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Case study

Primary anorectal Hodgkin lymphoma: report of a case and review of the literature

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Summary Primary colorectal lymphomas are very rare. They are mostly B-cell non-Hodgkin lymphomas. Only 2 cases of anorectal Hodgkin lymphoma have been described so far, both affecting HIV-infected males and showing Epstein-Barr virus infection. We report an unusual case of primary Hodgkin lymphoma of the anorectal region in an HIV-negative, Epstein-Barr virus–infected patient and in the absence of inflammatory bowel disease. The importance of distinguishing Hodgkin lymphoma from Epstein-Barr virus–induced lymphoproliferative disorders and from Epstein-Barr virus–positive diffuse large B-cell lymphoma of the elderly is stressed in particular in non-immunocompromised patients and in the absence of history of inflammatory bowel disease.

1. Introduction

Colorectal lymphomas represent 6% to 12% of all gastrointestinal lymphomas [1]. Usually, they are secondary B-cell non-Hodgkin lymphoma [1]. Primary colorectal lymphomas account for only 0.2% of all malignant tumors in this site [1,2]. In the gastrointestinal tract, primary Hodgkin lymphoma (HL) has been reported only in 1% to 3% of all cases, and the stomach and small intestine are the sites most commonly involved [3]. Primary HL of the rectum is rare [3], mainly described in HIV-infected patients [4] or associated with inflammatory bowel disease (IBD) [1]. Epstein-Barr virus (EBV) is present in a significant proportion of cases of HL [3]. Only 2 cases of anorectal HL have been described so far, both affecting HIV- and EBV-infected males [3,5,6] and presenting with a concomitant lymphadenopathy. According to Dawson's criteria for classifying primary gastrointestinal lymphomas [1], they represent a secondary involvement by a nodal HL.

We report a case of primary HL of the anorectal region in an HIV-negative, EBV-infected patient and in the absence of IBD and any other localization. A review of the literature is also presented, and the differential diagnosis with EBV-induced lymphoproliferative disorders (LPDs) and EBV-positive diffuse large B-cell lymphoma (DLBCL) of the elderly is discussed.

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2. Case report

2.1. Clinical history

An 83-year-old man presented to the Surgery Unit of Valdichiana Hospital (Siena) complaining of tenesmus and mucous bloody diarrhea that lasted for 1 month. Medical history was unremarkable. Immune suppression conditions (primary immunodeficiency, autoimmune disorders, and drugs) were excluded by clinical history and biochemical evaluation. HIV-1 and HIV-2 serology as well as hepatitis B virus (HBV) and hepatitis C (HCV) tests were negative. EBV serology showed immunoglobulin G (IgG) anti-VCA (viral capsid antigen) but not IgM, thus indicating a past infection. On digital rectal examination, a friable, hemorrhagic lesion located in the anal canal was observed. The rest of the physical examination was negative. Rectoscopy showed a 4.0 × 1.5 × 1 cm polypoid mass of the anorectal junction. The lesion was ulcerated and presented protruding margins. It extended through the entire anal canal wall, narrowing the lumen. The surrounding rectal mucosa appeared normal. A whole body computed tomographic (CT) scan showed an ill-defined tumor, 40 × 15 mm, extending through the entire right wall of the anorectal junction. Neither regional and periaortic lymphadenopathy nor lesions in the liver, spleen, and lungs were detected. A mild neutrophilia (67.7%; reference range, 55.0%-64.0%) associated with decrease of lymphocytes (22.2%; reference range, 25.0%-45.0%) was observed in the blood count.

The clinical differential diagnoses included localized anorectal carcinoma, isolated ulcer of the rectum, and Crohn disease. Multiple biopsies of the lesion were performed using an endoscopy cautery snare. A 2-fluoro-2-deoxy-D-glucose–positron emission tomography/CT showed a 4-cm maximum diameter area of abnormally high 2-fluoro-2-deoxy-D-glucose uptake in the anal canal. Surgical excision of this lesion was excluded due to the fact that it was close to nervous structures. The patient started chemotherapy with the mustargen, oncovin, procarbazine, prednisone protocol. Because of the persistence of the disease after 4 cycles of chemotherapy, the patient was considered unresponsive to medical therapy; thus, radiation treatment was planned. He received pelvic irradiation with 40 Gy with a complete disappearance of the lesion. At present (20 months after the initial diagnosis), the CT scan is negative, and the patient is well.

2.2. Materials and methods

The tumor specimen was fixed in 10% buffered formalin, embedded in paraffin, and cut. The section was stained with hematoxylin and eosin, and the following antibodies were checked on other sections: CD45, CD20, CD3, CD30, CD15, PAX5/BSAP, CD79a, IRF4/MUM1, Oct-2, Bob-1, LMP-1, EBNA2, and cytomegalovirus. In situ hybridization analysis for EBV small encoded RNA (EBER) was also performed as well as polymerase chain reaction for human papillomavirus.

2.3. Results

The bioptic specimens consisted of 5 friable brownish fragments ranging from 1 to 4 mm. Histologically, all the fragments showed similar morphologic features: not well-circumscribed ulcerated mucosal lesions were associated with a polymorphous infiltrate invading the muscularis propria (Fig. 1A and B). At high power, the infiltrate was mainly composed by a mixture of lymphocytes, plasma cells, histiocytes, immunoblasts, and scattered eosinophils. Reed-Sternberg (RS) (Fig. 1A inset) and Hodgkin cells (HC) were present in variable number. No “plasmacytoid” apoptotic cells were observed. The adjacent squamous and glandular epithelium showed reactive nuclear atypia. The neoplastic cells were positive for CD30 (Fig. 1C) and CD15 (Fig. 1D) with a paranuclear and membranous pattern of staining for LMP-1; they were negative for CD45, CD20, PAX5/BSAP, CD79a, IRF-4/MUM-1, CD3, Oct-2, Bob-1, and EBNA2 (Fig. 1E). Immunohistochemistry for cytomegalovirus was negative. In situ hybridization analysis for EBER was positive (Fig. 1F), whereas polymerase chain reaction for human papillomavirus was negative.

The histologic, immunohistochemical, and in situ hybridization findings supported the diagnosis of classical HL. The biopsy performed after 4 cycles of chemotherapy showed the persistence of the disease: in the background of an ulcerative lesion with numerous inflammatory cells, granulation tissue, and epithelial regenerative changes (Fig. 2A), several CD30, CD15, LMP-1 positive RS cells, and HC were present (Fig. 2A inset). A new biopsy was carried out 3 weeks after the end of the radiotherapy. It showed a radiation proctitis characterized by mucosal ulceration, fibrosis of the lamina propria with atypical fibroblast, teleangectasia, vessels wall hyalinization, plumped endothelial cells, and numerous neutrophils and eosinophils (Fig. 2B). No CD30-positive cells were present.

3. Discussion

Primary colorectal lymphomas are rare, and most cases are non-Hodgkin lymphomas [1]. In an extensive review of the literature, Thomas et al [7] identified 26 cases of HL arising in the colon, of which 6 cases (23%) involved the rectum [3]. However, some of these previously reported cases may be examples of secondary involvement of the large bowel in patients with nodal disease [3]. We identified 11 sufficiently documented cases of primary HL of the rectum, all published as single case reports [3,8-17]. The clinical and pathologic findings are presented in the Table. The average age of the patients was 58.7 years (range, 40-81 years; not all data available). The neoplasm affected more