

Lymph Node Metastases in Malignant Colonic Polyp with Favourable Histology Detected by PET CT

Dear Editor,

With the increased use of colonoscopy screening, many colonic cancers are detected as malignant or invasive polyps.¹ Polypectomy is considered as curative in malignant polyps with favourable histology.² Here is a case of lymph node metastases detected on positron emission tomography computerized tomography (PET CT) in a malignant polyp with favourable histology.

Case Report

A 49-year-old man presented with malaise and shortness of breath for 1 month. Physical examination showed pallor. His blood picture showed hypochromic, microcytic anaemia with haemoglobin of 8.3 gm/dl. Colonoscopy [Olympus, Tokyo, Japan] showed a 3.0 cm large pedunculated polyp at 35 cm from the anal verge in the descending colon. An Endoloop [Olympus, Tokyo, Japan] was placed at the base of the polyp with an Endoloop Applicator [Olympus, Tokyo, Japan]. En bloc resection of the polyp was performed with Sensation™ Polypectomy Snare [Boston Scientific, Nanterre, France].

Histology of the polyp showed a completely removed tubulovillous adenoma with severe dysplasia (Fig. 1). Focal transformation into well differentiated adenocarcinoma (Fig. 2) was observed at the head of the polyp. Areas of submucosal invasion were limited to the head of the polyp. The stalk of the polyp was identified and a clear resection margin of 3.2 mm was achieved.

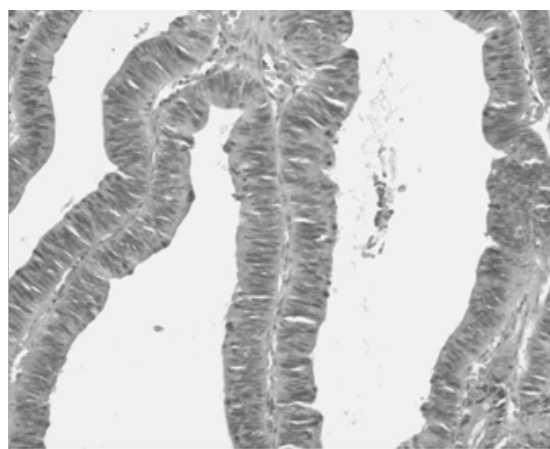


Fig. 1. Histology showing tubulovillous adenoma (Magnification X200) by haematoxylin eosin staining.

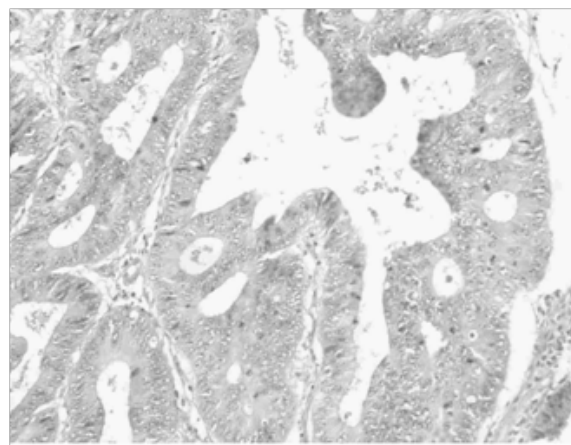


Fig. 2. Histology showing well differentiated carcinoma at the head of the polyp (Magnification X200) by haematoxylin eosin staining.

The pericolic lymph nodes showed moderately increased 18 Fluorodeoxyglucose (18FDG) activity with a maximum Standard Uptake Value (SUVmax) of 5.6 on PET CT scan. The largest pericolic lymph node was 0.5 cm in size. The descending colon showed mild uptake with SUVmax 2.8, which can be related to post-procedural changes. His carcinoembryonic antigen was normal. The CT of the thorax, abdomen and pelvis were normal.

He underwent a repeat colonoscopy with tattooing of the polypectomy site followed by a laparoscopic left hemicolectomy. On histology, the previous polypectomy site showed early regenerative changes with no evidence of residual dysplasia or malignancy. The resection margins were clear. Two of the 9 pericolic lymph nodes sampled had evidence of metastatic adenocarcinoma without capsular involvement (Fig. 3).

