Relapsing Polychondritis and Malignant Lymphoma

Is Polychondritis Paraneoplastic?

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Background: Relapsing polychondritis (RP) is associated with other rheumatic or autoimmune disease in about 30% of cases; however, an association with malignancy is rare with the exception of myelodysplastic syndrome (MDS).

Observation: Herein we report the first case, to our knowledge, of RP following splenic non-Hodgkin lymphoma (NHL), and we have reviewed all the previous well-documented reports that described the cases of RP associated with malignant lymphoma (ML).

Conclusions: Our case and the review of reported cases showed that RP preceded ML in 2 cases, RP occurred after diagnosis and treatment of ML in 2 cases, and RP and ML occurred simultaneously in 1 case. The types of ML encountered were Hodgkin lymphoma, orbital mucosa associated lymphoid tissue type lymphoma, nodal NHL, and splenic NHL. From the frequent association of RP with MDS and, less frequently, with ML, we speculate that some RP cases may occur as a paraneoplastic condition of the concurrent hematological malignancies.

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A 60-year-old Japanese woman was admitted to our hospital complaining of headache, vertigo, joint pain, and auricular swelling. Three years earlier, she had been diagnosed as having stage IIA (Ann Arbor Staging System) splenic NHL (diffuse large B-cell lymphoma). She was treated with 3 series of treatments with cyclophosphamide, doxorubicin hydrochloride, vincristine sulfate, and prednisolone, followed by topical radiation therapy.

Physical examination revealed fresh red areas of erythema with swelling and tenderness in both ears (Figure, A). An incisional biopsy was performed under the clinical diagnosis of RP. Histopathologically, decreased basophilia of the cartilage and degenerated marginal chondrocytes with inflammatory infiltration of lymphocytes and neutrophils were observed (Figure, B). Immunofluorescence microscopy revealed C3 and C1q deposits in the junctional areas of fibrous and cartilaginous tissue. Ophthalmological and otolaryngological examination revealed uveitis and moderate sensorineural deafness. Cardiovascular involvement was not observed in findings from an electrocardiogram and ultrasonographic cardiography. In laboratory examinations, biochemical tests detected high levels of C-reactive protein (7.5 mg/dL; reference, <0.5 mg/dL), weakly positive antinuclear autoantibodies (28.0 index by enzyme-linked immunosorbent assay method; reference, <20), but negative results for rheumatoid factor. Complete blood cell counts showed thrombocytopenia (22 000/µL; reference range, 150 000-400 000/µL). Bone marrow aspiration test findings showed no malignancy. The patient had both auricular chondritis, ocular inflammation, hearing loss, and seronegative inflammatory arthritis, which fulfilled the diagnostic criteria of RP according to Michet et al. Loxoprofen sodium and diclofenac sodium were unsuccessful in suppressing the external ear inflammation, and 30 mg/d of prednisolone was required. Two weeks later, the auricular swelling and other organ symptoms including eye, inner ear, and joints had rapidly subsided. Prednisolone was gradually tapered, and to date, remission has been obtained for 7 months. There has been no subsequent relapse of lymphoma.
Figure. Findings from the examination. A, Clinical features. Physical examination revealed fresh, red erythematous areas with swelling and tenderness of the left ear. B, Histopathological features showed decreased basophilia of the cartilage and degenerated marginal chondrocytes with inflammatory infiltration of lymphocytes and neutrophils (hematoxylin-eosin, original magnification ×40).

Table. Clinical Features of Patients With Relapsing Polychondritis (RP) and Malignant Lymphoma (ML)

<table>
<thead>
<tr>
<th>Patient/Sex/Age at Onset of RP, y</th>
<th>Type of ML</th>
<th>ML Occurred Before/After RP</th>
<th>Manifestation of RP</th>
<th>Other Complication</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/M/46</td>
<td>Hodgkin lymphoma</td>
<td>6 mo after RP Simultaneously</td>
<td>Auricular swelling Saddle nose deformity, thickened ears, deafness</td>
<td>Rheumatoid arthritis, pyoderma gangrenosum</td>
<td>Miller et al(^5^)</td>
</tr>
<tr>
<td>2/M/63</td>
<td>Nodal NHL (diffuse, mixed cellular type)</td>
<td></td>
<td></td>
<td></td>
<td>Hedayati et al(^6^)</td>
</tr>
<tr>
<td>3/M/41</td>
<td>Hodgkin lymphoma stage IIIB</td>
<td>21 y before RP</td>
<td>Auricular swelling</td>
<td>Acute leukemia</td>
<td>Case records of MGH(^7^)</td>
</tr>
<tr>
<td>4/F/41</td>
<td>Orbital MALT type B cell lymphoma</td>
<td>12 y after RP</td>
<td>Auricular swelling, joint involvement</td>
<td></td>
<td>Lichauco et al(^8^)</td>
</tr>
<tr>
<td>Present case/F/60</td>
<td>Extramedial NHL (splenic diffuse large B) stage IIA</td>
<td>3 y before RP</td>
<td>Auricular swelling, ocular, joint involvement</td>
<td>Nonspecific colitis</td>
<td>. . .</td>
</tr>
</tbody>
</table>

Abbreviations: MALT, mucosa-associated lymphoid tissue; MGH, Massachusetts General Hospital; NHL, non-Hodgkin lymphoma.

COMMENT

To date, there have been 4 case reports that have suggested an association between RP and lymphoma (Table).\(^1-4^\) Our case and the review of reported cases showed that RP preceded lymphoma in 2 cases, RP occurred after diagnosis and treatment of lymphoma in 2 cases, and RP and lymphoma occurred simultaneously in 1 case. The types of lymphoma encountered were Hodgkin lymphoma, orbital mucosa-associated lymphoid tissue type lymphoma, nodal NHL, and splenic NHL. Yet, the association of RP with MDS has been described on several occasions, and it has been suggested that up to a quarter of RP cases may be associated with MDS.\(^2^\) Only 5 cases in the world literature, including our case, cannot provide the evidence that there is a true association between RP and lymphoma. However, from the frequent association of RP with MDS and, less frequently with lymphoma, we speculate that some RP cases may occur as a paraneoplastic condition of the concurrent hematological malignancies, which was proposed by the case records of Massachusetts General Hospital.\(^7^\)

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REFERENCES