

## Waldenstrom Macroglobulinemia

Waldenstrom Macroglobulinemia is a non-Hodgkin lymphoma of plasma cells. It can present with peripheral neuropathy and hyperviscosity syndrome. Due to hyperviscosity, there can be headaches, blurred vision, Raynaud phenomenon, and thrombosis. Petechiae can be seen as well. On bone marrow biopsy, abnormal plasma cells with Dutcher bodies are typically evident. In the blood, monoclonal IgM antibodies are elevated. Management includes observation, chemotherapy, or plasmapheresis.



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### Characteristics

#### Non-Hodgkin Lymphoma

##### [Nun-hog-king with Lime-foam](#)

Waldenstrom macroglobulinemia is a Non-Hodgkin lymphoma. Non-Hodgkin lymphomas are defined as a solid malignancy of lymphocytes without Reed Sternberg cells.

### Clinical Features

#### Peripheral Neuropathy

##### [Purple-wavy Neuron-extremities](#)

In peripheral neuropathy, mixed peripheral nerve damage is present. It starts with proximal muscle weakness and overlying paresthesias.

#### Hyperviscosity Syndrome

##### [Hiker-viscous-honey](#)

When circulating antibodies increase in blood, it becomes viscous. Blood flow to organs becomes sluggish and microvasculature is affected causing a myriad of symptoms deemed hyperviscosity syndrome.

#### Headache, Blurred Vision

##### [Headache-lump Blurry-eye](#)

Due to hyperviscosity, impaired blood flow to the retina and brain causes blurred vision and headaches.

#### Raynaud Phenomenon

##### [Blue Rain-cloud](#)

Due to hyperviscosity, cold agglutinins are formed leading to impaired acral blood flow and causes Raynaud phenomenon. Raynaud phenomenon is characterized by intermittent interruptions of blood flow to the fingers, causing them to become pale and painful.

#### Thrombosis

##### [Trombones](#)

Sluggish blood flow causes venous stasis. Venous stasis is a component of Virchow's triad and can lead to thrombosis.

#### Petechiae

##### [Tiki-mask](#)

Consumption of platelets due to coagulopathy causes an increased risk of bleeding. Petechiae are defined as non-palpable, non-blanchable lesions less than 3mm.

### Diagnosis

## Abnormal Plasma Cells

### [Abnormal Plasma Cell](#)

The bone marrow is a primary lymphoid organ where plasma cells haven't undergone class switching. A bone marrow lymphoma of plasma cells on bone marrow biopsy would show  $\geq 10\%$  of abnormal plasma cells which have not undergone class switching.

## Dutcher Bodies

### [Dutch-boy with Dutcher Bodies](#)

The abnormal plasma cells in Waldenstrom macroglobulinemia contain intranuclear, Periodic Schiff acid positive inclusion bodies called Dutcher bodies.

## Monoclonal IgM Antibodies

### [Monocle Mountain-goblin Ant-tie-body](#)

Plasma cells before isotype switching produce monoclonal IgM. The plasma cells seen in Waldenstrom Macroglobulinemia produce monoclonal IgM.

## Management

### Observation

#### [Observatory](#)

Waldenstrom Macroglobulinemia is an indolent disease of old age. So, to avoid over-treatment asymptomatic patients are kept under observation.

### Chemotherapy

#### [Chemo-head-wrap](#)

In symptomatic patients, Rituximab, Bruton tyrosine kinase inhibitors, or alkylating agents are used.

### Plasmapheresis

#### [Plasma-fairy](#)

To relieve the patient of hyperviscosity syndrome, IgM antibodies are filtered out of plasma using plasmapheresis.