Discussion

The malignant polyp in this patient was a well differentiated adenocarcinoma, with clear resection margin of more than 2.0 mm, without any evidence of lymphovascular invasion and Haggitt's level 1 invasion.³ These are all the hallmarks of a favourable histology.^{1,2,3} With a clear margin of resection achieved during endoscopy, the treatment of his malignant polyp by polypectomy was considered curative.^{1,2,3} However, because of his concern over the diagnosis of a malignant polyp, he decided to undergo a PET CT on his own.

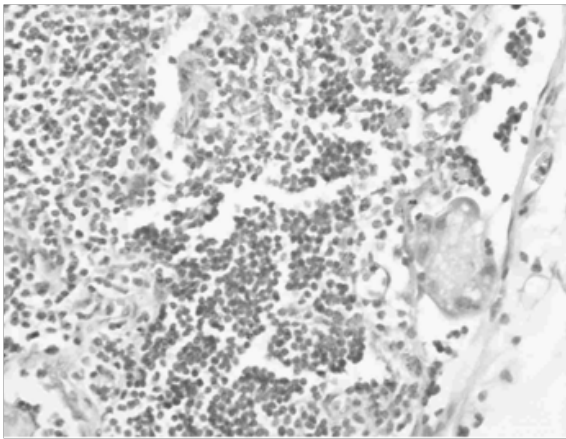


Fig. 3. Histology showing metastatic adenocarcinoma in lymph node (Magnification X400) by haematoxylin eosin staining.

Unfortunately, the PET CT showed increased activity in pericolic lymph nodes. After discussion on the possible causes of the increased activity in his pericolic lymph nodes, he decided on surgical resection and lymph node biopsy. Surprisingly, sampling of pericolic lymph nodes showed metastatic adenocarcinoma involving 2 of the 9 lymph nodes sampled.

Although, his initial polyp was large at 3.0 cm in size, the probability of missing a microinvasion in the initial endoscopic polypectomy sample was very low, when the standard protocol is to embed all polypectomy specimens without trimming, irrespective of the size of the polyp, as shown in prior literature.^{4,5} This was further shown from the laparoscopic hemicolectomy specimen where the previous polypectomy site showed no evidence of residual dysplasia or malignancy.

Historically, Calacchio *et al* were the first to suggest in 1981 that malignant polyps with favourable histology can also have lymph node metastases.⁶ However, subsequent studies failed to show lymph node metastases in malignant polyps with favourable histology.³ This topic was recently revisited by Wasif *et al*.¹ Their study found lymph node metastases in malignant polyps considered to have favourable histology.¹ The incidence of lymph node metastases in this study was 5.5%. This is similar to the pooled incidence rate on 5.1% reported by Hassan *et al*.³

Considering the studies by Wasif *et al*, Calacchio *et al* and this case report, lymph node metastases, although uncommon, can occur in malignant polyps with favourable histology.^{1,6} Fortunately for this patient, the lymph node metastases was detected on PET CT. However, more studies are needed to conclude if PET CT can help to identify lymph node metastases in this group of low risk patients.

Furthermore, there is a lack of sensitivity or reliability of PET CT in malignant polyps that are less than 0.7 cm. This is because malignant polyps that are less than 0.7 cm

in size may not react to PET CT, making the interpretation of PET CT in these cases difficult. However, although small malignant lymph nodes do not have abnormal 18FDG uptake, the mean SUVmax of malignant lymph nodes is higher than in benign lymph nodes.⁷

This study demonstrated a higher sensitivity, and, a higher positive predictive value when using SUVmax to detect malignant lymph nodes.⁷ Therefore, in patients with a malignant polyp of less than 0.7 cm in size, the mean SUVmax may be a better criteria for detecting malignant lymph nodes rather than an abnormal 18FDG uptake, or, nodal diameter.⁷

Another method that can be considered to stage malignant polyp is endoscopic ultrasound (EUS). The accuracy of EUS in staging of colorectal tumour has been reported to be as high as 93%.⁸ However, the accuracy of EUS for staging of early tumour is also poor.⁹ This has recently been improved by the development of high frequency miniprobos.

High frequency miniprobos can demonstrate in detail the 3 layers of the submucosa.¹⁰ The use of high frequency (20 Hz) miniprobos can increase the accuracy of staging of early malignant tumours of the colon to 88%.¹⁰ Therefore, one future area of research is the use of both PET CT and EUS in staging of malignant polyps of less than 0.7 cm in size.

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