

Risk assessment in the malignant colorectal polyp

A malignant colorectal polyp is defined as adenocarcinoma found in an endoscopically resected polypoidal tumour. This can either represent (1) submucosal invasive carcinoma developing in a pre-existing conventional or serrated adenoma or (2) polypoidal carcinoma with no evidence of residual adenoma.

The clinical significance of the malignant polyp relates to the potential for residual disease (either adenoma or adenocarcinoma at the polypectomy site), lymph node or haematogenous metastases and the risk of synchronous or metachronous tumour particularly in the setting of background serrated polyposis, Lynch syndrome, FAP or IBD. Approximately 50-60% of endoscopically removed malignant polyps will be followed by a surgical resection because of adverse risk factors in the tumour.

Pathological risk factors in malignant polyps

Pathological examination can provide a risk assessment based on morphological features of the polyp.

Pathological risk factors predict for (1) lymph node metastasis, (2) the likelihood of residual disease at the polypectomy site and (3) overall tumour specific survival. Adverse factors can be of two different types:

1) Qualitative

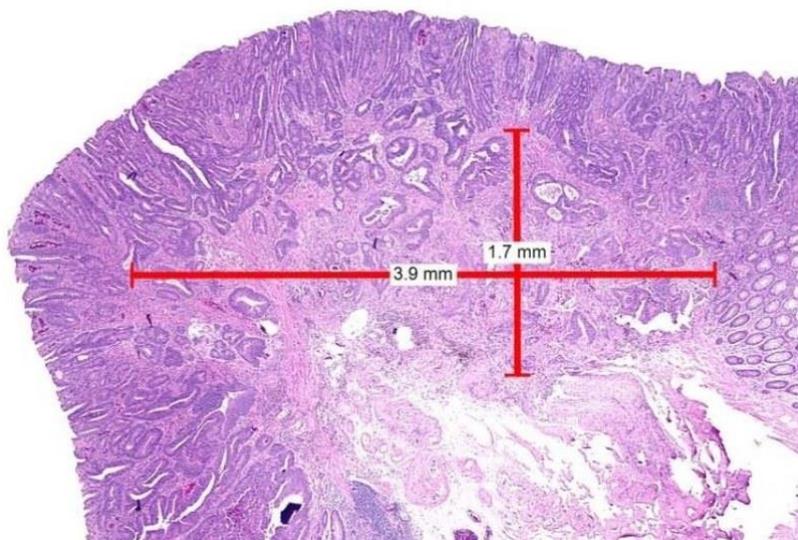
- Poor tumour differentiation
- High level of tumour budding
- Vascular invasion
- Positive margin status
- Rectal site (probable)

2) Quantitative

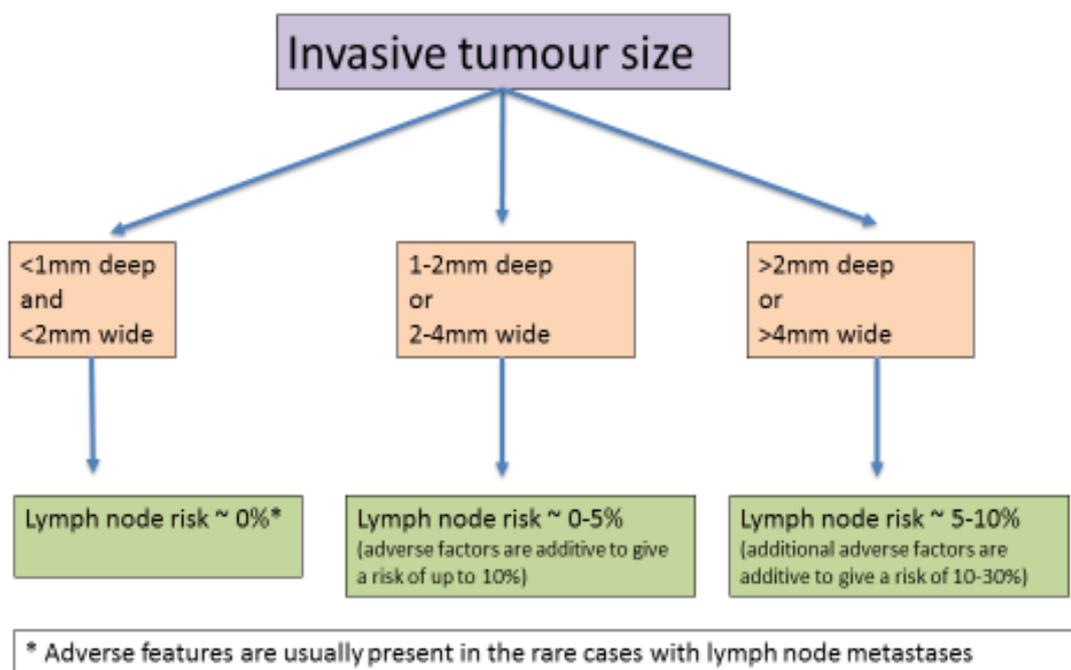
- Large invasive tumour size - depth of invasion, width of tumour invasion

Invasive tumour size is best recorded by direct measurement on the microscopic slide. Other measures of invasion size include Kikuchi and Haggitt levels. Kikuchi levels can only really be assessed in resection specimens where the tumour orientation with respect to the muscularis mucosae can be appreciated. Haggitt levels only have prognostic value in pedunculated polyps with a definite stalk.

The size of the invasive tumour is the most important risk factor for lymph node metastasis. Adverse outcome is associated with **width $\geq 4\text{mm}$ or depth $\geq 2\text{mm}$.**



- Adverse factors are summative for the risk of lymph node metastasis.
 - No adverse factors ~ 0% risk
 - ≥ 2 adverse factors >10% risk
- Involvement of the polypectomy margin is only a risk for residual disease at the polypectomy site. It is not a risk factor for metastatic disease.



Further reading:

Brown I et al. Adverse histological features in malignant colorectal polyps: a contemporary series of 239 cases. *J Clin Pathol.* 2015 Sep 30

Ueno et al. Risk factors for an adverse outcome in early invasive colorectal carcinoma. *Gastroenterology* 2004; 127:385-94