

Invasive carcinoma dimensions (Core and Non-core)

Depth of invasion is one of the main histological risk factors associated with clinical outcome and used for patient management.^{1,2} Submucosal invasion ≥ 1 millimetre (mm) is associated with an increased risk of lymph node metastasis.³⁻⁵ Depth of invasion is the maximum thickness of invasive carcinoma, measured in mm, from the deepest aspect of the invasive tumour in the submucosa to either the overlying muscularis mucosae or the surface of the polyp, if the carcinoma is ulcerated or has overgrown the precursor polyp. This requires well-oriented sections perpendicular to the surface. If the resection is piecemeal, the maximum depth of invasion in any fragment is used.

A semi-quantitative evaluation of the depth of invasion into 3 or 4 levels may still be used in some parts of the world as follows:

- Haggitt levels 1 (head), 2 (neck), 3 (stalk) and 4 (beyond stalk) for pedunculated polyps, with significant increased risk of lymph metastasis for level 4 polyps.^{2,6} This requires intact polyp with well-oriented sections from the head to the base.
- Kikuchi levels sm1 (superficial submucosa), sm2 (mid submucosa) and sm3 (deep submucosa) for sessile polyps, with significant increased risk of nodal metastasis for sm3 polyps.^{7,8} This requires the presence of the muscularis propria to define the deep boundary of the submucosa, which is often absent in endoscopic resection specimens. The Kikuchi system can be more reliably applied in transanal endoscopic microsurgery (TEMs), transanal minimally invasive surgery (TAMIS) and endoscopic full thickness resection (EFTR) specimens.

The maximum width of invasive carcinoma can also be recorded. Tumours with an invasive component ≥ 4 mm are more likely to be associated with lymph node metastasis.^{9,10} If the resection is piecemeal, the maximum width of invasion in any fragment is used.

References

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