Not All That Swells is Cancer: Lymphadenopathy as a Marker for CVID

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Background

- CVID is the most common form of severe antibody deficiency found in both children and adults.
- Impairment of B cell differentiation results in a defective production of immunoglobulins.
- Age of onset ranges between 20 and 40
- Patients with CVID are most often afflicted with recurrent bacterial infections of the sinopulmonary and GI tract.
- Splenomegaly and lymphadenopathy are common findings, and the former is closely associated with granulomatous disease.

Case Description

- 24M w/hx psoriasis and nephrotic syndrome presented with abd pain, N/V, myalgias, and fever for two days.
- Nephrotic syndrome was present during childhood and resolved after treatment with tacrolimus and prednisolone.
- Hypotensive and febrile with physical exam findings significant for diffuse lymphadenopathy and psoriatic plaques which have been present for two years.
- Found to have Neisseria Meningitidis bacteremia along with splenomegaly noted on CT.
- Labs were significant for CKD3a and proteinuria.
- Lymph node biopsy negative for malignancy, notable for follicular hyperplasia and paracortical expansion.
- Immunologic workup revealed hypogammaglobulinemia in the setting of proteinuria, low CH50, and hypocomplementemia.
- B cell subset analysis: significant for a severe reduction in class switched memory B along with increased transitional B cells (CD38, IgM+)
- A primary immunodeficiency panel revealed only variants of unknown significance.
- No response to Tdap or Pneumovax indicating failure vs loss of protection.

Discussion

This patient fit the criteria for CVID due to his hypogammaglobulinemia, lack of vaccine response, and lack of an alternative genetic immunodeficiency. However, his presentation is unique in that he did not have a history of recurrent acute otitis media or sinopulmonary bacterial infections. He had a remote history of buttock abscesses requiring antibiotics twice but was relatively healthy until he presented with disseminated Neisseria Meningitis. It is interesting to note his history of nephrotic syndrome since renal involvement in CVID is rare. In contrast, hypogammaglobulinemia is a frequent finding in steroid-responsive nephrotic syndrome due to urinary loss of proteins resulting in decreased production of IgG and IgA. However, since his albumin was normal it is less likely that he has a recurrence of his nephrotic syndrome. Given that the patient's primary immunodeficiency panel was negative, the next step would be to perform wide exome sequencing to determine whether he has a primary versus secondary hypogammaglobulinemia.

Results

- B cell subset analysis:
    - Low CD27
    - Low class switched CD27+IgD-IgM (0.2%) -> granulomatous disease
    - CD38+IgM+ high (7.5%) -> lymphadenopathy
- ANA, ANCA, HIV neg
- IgG 148 | IgA <10 | IgM 994
- CH50 18 | C3 43 | C4 <8
- CD4/8 ratio 0.4
- Albumin 4.3

Purpose

This case is important in that it shows how not all patient presentations match the textbook. This patient met all the defining characteristics of CVID except that he did not have recurrent infections. This could be in part due to him maintaining good hygiene and avoiding sick people to stay healthy. Regardless, CVID should remain in the differential in patients with hypogammaglobulinemia.

Contact Information

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