

Case Report

Colon composited B cell lymphoma involving intestinal mesenteric lymph nodes combined with adenocarcinoma and schistosome infection: a case report

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Received September 3, 2014; Accepted October 17, 2014; Epub October 15, 2014; Published November 1, 2014

Abstract: Here we reported one rare case of colon composited B cell lymphoma associated with adenocarcinoma. The composited B cell lymphoma composed of extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) and large B-cell lymphoma. Additionally, adjacent intestinal mesenteric lymph nodes were involved. And interestingly, schistosome infection was also found in lymphoma and adjacent tissues. The patient was given a usual local intestinal resection for colon adenocarcinoma. But in the site of one surgical margin, 10 cm away from intestinal carcinoma, we found another mass. Beneath the neoplasm, several swollen intestinal mesenteric lymph nodes were detected. By H&E staining and immunohistochemistry, it was eventually demonstrated the patient suffered complicated neoplasms. So far, there were just several references about colon lymphoma combined with adenocarcinoma. But the present case is the first to report that colon composited B cell lymphoma associated with adenocarcinoma and schistosome infection.

Keywords: Non-Hodgkin lymphoma, colon adenocarcinoma, coincident primary tumor

Non-Hodgkin lymphoma (NHL) is primary malignant tumor of lymph tissues and has increasing trend in global range [1]. Colon carcinoma is the most common malignant tumor of digestive system in Chinese while the NHL combined with adjacent adenocarcinoma was rarely reported. Here, we report one case of NHL combined with colon adenocarcinoma which was treated in this hospital.

Clinical data

The patient, male and 82 years old, saw the doctor because of 2 years repetitive hematochezia with aggravation for more than 10 days. Physical examination at admission showed flat abdomen and normal bowel sound without obvious mass in whole abdomen. Rectal examination showed there was no neoplasm or lump at the anus opening with smooth entry of finger and suitable tightness, multiple touchable granular bumps in the anal canal with smooth surface but without tenderness, no mass in

rectum, dark-red deep fecal residue on the glove at withdrawal but without mucus. There was no obvious abnormality in routine blood test, ECG, liver and kidney examination. Abdominal CT indicated lesions of descending colon and consideration of colon carcinoma with pre-operative stage of T2N0M0.

Post-operative pathology

Gross observation: The specimen was a bowel tube with 28 cm length and 3 cm in diameter. There was one cauliflower-like mass of 3 × 2.5 × 1 cm with distance of 6 cm to one cutting edge. The mass was grey, middle texture and invasion of whole layer by naked eye. There were 2 polyps at the distance of 1 and 9 cm to the mass, respectively, 0.3 and 0.7 cm in diameter. At the immediate margin of another cutting edge, the mucosal surface was mildly swelled in a range of 3 × 2.5 cm with thickness of mucosal plicae at the cutting section, solid and soft texture (**Figure 1**). Under the micro-

Colon B cell lymphoma with adenocarcinoma



Figure 1. The bowel of gross observation; yellow arrow: colon adenocarcinoma; green arrow: colon NHL.

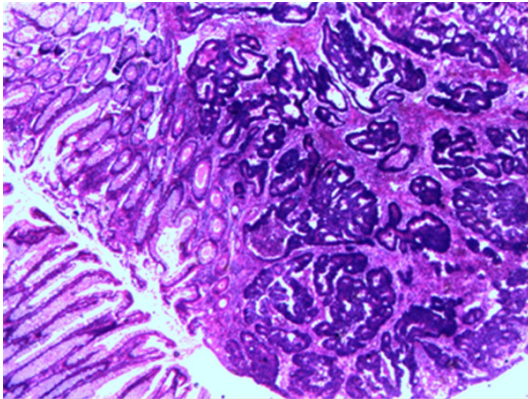


Figure 2. Colon adenocarcinoma. HE staining, original magnification $\times 200$.

