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Case Report

Squamous cell carcinoma arising in a villous adenoma in the colon: a rare but real threat

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ABSTRACT

Squamous cell carcinoma (SCC) of the colon is rare, with fewer than 100 cases, predominantly in males, usually presenting at advanced stages with poor prognosis. SCC arising in a villous adenoma of the colon is still rarer. The first case of primary SCC of the colon arising in a villous adenoma was reported by Lundquest et al. Metastasis from other sites like the lungs must be excluded before considering such a case as primary. Here a 54-year-old female presented with a three-month history of epigastric pain and altered bowel habits. A colonoscopy identified an ulcero-proliferative lesion in the ascending colon, which CT imaging confirmed as a neoplastic mass. Histopathological examination of colonoscopic biopsy was diagnosed as SCC. The patient subsequently underwent a right hemicolectomy, and a diagnosis of well differentiated SCC arising in a villous adenoma was given. Postoperative recovery was monitored, and the patient was scheduled for follow-up assessments to manage and detect any recurrence. SCC of the colon arising in a villous adenoma is rare, found mainly in the rectosigmoid region but occasionally in other areas, like the ascending colon. Due to its rarity, it is important to rule out secondary causes. Histological confirmation includes using immunohistochemistry such as p40/63, CK-AE1/AE3 and 34BE12 to confirm squamous cel differentiation. Primary SCC of the colon requires prompt surgery due to its aggressiveness. The effectiveness of chemoradiation is unclear, and increased surveillance is needed due to higher recurrence rates.

Keywords: Colon, Primary, Squamous cell carcinoma

INTRODUCTION

Primary colorectal SCC is an extremely rare type of tumor affecting the large intestine. Its incidence is estimated at about 0.10 to 0.25 cases per 1,000 colorectal cancers diagnosed globally, with a significant increase noted in the past few years. SCC of the colon was first described by Schmidtmann in 1919, while Raiford reported the first case of rectal SCC in 1933. These tumors occur more commonly in the rectum affecting both sexes, with a slight predominance seen in women. Among these cases, SCC arising in a villous adenoma were extremely rare, with less than 100 cases documented in literature. The first case was reported by Lundquest et al in 1988.[1,2] However, caution should be exercised before classifying SCC as a primary colorectal tumor, unless metastasis from other primary sites is ruled out. These cancers usually present and are typically diagnosed at an advanced stage and are associated with a poor prognosis.[1]

Here we present a case of a 54-year-old female with SCC arising in a villous adenoma involving the ascending colon and cecum.

CASE REPORT

A 54-year-old female presented with pain in the abdomen in the epigastric region and altered bowel habits for 3 months, increased on lying down and relieved on taking medication. She had no anorexia, weight loss, or any rectal symptoms. In addition, she had a history of 3 PRBC transfusions because of anemia 2.5 months back. Her family history was non-contributory. On examination, she had pallor, and the rest of the general examination was non-contributory. An abdominal examination revealed a vague mass that was palpable in the right iliac fossa of the abdomen. On evaluation with basic blood parameters, she was found to have microcytic hypochromic anemia with neutrophilic leukocytosis. On evaluation with colonoscopy, an ulcero-proliferative lesion was seen in ascending colon and caecum. Further evaluation with computed tomography (CT) showed a heterogeneously enhancing endophytic soft tissue density with circumferential wall thickening involving ascending colon, caecum, terminal ileum, with total luminal narrowing, and adjacent fat stranding, lymph node enlarged- suggestive of neoplastic etiology. The lesion in the ascending colon and caecum were biopsied during colonoscopy and sent for histopathological examination. Section from the lesions revealed features of SCC, which was confirmed with immunohistochemistry with p63. The patient underwent a right hemicolectomy which revealed an ulcero-proliferative cauliflower-like growth in the caecum and ascending colon measuring 8x6x4cm without perforation. Histological examination showed an invasive, well-differentiated, keratinizing SCC with adjacent villous adenoma of high-grade dysplasia. All the isolated 35 lymph nodes were free of tumour. Pathologically staged as pT2N0. The tumor stained positive for p63. Chemotherapy was advised; however, the patient did not return for further management.

Figure 1: Gross examination shows right hemicolectomy specimen with a proliferative cauliflower-like growth (black arrow) arising from the cecum and proximal ascending colon.

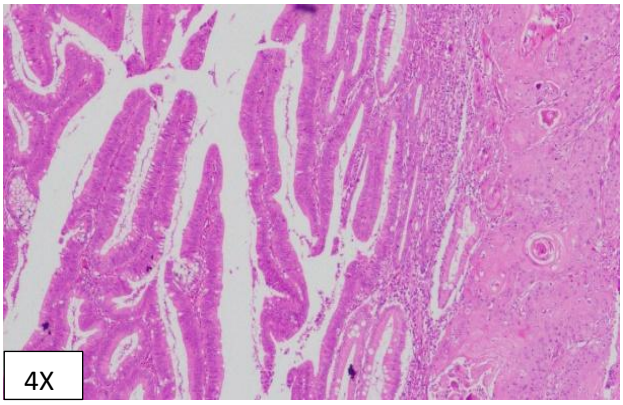

Figure 2: Microscopy; colonic glands arranged in a villous pattern showing features of villous adenoma with high grade dysplasia.

