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Case Report

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Transitional Cell Carcinoma Arising in a Duplication of the Colon: A Case Report

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Abstract

Background: *Duplications of the gastrointestinal tract are many and variable, the most common sites being in the esophagus and ileum. The colon is infrequently involved. Even less frequent is malignant change in these anomalies. This paper reports a case of Primary transitional cell carcinoma (TCC) arising in a duplicated colon. Transitional cell carcinoma (TCC) arising in a duplicated colon is rare. We report a case of 61 years old male presented by epigastric swelling. Computarized tomography (CT) revealed the presence of cystic mass related to transverse colon. At surgery a firm perforated cystic mass with mural component connected to transverse colon was noted.*

Methods: *The mass was completely excised and gross examination revealed rounded cystic mass measuring 15x15 x3 cm in diameter attached to colon. Microscopic evaluation and immunohistochemistry study were performed.*

Results: *The mass was diagnosed as high grade TCC developed in duplicated colon and infiltrate the attached colonic wall.*

Conclusion: *To our knowledge, this is the first reported case of "pure" TCC arising in a duplication of the colon.*

Keywords: Duplication, TCC, CK7, CK20

Introduction

Duplications of the gastrointestinal tract are many and variable, the most common sites being in the esophagus and ileum. The colon is infrequently involved. Even less frequent is malignant change in these anomalies. This paper reports a case of Primary transitional cell carcinoma (TCC) arising in a duplicated colon. Transitional cell carcinoma (TCC) arising in a duplicated colon is rare.

Case Presentation

Male patient aged 61 years presented by epigastric swelling. Computarized tomography (CT) revealed the presence of cystic mass related to transverse colon. At surgery a firm perforated cystic mass with mural component connected to transverse colon was noted.

Pathologic Findings

Gross Pathology

The specimen consisted of a resected 14 cm part of the colon and attached to its posterolateral side a rounded cystic mass measuring 15x15 x3 cm in diameter. On Cut section, the most of inner surface of the cyst is occupied by hemorrhagic necrotic soft fungating mass measured 14x15x3 cm in its greatest dimension. This mass infiltrates the wall of the cyst and the colonic wall from outside not reaching to the mucosa. Small part of the cyst wall (1 cm in length) lined by normal appearing mucosal ruguae of intestine. There is part of mesentry measured 11x7x1 cm in diameter attached to the colonic wall and contained one mesentric lymph node firm white measured 1x1x0.5 cm in diameter (Fig1 A-C).

Microscopic Pathology and Immunohistochemistry

Histopathological examination revealed the presence of cystic mass. Its wall is lined focally by benign appearing colonic epithelium which gradually replaced by malignant urothelial cells arranged in sheets and papillae. The malignant cells infiltrate the wall of this cyst (duplicated colon) and the attached adjacent colonic wall from outside (infiltrate its serosa, muscle layer and submucosa sparing the mucosa). The malignant cells show features of anaplasia in form of pleomorphism, hyperchromatism, increased N/C ratio and frequent mitosis. There were extensive areas of necrosis and hemorrhage. Sections from received mesentric lymph node show reactive hyperplasia (Fig1 D-I).

Immunohistochemical studies show positivity of the tumor tissue to CK7 and negativity to CK20 and CD117 (Fig1 J-L).

Overall, the features are consistent with high grade TCC developed in duplicated colon and infiltrate the attached colonic wall.

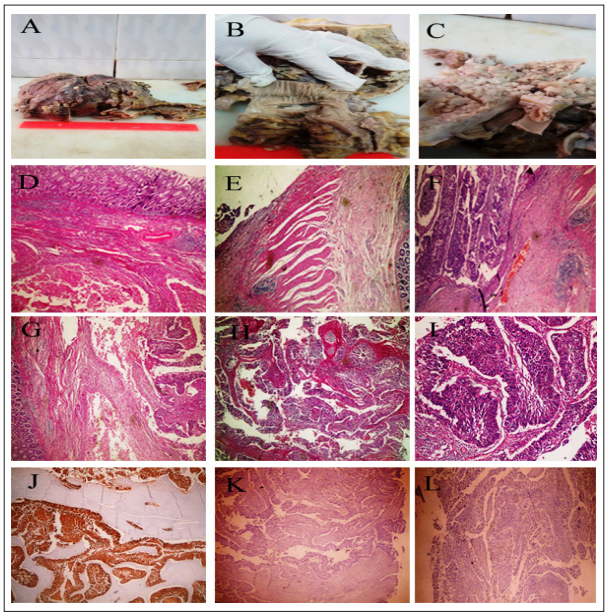

Figure legends

Fig1: Gross, microscopy and immunohistochemistry of the mass
Fig1A: Gross picture of mass wih colon.
Fig 1B: Colon infilterated by mass from outer surface.
Fig 1C: Cut section of mass with part of cyst lined by apparent normal mucosa.
Fig 1D- F: Colonic wall with its junction to cystic mass at the muscle layer.
Fig 1G: Colonic wall shows infilteration of its muscle layer by tumor tissue.
Fig 1H-I: Tumor tissue at cystic mass (TCC).
Fig 1J: CK7 positive tumor tissue.
Fig 1H: CK20 negative tumor tissue.
Fig 1L: CD117 negative tumor tissue.

Discussion

Colonic duplication was first described in 1882 [1]. Many names have been applied based on morphologic features including colon duplex, giant diverticula, enterocystornas, and enteric cysts, but the term "colonic duplication" is preferred. The duplication is invested with a coat of smooth muscle and is usually lined by colonic mucosa; however, squamous, gastric, and small bowel muscosal linings and ectopic glands resembling pancreas and salivary gland have been described [2,3]. Typically, the duplication is attached to the true bowel wall, although rarely it has its own mesentery [4,5]. Although the pathogenesis of colonic duplications is still unclear, an abnormality of the embryologic gut is postulated to result in the formation of a diverticulum, a cyst, or "twinning" of a bowel segment [6]. The duplications are usually detected in childhood and cause abdominal pain, diarrhea, constipation, rectal bleeding, a mass, distention, or obstruction. Complications of the duplications are obstruction, hemorrhage, perforation, and in adults, malignancy as well [7].

The incidence of neoplasia arising in a duplication of the colon cited very low and all of the reported cases were adenocarcinoma and squamous cell carcinoma [8-10]. The present report discusses the first case to be reported as Primary transitional cell carcinoma (TCC) arising in a duplicated colon.

The existence of TCC in a duplicated colon has been questioned, the transitional cell nature of the present tumor was established by the growth pattern of the tumor in sheets and papillae and histological appearance of the cells confirmed by positivity to immunohistochemical markers CK7 and negativity to CK20 and CD117.

This can be explained as duplication cysts (enterogenous) occur secondary to sequestration of embryogenesis of the developing hindgut because they arise from endodermal tissue, they can be lined with squamous, cuboidal, columnar or transitional epithelium [11]. The usual environment within the lumen of a closed duplication may be carcinogenic [12].

Conclusion

In summary, we report an unusual case of 61 years old male presented by of "pure" TCC arising in a duplication of the colon. To our knowledge, no similar cases have been reported. The present case provides new lined of evidence of neoplastic processes occurring within duplicated colon.

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