or gyrus-like pit</td>
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<tr>
<td>Type V</td>
<td>Irregular arrangement and sizes of III, IIIa, IV type pit pattern</td>
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<tr>
<td>Type VN</td>
<td>Loss or decrease of pits with an amorphous structure</td>
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</tbody>
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Endoscopic surface pattern classifications (cont.)

3) Non-lifting Sign
- When injecting fluid underneath polyp fails to lift it
- Suggests deep submucosal invasion or fibrosis (if there was prior biopsy, cautery, or tattoo)

Figure 6. Nongranular laterally spreading tumors (LST-NG). (A, B) Smooth surface. (C, D) Pseudodisrupted.

Figure 5. Granular laterally spreading tumors (LST-G). (A, B) Nodular surface. (C, D) Mixed nodular morphology.
NICE classification type 3 or Kudo classification type V

Question 1: Which endoscopic features in a colorectal polyp predict submucosal cancer?

Nonpedunculated lesions:
- Should be biopsied and tattooed, and referred to surgery
- NICE 3 features had 94% accuracy and 96% negative predictive value.

Pedunculated lesions:
- Endoscopic polypectomy, en bloc through stalk

Question 2: When deep submucosal cancer is suspected, how should nonpedunculated and pedunculated polyps be managed?

Nonpedunculated lesions:
- Should be biopsied and tattooed, and referred to surgery
- NICE 3 features had 94% accuracy and 96% negative predictive value.

Pedunculated lesions:
- Endoscopic polypectomy, en bloc through stalk

Question 3: Which endoscopic features predict risk of superficial submucosal invasion in a sessile polyp?

- En bloc endoscopic resection, instead of piecemeal resection, when feasible
- In LST-G, at least the nodular area should be considered for en bloc resection
- All pedunculated polyps should be resected en bloc.

Question 4: What is the optimal endoscopic method of resection for sessile and pedunculated malignant polyps with superficial submucosal invasion?

- En bloc endoscopic resection, instead of piecemeal resection, when feasible
- In LST-G, at least the nodular area should be considered for en bloc resection
- All pedunculated polyps should be resected en bloc.

Question 5: Which histologic features in non-pedunculated malignant polyps are associated with lymph node metastasis and therefore an increased risk of local or regional recurrence?

- Poor tumor differentiation,
- Lymphovascular invasion, submucosal invasion depth > 1 mm, tumor involvement of the cautery margin, or tumor budding

Question 6: Which histologic features in pedunculated malignant polyps are associated with lymph node metastasis and therefore an increased risk of local or regional recurrence?

- Poor tumor differentiation,
- Lymphovascular invasion, tumor within 1 mm of resection margin

Figure 9. Algorithm for approach to malignant polyp assessment and management.