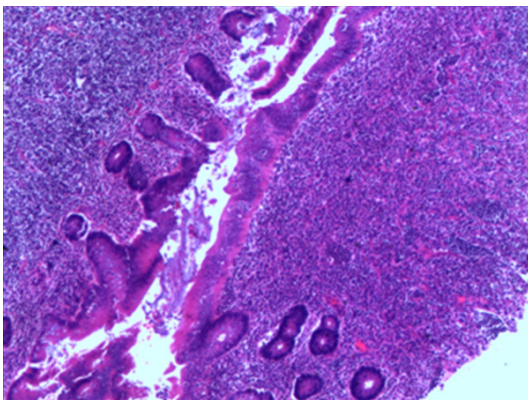


Figure 3. Colon lymphoma at mucus-related marginal area. Original magnification $\times 200$.

scope, the cauliflower-like mass was clearly of abnormal glands and adenoma (**Figure 2**); there was diffused infiltration of lymphoid tumor cells in the swelled mucosa. The tumor cells were small to middle in size, mainly involving mucosa and sub-mucosal layer and rarely muscle layer. The mucosal epithelium was in clear shrinkage and there were mutant large

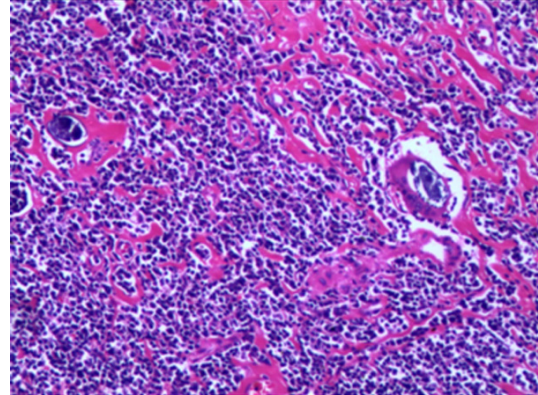


Figure 4. Sporadic schistosome eggs accompanied with tuberculoid granuloma. Original magnification $\times 200$.

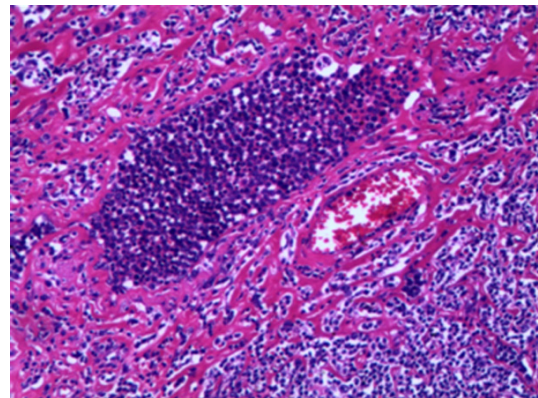


Figure 5. Mutant large lymphoid cells. Original magnification $\times 400$.

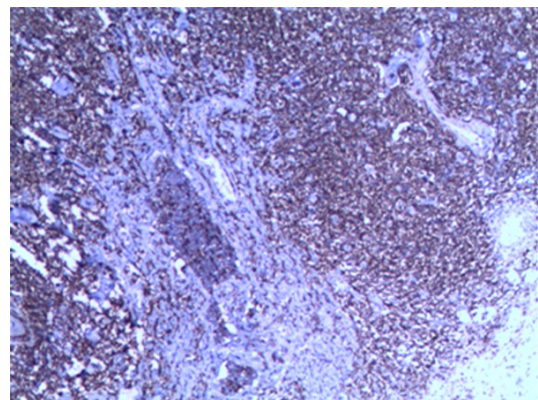


Figure 6. Immunohistochemical staining of swelled mucosal area showed that CD20 is strongly positive, but weakly positive in large lymphoid cells. SP, original magnification $\times 200$.

lymphoid cells, at the edge of tumor, with dark staining of nuclei and obvious increased mitotic

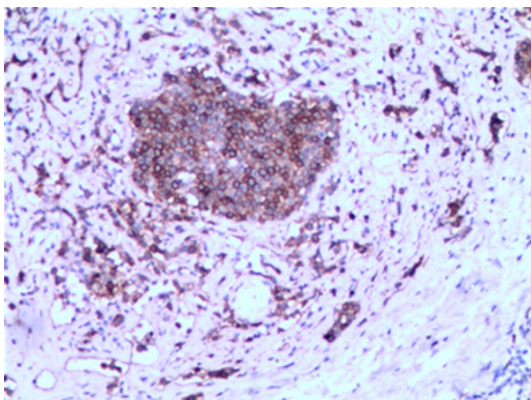


Figure 7. CD38 negative expression in small tumor cells, but positive in large lymphoid cells. SP, original magnification $\times 400$.

