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Synchronous Colonic and Appendicial Adenocarcinoma

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Abstract

Colon cancer has had an increasing incidence in the last years due to many factors including higher lifetime expectancy in the population and the improvement of the various diagnostic modalities as well as the availability of different imaging modalities that became more widely available in the hospitals. However this is not the case for appendicial tumors as their small caliber and their site makes the diagnosis overlooked, and most of the time found during histopathological exam.The combination of both pathologies in the same patient is even more rare, but still a possible event.

Introduction

Appendicial adenocarcinoma is rare, comprising no more than 6 % of all primary appendicial carcinomas , and mostly are only diagnosed histopathologially as the clinical and radiological pictures is similar to acute appendicitis. The synchronous occurrence of colonic and appendicial carcinoma , defined as diagnosing both in a period of 6 months , occurs at a rate of less than 1 % of all synchronous tumors, rendering the case we present as an extreme rarity.

Case Report

This is a 71 year old male patient, not known to have any previous medical illness, nor has he undergone any previous operations, has arrived to the emergency casualty complaining of lower abdominal pain, vague in nature during the past month,worsening over time, associated with vomiting the day before presentation, which was nonbloody nonbilious.The last bowel motion was 2 days ago. There has been no significant weight loss, and no family history for malignancy.

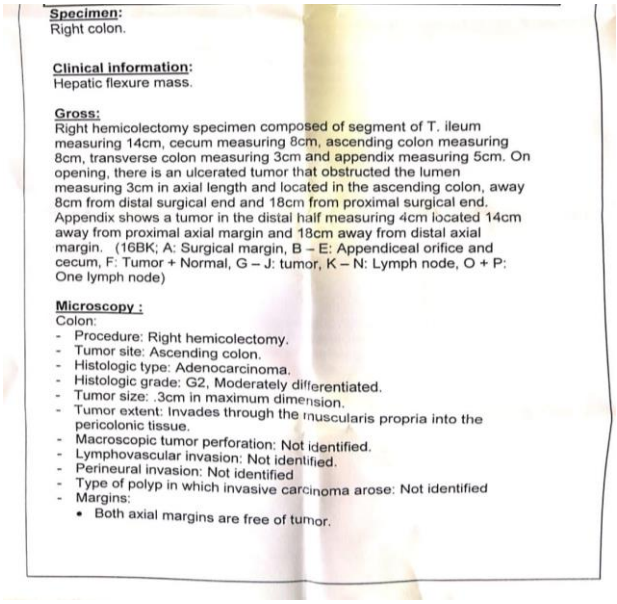
Physical exam showed blood pressure of 122/75 pulse rate of 90 and temperature of 37 C, the abdomen was soft and lax with right lower quadrant tenderness on deep palpation.

Basic labs showed white count of 13000, hemoglobin of 10.1, platelet count of 215000 , sodium level was 138 potassium level was 5.0 and his creatinine measured 0.75.

CT of the abdomen withintravenous contrast was done:

Blue arrowhead: colonic tumor **Red arrowhead:** appendicial tumor

The patient was admitted to the hospital and underwent right hemicolectomy, his histopathology (see below) result showed synchronous appendicial and colonic adenocarcinoma.

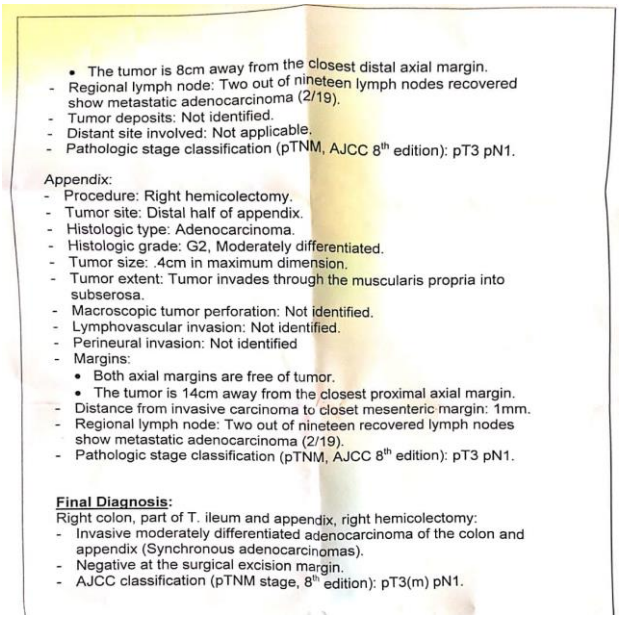


Specimen:
Right colon.

