Case Report

Serrated Adenoma of the Appendix : A Case Report

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Abstract : We report a rare case of serrated adenoma of the appendix synchronously associated with adenocarcinoma of the sigmoid colon. A 69-year-old Japanese man admitted to our hospital for a routine physical checkup and colorectal endoscope was found to have a flat-elevated tumor measuring $23 \times 8 \times 15$ mm in size in the sigmoid colon. He was healthy until this admission, with no abdominal symptoms in the previous couple of months. A surgical sigmoidectomy with routine additional appendectomy was performed. Histopathological examination of the resected tumor revealed an intra-mucosal adenocarcinoma and tubular adenoma with severe dysplasia in the sigmoid colon. The appendix, grossly unremarkable, harbored a serrated adenoma with no evidence of invasion or malignant transformation. Serrated adenoma of the appendix is extremely rare, and only one case report could be found on MEDLINE.

Key words : serrated adenoma, appendix, pathology, case report

Serrated adenoma of the appendix is extremely rare, and only one case report can be found on MEDLINE. We report here a second case of serrated adenoma of the appendix synchronously associated with adenocarcinoma of the sigmoid colon.

Case Report

Clinical summary

A 69-year-old Japanese man admitted to our hospital for a routine physical checkup and colorectal endoscope was found to have a flat-elevated tumor measuring $23 \times 8 \times 15$ mm in size in the sigmoid colon. No tumorous lesion was found in the cecum. Because biopsy of the tumor revealed a tubular adenoma with severe dysplasia, and the tumor was difficult to remove endoscopically, surgical sigmoidectomy with routine additional appendectomy was undertaken. He had been healthy until this admission, with no abdominal symptoms in the previous couple of months. There was no family history of adenomatosis coli or malignant tumors.

A Fig. 1. Pathology of the serrated adenoma of the appendix

(A) The appendix, grossly unremarkable, was cylinder-shaped without mucinous contents in the lumen. (B) The appendix harbored a localized lesion (arrows) of serrated proliferation of the atypical glandular epithelia (hematoxylin and eosin, original magnification $\times 2.5$). (C) High-power view demonstrated eosinophilic cytoplasm with incomplete mucinous differentiation and ovoid nuclei with moderately increased nucleocytoplasmic ratio in the atypical glandular epithelia (hematoxylin and eosin, original magnification $\times 50$). (D) The atypical epithelia did not show invasive growth, and the normal complement of submucosal lymphoid tissue of the appendix was not lost (hematoxylin and eosin, original magnification $\times 25$).

B

C

D

Pathology findings

A flat-elevated tumor of the sigmoid colon, adenocarcinoma and tubular adenoma with severe dysplasia were seen. The tumor cells did not show submucosal invasion or capillary invasion. The appendix, grossly unremarkable, was cylinder-shaped without mucinous contents in the lumen, and the size was 70 mm in length and 6 mm in diameter (Fig. 1A). Histological examination of the appendix revealed a localized lesion, measuring 16 mm in the largest dimension, of serrated proliferation of atypical glandular epithelia (Fig. 1B). A high-power view demonstrated an eosinophilic cytoplasm with incomplete mucinous differentiation, and ovoid nuclei with a moderately increased nucleocytoplasmic ratio in the atypical glandular epithelia (Fig. 1C). Furthermore, obvious nucleoli and scattered mitotic figures were observed in the epithelial cells. An acid-Schiff reaction was weakly positive in the apical surface and the cytoplasm of the epithelia. The atypical epithelia did not show invasive growth, and the normal complement of submucosal lymphoid tissue of the appendix was not lost (Fig. 1D). Immunohistochemically, the atypical epithelia did not stain positive with anti-NSE, anti-chromogranin A, or anti-p53 antibodies, and about 5 % of the epithelia stained positive with Ki-67 antibody, suggesting the atypical epithelia was of non-neuroendocrine origin and was benign. From these findings, the lesion was diagnosed as a serrated adenoma with moderate dysplasia of the appendix.

Discussion

Adenomas of the appendix are uncommon lesions, usually appearing as mucinous cystic tumors, and are histologically classified as mucinous adenomas. According to the report of Carr *et al*¹⁾, of 43 adenomas, 42 were mucinous adenomas and 1 was a tubular adenoma from an adenomatosis coli patient. Thus, non-mucinous adenomas of the appendix are rare in non-adenomatosis coli patients. In the present case, the appendix was grossly unremarkable with histopathological findings of a serrated adenoma, which is a variant of non-mucinous adenoma. Serrated adenomas are characterized by serrated glandular patterns similar to that seen in hyperplastic polyps²⁾. However, serrated adenomas can be distinguished by the presence of goblet cell immaturity, upper zone mitoses, prominence of nuclei, and the absence of a thickened collagen table. Recently, a similar case was reported by Rudzki *et al*²⁾, wherein a 74-year-old female was underwent hysterectomy due to an ovarian cancer, and a serrated adenoma was incidentally found in a routine additional appendectomy. No visible abnormality is a gross finding common to both the present case and that of Rudzki *et al*²⁾. This finding may be due to serrated adenoma cells producing poor mucin since a histological feature of these cells is incomplete mucinous differentiation³⁾. These two cases highlight the difficulty in diagnosing a serrated adenoma of the appendix in the absence of abdominal symptoms and visible abnormalities. Histological examination of the additional appendectomy in various abdominal surgeries is therefore recommended, as serrated adenomas are a potentially malignant lesion with 11% of cases containing areas of intramucosal carcinoma³⁾.

References

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