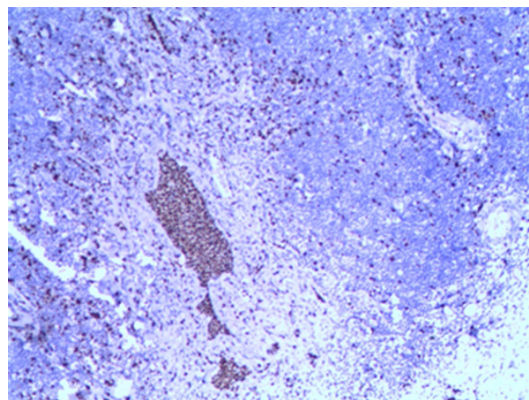


Figure 8. Ki67 positive expression in small tumor cells (about 5%) and large lymphoid cells (about 40%). SP, original magnification $\times 200$.

figures. There were sporadic schistosome eggs accompanied with tuberculoid granuloma in the tumor and the muscle layer of bowel wall (**Figures 3-5**). Immunohistochemical staining of swelled mucosal area showed Bcl-2 (+++), CD19 and CD20 (+++, weak positive in large lymphoid cells) (**Figure 6**), CD38 (-, positive in large lymphoid cells) (**Figure 7**), kappa (+), lambda (-), Ki67 (index 5%, index 40% in large lymph-like cells) (**Figure 8**), CD43 (+), Bcl-6 and CD10 (+, at germinal center), CD21 and CD23 (+, at dendrites).

Final pathological diagnosis

The final pathological diagnosis was moderately-differentiated adenocarcinoma with invasion of colon serosa and 0/13 lymph nodes, colon NHL, lymphoma at mucus-related marginal area, partial differentiation to large B-cells and plasmacytes, involving para-intestinal mesenteric lymph nodes, and old tuberculoid granuloma secondary to schistosome eggs at colon wall. The patient died from complications of intestinal obstruction and respiratory failure at 1 month after colectomy.

Discussion

The pathogen and mechanism of lymphoma are still not clear and currently consider to be related with viral infection and immune factors [2]. The gastrointestinal tract is the most common location of extranodal lymphoma, accounting for 30-45% of extranodal lymphoma [3]. Gastrointestinal lymphoma has a morbidity of 1.6/million and peak at 60-80 years old with male/female rate of 2:1, majority at stomach

and 10-20% at colorectum (dominantly at caecum, accounting for 0.20-0.65% of total malignant tumor in colorectum) [4]. Barron and Localio [5] showed the possibility of the joint occurrence of colon cancer and lymphoma by chance is less than 0.0002%. In 2003, Mannweiler et al [6] reported 3 cases of coincident colorectal tumor and lymphoma at different intestinal locations. Recently, there are more reports of synchronous lymphoma and colorectal malignancy. Kidd et al. [7] mentioned these kinds of cases; colon cancer with mantle cell lymphoma, coexisting colon cancer and lymphoma in an IgA-deficient boy and primary malignant lymphoma and colon cancer in the gastrointestinal tract, metastatic colon cancer and follicular lymphoma within the same lymph node.

In the present study, the lymphoma combined with adenocarcinoma was localized at adjacent locations of colon. The moderately-differentiated adenocarcinoma was considered as canceration of adenoma, showing atypical hypertrophy of intestinal epithelium and transiting morphology from adenoma to adenocarcinoma. Simultaneously, there were multiple colon adenomas at adjacent locations and there were atypical hypertrophy of colon adenoma and tuberculoid granuloma formed by schistosome eggs at the area of colon NHL. Therefore, we speculated that the 2 types of malignant tumors simultaneously happened. Previous study indicated that lymphoma and nasopharyngeal carcinoma were related with the same pathogen-viral infection [8]. It was also indicated that the respiratory epithelium (nasal cavity

or nasopharynx) could produce canceration under the stimulation of lymphoma [9, 10]. Therefore, we believed that the occurrence of malignant tumors in the present study may be related with immune factors induced by schistosoma infection. However, further studies are required to clarify whether the intestinal mucosa happened canceration under the stimulation of lymphoma or the coexistent carcinomas happened simultaneously or in turn.

Summary

In the present study, we reported a case of colon carcinoma and colon NHL in 82 years old man. Currently, the study of NHL in molecular genetics indicated it is related with the mutation of P53, P16, Bcl-2 and APC which are also common genes resulting in tumors in gastrointestinal tract. Therefore, the genetic change may be related with the co-occurrence of the two tumors, particular in elder patients or under the situations of affected immunity such as parasites or virus infection, which greatly increases the possibility of co-existent cancers.

Disclosure of conflict of interest

None.

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