Clinical information:
Hepatic flexure mass.

Gross:
Right hemicolectomy specimen composed of segment of T. ileum measuring 14cm, cecum measuring 8cm, ascending colon measuring 8cm, transverse colon measuring 3cm and appendix measuring 5cm. On opening, there is an ulcerated tumor that obstructed the lumen measuring 3cm in axial length and located in the ascending colon, away 8cm from distal surgical end and 18cm from proximal surgical end. Appendix shows a tumor in the distal half measuring 4cm located 14cm away from proximal axial margin and 18cm away from distal axial margin. (16BK; A: Surgical margin, B – E: Appendiceal orifice and cecum, F: Tumor + Normal, G – J: tumor, K – N: Lymph node, O + P: One lymph node)

Microscopy :
Colon:
- Procedure: Right hemicolectomy.
- Tumor site: Ascending colon.
- Histologic type: Adenocarcinoma.
- Histologic grade: G2, Moderately differentiated.
- Tumor size: .3cm in maximum dimension.
- Tumor extent: Invades through the muscularis propria into the pericolonic tissue.
- Macroscopic tumor perforation: Not identified.
- Lymphovascular invasion: Not identified.
- Perineural invasion: Not identified
- Type of polyp in which invasive carcinoma arose: Not identified
- Margins:
  - Both axial margins are free of tumor.

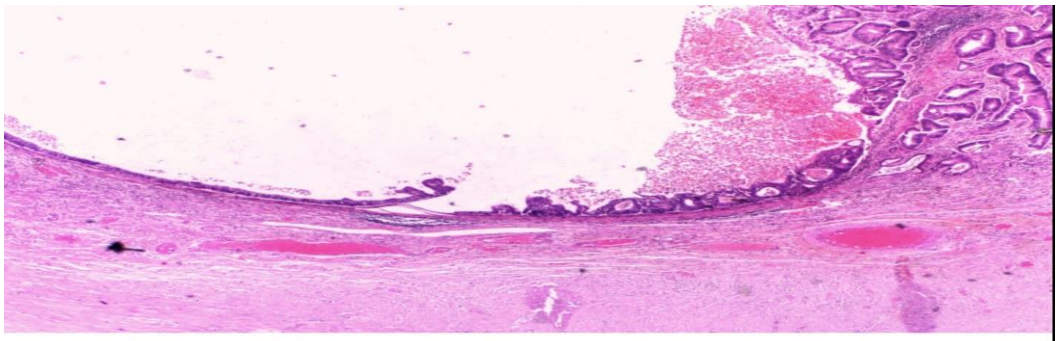


  - The tumor is 8cm away from the closest distal axial margin.
- Regional lymph node: Two out of nineteen lymph nodes recovered show metastatic adenocarcinoma (2/19).
- Tumor deposits: Not identified.
- Distant site involved: Not applicable.
- Pathologic stage classification (pTNM, AJCC 8th edition): pT3 pN1.

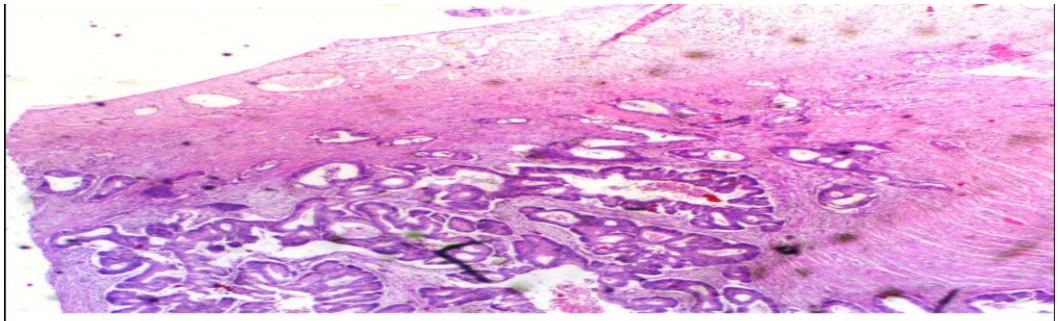
Appendix:
- Procedure: Right hemicolectomy.
- Tumor site: Distal half of appendix.
- Histologic type: Adenocarcinoma.
- Histologic grade: G2, Moderately differentiated.
- Tumor size: .4cm in maximum dimension.
- Tumor extent: Tumor invades through the muscularis propria into subserosa.
- Macroscopic tumor perforation: Not identified.
- Lymphovascular invasion: Not identified.
- Perineural invasion: Not identified
- Margins:
  - Both axial margins are free of tumor.
  - The tumor is 14cm away from the closest proximal axial margin.
- Distance from invasive carcinoma to closet mesenteric margin: 1mm.
- Regional lymph node: Two out of nineteen recovered lymph nodes show metastatic adenocarcinoma (2/19).
- Pathologic stage classification (pTNM, AJCC 8th edition): pT3 pN1.

