Dutcher Bodies in Chronic Synovitis

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Dutcher bodies are periodic acid–Schiff (PAS)-positive eosinophilic intranuclear pseudoinclusions, a histologic feature strongly associated with low-grade malignant lymphomas, particularly lymphoplasmacytic lymphoma, mucosa-associated lymphoid tissue (MALT)-type lymphoma, or myeloma. Dutcher bodies are not typically associated with benign reactive conditions. We present the case of a 68-year-old woman with chronic synovitis showing multiple plasma cells containing PAS-positive Dutcher bodies and no evidence of a lymphoproliferative disorder.

REPORT OF A CASE

A 68-year-old woman with no significant past medical history presented with a soft tissue mass of her left foot. The mass was excised and consisted of a few irregularly shaped fragments of yellow-pink fibrofatty tissue measuring 5.5 × 4.0 × 1.0 cm. The patient’s laboratory workup revealed a normal complete blood count. Microscopically, the specimen showed fibrofatty tissue with chronic inflammation and focal hemosiderin deposits. Some areas were recognizable as synovium. These areas had marked chronic synovitis with sheets of plasma cells,特别 those with chronic synovitis or rheumatoid synovitis, that is, PAS-positive intranuclear inclusions (Figure 1). Immunoperoxidase stains for κ and λ light chains showed a polyclonal pattern not consistent with lymphoma (Figure 2). Both serum and urine protein electrophoretic studies were negative for a monoclonal spike, also arguing against the diagnosis of lymphoma. Polymerase chain reaction was negative for IgH gene rearrangement. The marked chronic synovitis and hemosiderin deposits were thought to be consistent with trauma. No Dutcher bodies were identified in the 7 file cases of marked chronic synovitis.

Seven cases identified from a 10-year search of the files at Memorial Hospital of Rhode Island (Pawtucket, RI) and coded as marked chronic synovitis or rheumatoid synovitis were stained with PAS stain. Both hematoxylin-eosin– and PAS-stained sections were examined for Dutcher bodies.

RESULTS

Microscopically, the specimen showed fibrofatty tissue with chronic inflammation and focal hemosiderin deposits. Some areas were recognizable as synovium. These areas had marked chronic synovitis with sheets of plasma cells, particularly those with chronic synovitis or rheumatoid synovitis, that is, PAS-positive intranuclear inclusions (Figure 1). Immunoperoxidase stains for κ and λ light chains showed a polyclonal pattern not consistent with lymphoma (Figure 2). Both serum and urine protein electrophoretic studies were negative for a monoclonal spike, also arguing against the diagnosis of lymphoma. Polymerase chain reaction was negative for IgH gene rearrangement. The marked chronic synovitis and hemosiderin deposits were thought to be consistent with trauma. No Dutcher bodies were identified in the 7 file cases of marked chronic synovitis.

COMMENT

Dutcher bodies are PAS-positive, diastase-resistant nuclear pseudoinclusions of eosinophilic cytoplasm found in plasma cells described by Dutcher and Fahey in Waldenstrom macroglobulinemia. Ultrastructurally, the nuclear pseudoinclusions are formed by a cytoplasmic invagination into the nucleus. They are smooth, membrane-bound, and surrounded by clumped chromatin. The pseudoinclusions are thought to result from the accumulation of immunoglobulin in the perinuclear cisterna.3

Distinguishing malignant and benign B-cell proliferations in extranodal sites can be challenging because of overlapping morphologic features.4,5 Features favoring lymphoma include architectural effacement, formation of masses, infiltrative growth pattern, cellular monomorphism, and atypia, as well as the presence of proliferation centers.5 Dutcher bodies are a feature of clinically indolent MALT lymphomas.4,5 In a study of endoscopic biopsy specimens of lymphoid infiltrates of the stomach, Dutcher bodies were associated with gastric lymphomas only (3/25) and were not found in any cases of gastritis (0/58).4 Other features identified in the same study that were associated only with lymphoma were prominent lymphoepithelial lesions and moderate cytologic atypia.4

Medeiros and Harris considered Dutcher bodies to be presumptive evidence of malignant lymphoma, but cautioned that a strict definition of Dutcher bodies must be used. In most of the cases they studied, Dutcher bodies, when present, were not difficult to identify and were pre-
sent in large numbers. However, they also found rare PAS-negative amphophilic intranuclear structures in some of the monotypic and polytypic infiltrates. These structures appeared to be related to cell degeneration and were not interpreted as Dutcher bodies.

In the present case, the intranuclear inclusions were PAS positive, and therefore they qualify as Dutcher bodies. This specimen contained no other morphologic features of lymphoma, additional workup for lymphoma was negative, and there was no clinical evidence of lymphoma. Thus, this is a case of benign chronic synovitis, most likely related to trauma, with an unusual finding of Dutcher bodies and no other features of lymphoma. Brittin and coworkers found plasma cells with intranuclear inclusion bodies in 6 patients with multiple myeloma, in 3 patients with macroglobulinemia, and in “a single plasma cell of a patient with an apparently reactive plasmacytosis.” In a major textbook of hematopathology, it is also mentioned that Dutcher bodies are “rarely seen in reactive proliferations” and are “only rarely, if ever, identified in lymphoid hyperplasias.” Thus, this case illustrates an underappreciated observation that Dutcher bodies may rarely occur in a benign reactive condition, such as synovitis. While Dutcher bodies may be a clue to the presence of low-grade lymphoma, they are not a definitive feature, particularly in unusual contexts.

References