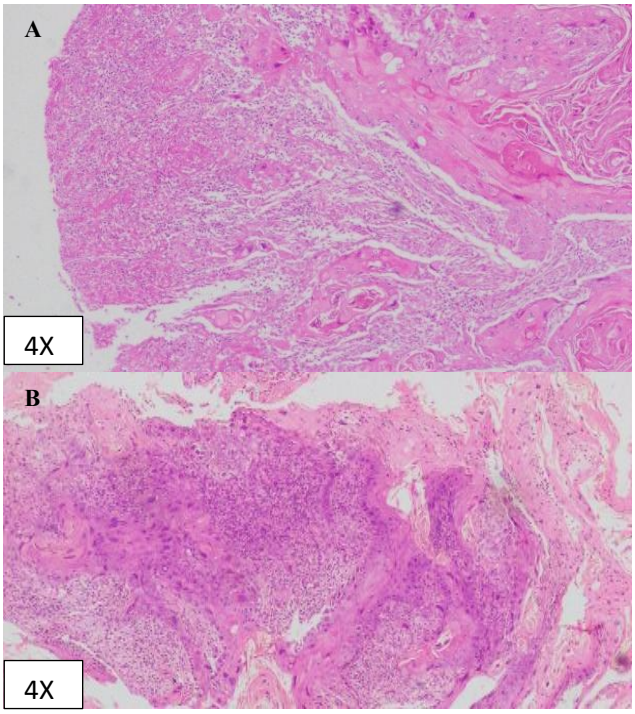

Figure 3 (A and B): Microscopy; invasive malignant squamous cell nests and sheets arising in a villous adenoma.

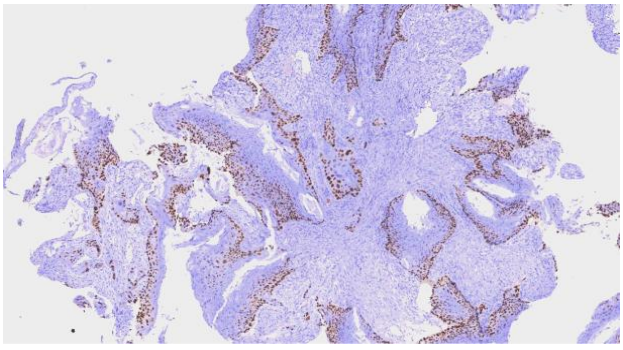

Figure 4: Immunohistochemistry; malignant squamous cells highlighted by p63 IHC.

DISCUSSION

SCC of the colon is rare with an incidence of 0.1 -0.25 per 1000 colorectal cancers. Various reports mention equal preponderance in both genders.[1] The first case of primary SCC of the colon arising in a villous adenoma was reported by Lundquest et al whereas Schmidtmann originally described SCC of the colon in 1919, and the first case of rectal SCC was presented in 1933 by Raiford.[2,9] Most of the pure SCC of the colon has been reported in the rectosigmoid colon, while in our case it was located in ascending colon and cecum arising within a villous adenoma. Several theories have been suggested for the pathophysiology of colorectal SCC. The differentiation of multipotent stem cells which are present in the colonic mucosa to squamous cell dysplasia and eventually carcinoma is one theory. Another hypothesis includes chronic irritation to the colonic mucosa which could result in proliferation of basal cells into squamous cells. The afore mentioned epithelial damage leading to squamous cell metaplasia of colonic epithelium may be significantly influenced by a number of additional variables, such as inflammatory bowel illness, infection, asbestos exposure, and radiation exposure. The presence of Human Papilloma Virus (HPV) has been associated with colorectal SCC, as it damages local cell proliferation thus inducing oncogenesis.[3] Given the rarity of primary colorectal SCC, histological confirmation of SCC is insufficient to establish the diagnosis; clinicians must first exclude possible secondary causes of SCC which are more common.[4] William et al established three criteria that must be met to rule out secondary causes and help to confirm the diagnosis of primary SCC. The first criterion requires that metastasis to the colorectum from another organ to be ruled out. The second criterion excludes any possible squamous-lined fistula affecting the involved area. The third criterion requires the exclusion of possible SCC of the anus with proximal extension to the rectum and colon.[5] Therefore, the diagnosis of primary colorectal SCC requires histological confirmation of SCC in addition to exclusion of the possibility of secondary. Immunohistochemistry aids in confirming SCC using markers such as P40/63, CK-AE1/AE3, 34BE12, CK-5, and involucrin to confirm squamous cell differentiation from other undifferentiated small cell tumors.[6] Surgery has always been the first line of treatment for primary colorectal SCC and is still the most important step in the management of colonic SCC. The effectiveness of radiation and/or chemotherapy is still debatable.[7,8] There is no consensus regarding the optimal management of SCC; rather, a collection of cases has been reported in the literature due to the scarcity of SCC in the colon. Therefore, management is the same as adenocarcinoma of the colon, which is predominantly definitive radical resection followed by adjuvant chemotherapy and radiotherapy. The prognosis for primary colorectal SCC is based on the TNM stage, like colon adenocarcinoma. The TNM classification of the AJCC does not distinguish between adenocarcinoma and SCC and excludes all colorectal malignancies. Literature, however, indicates that SCC has a far worse prognosis. Surgical margins should be at least 5 cm, but preferably 10 cm, as with all colon malignancies. Furthermore, as it has been demonstrated that a higher lymph node yield is associated with a higher chance of survival, sufficient lymph node sampling should be carried out. A lymph node yield above 20 was linked to improved survival.[9,10]

CONCLUSION

SCC of the colon arising in a villous adenoma is rare and a distinct entity with paucity in literature of its incidence and prevalence. We conclude that our case was primary SCC of the colon based on history, extensive objective findings, and lack of another primary source. Early surgery remains the first step in reducing the high mortality rate. The role of the chemoradiation regimen and duration remains unclear. The aggressive history of this disease suggests the need for more frequent disease recurrence surveillance than for conventional colorectal cancers.

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