Final Diagnosis:
Right colon, part of T. ileum and appendix, right hemicolectomy:
- Invasive moderately differentiated adenocarcinoma of the colon and appendix (Synchronous adenocarcinomas).
- Negative at the surgical excision margin.
- AJCC classification (pTNM stage, 8th edition): pT3(m) pN1.

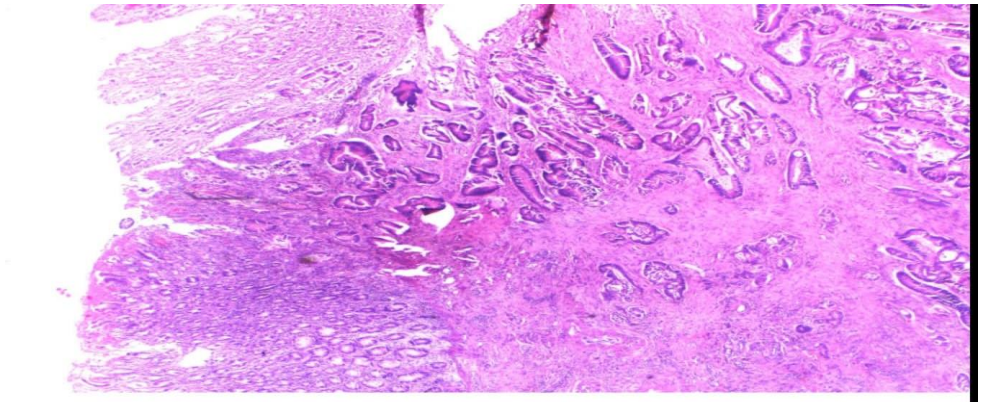
And here are the histopathological slides



Appendiceal adenocarcinoma: notice the adenomatous change with low and high grade dysplasia (at the left side), and the evolving invasive adenocarcinoma (at the right side).



Invasive moderately differentiated adenocarcinoma of the appendix infiltrating through muscularis propria.



Invasive moderately differentiated colonic adenocarcinoma (right colon) infiltrating through muscularis propria.

The hospitalization course was uneventful and the patient was discharged without complications.

Discussion

Appendicial tumors are rare and the diagnosis is usually made histopathologically; as an incidental finding. 80% of appendicial tumors are of neuroendocrine origin occurring synchronously at a rate pf 55% with other colonic tumors. Other appendicial tumors include mucoceles and adenocarcinoma. Both of which have an incidence rate of 5% among appendicial tumors. The incidence of synchronous tumors was found to be more intimately related to conditions of chronic colorectal inflammation namely ulcerative colitis. Recent studies advocate going for incidental appendectomy in colorectal oncological surgeries as the rate of occurrence of synchronous tumors; although rare, is still possible, additionally those patients have a lifetime risk of acute appendicitis of 7% and will be of course more challenging technically in such patients.

Synchronous tumors are defined as those occurring in a period of no more than 6 months and in case of colorectal and appendicial adenocarcinoma this Is an extreme rarity; according to literature less than 40 cases were identified, and that was mostly a post-operativediagnoses. The use of imaging is vital in staging and looking for other gross lesions, however post-operative upper and lower GI endoscopy is strongly recommended.

Conclusion

Appendicial adenocarcinomas are rare and even more unlikely to be synchronous with colorectal neoplasia however such finding should not tone down or even change oncological management

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