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Case Report on Alpha-Feto Protein Positive Colorectal Cancer

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Introduction

Alpha-fetoprotein (AFP) is rarely associated with colorectal cancer (CRC) and has not been described in Brunei. AFP is commonly produced by hepatocellular carcinoma (HCC) and yolk sac tumours. It can be a reliable tumour marker and used in diagnosing embryonal testicular tumours, HCC and yolk sac tumours. It is extremely rare to have a primary AFP-producing CRC [1]. This case highlighted the importance of recognizing a case of AFP-producing colorectal cancer.

Case Report

This case report presents a 59 year old gentleman with 2 months history of intermittent fresh per rectal bleeding. He had a previous history of hepatitis B infection. Laboratory results showed Hb of 9.4g/dL (normal: 13.5 - 17.9 g/L) and his tumour markers were elevated to 9.0 for CEA (normal: 0.0 - 5.0 ng/mL), and AFP was 212.6 (normal: 0.9-8.8 ng/mL) at presentation.

Triphasic computed tomography (CT) of the liver revealed no suspicious focal lesions. Instead, it showed a likely intussusception at the hepatic flexure, and no evidence of bowel dilatation. However, subsequent colonoscopy revealed a large friable tumour obstructing the whole lumen of the proximal transverse colon. Biopsy taken showed a grade 2 moderately differentiated adenocarcinoma.

This warranted an emergency extended right hemicolectomy with stapled functional side-to-side anastomosis. Histopathological examination showed a Duke C mucinous adenocarcinoma (T3N2b), with satisfactory resected margins. Interestingly, it also stained positive for AFP. The postoperative period was uneventful and serum AFP level normalised. With adjuvant chemotherapy, there was no evidence of recurrence after a year's surveillance follow-up.

Discussion

This case highlighted the unexpected incidence and importance of recognizing a case of AFP-producing CRC. Typically, high levels of AFP raised the suspicion of hepatocellular carcinoma (HCC) or yolk sac tumour (e.g. testicular teratoma). With the previous burden of hepatitis B infection and raised serum AFP level, the initial working diagnosis was to exclude a primary liver malignancy. This explained why a triphasic CT liver was performed. The CT scan incidentally revealed a proximal colonic tumour, expediting an already planned colonoscopy.

The first case of AFP-producing CRC was described by Nakajima et al in 1985, and there were only a handful of cases and reports published to date in the English literature [2].

The main distinctive features of AFP-producing tumour include high metastasis rate and liver metastasis at initial diagnosis (12-25%). In a retrospective study by Kong et al, as much as 81.9% of patients developed metachronous metastasis, and the liver was the commonest site, with a rate of 53.1%. They also found that AFP-high CRC (AFP ≥ 200 ng/ml) had a higher likelihood of developing stage IV disease and liver metastasis when compared to AFP-low group AFP(<200ng/ml) [3]. With such clinical behaviours and no standardised treatment, they are associated with more aggressive progression and poorer prognosis; that about half of the patients died within a year of therapeutic intervention [4].

Our case was classified as stage IIIC (T3N2M0). As he presented with complete obstruction of the transverse colon, an urgent extended right hemicolectomy was performed. He was then started on adjuvant therapy with CAPOX regimen. A case reported in Taiwan with AFP-producing CRC (Stage IIIc) only had curative colectomy and showed no recurrence within 5 months of follow-up despite not having chemotherapy [5]. Alternatively, Nakamura et al., opted for neoadjuvant chemoradiotherapy followed by surgery and three months of adjuvant chemotherapy with CAPOX for stage IIIc AFP-producing CRC. Patient had no recurrence within the six months follow-up [4]. All 3 different regimens had comparable good outcomes and imply the current lack of uniform standardised treatment for AFP-producing CRC.

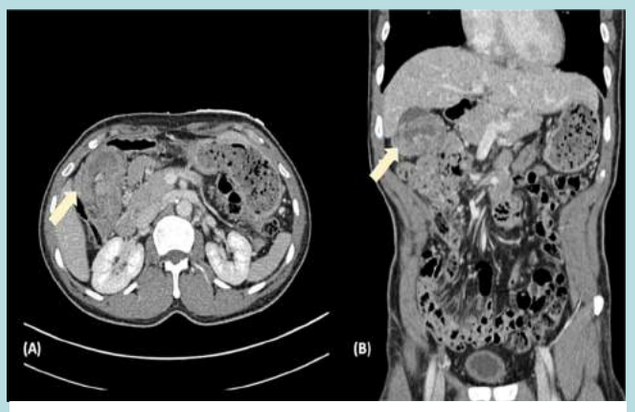

Fig 1: CT showing intussusception at the hepatic flexure containing low attenuation mass (arrow) in the (A) axial and (B) coronal view

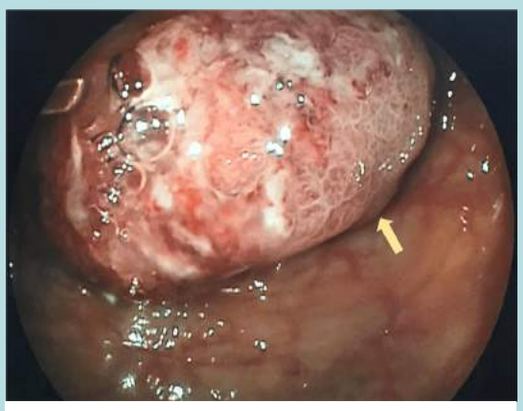

Fig 2: Colonoscopy showed a large friable tumour obstructing the whole of the lumen

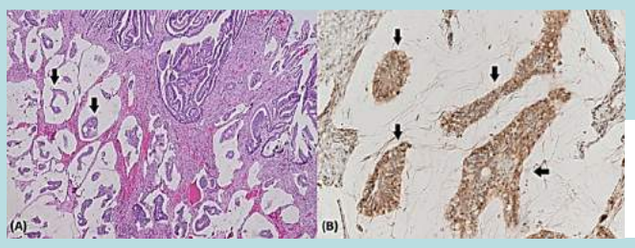

Fig 3: Adenocarcinoma with groups of neoplastic cells (black arrows) floating in pools of mucin: (A) H&E staining; (B) positive immunochemistry for AFP (x200)

In this case, it is crucial to emphasise that monitoring the serum AFP level carries significant implications . It serves not only to detect the recurrence of AFP-producing CRC, or liver metastases but also play a role in early detection of HCC, given the patient's history of hepatitis B infection. We recommend regular monitoring of AFP/CEA level every 3 to 6 months, ultrasound follow-up every 6 months, and annual surveillance CT scan with colonoscopy.

Conclusion

The use of serum AFP level may serve a dual role, not only in screening for HCC but also for colorectal cancer. Particularly, this case report highlights the significance of recognizing atypical blood results promptly, as timely intervention played a crucial role in preventing a potential oversight in the diagnosis of CRC.

References

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