

## Splenic lymphoma: Radiologic–pathologic correlation

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**Section:** Abdominal imaging

**Area of Interest:** Spleen

**Procedure:** Education

**Imaging Technique:** Ultrasound

**Imaging Technique:** CT

**Imaging Technique:** MR

**Imaging Technique:** PACS

**Special Focus:** Lymphoma Case Type: Clinical Cases

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**Patient:** 64 years, female

### Clinical History:

Sixty-four-year-old woman presented with fatigue and LUQ sensation of bulk for two months, with no fever or weight loss and otherwise free medical history. No enlarged lymph nodes or hepatomegaly were found on physical examination. The spleen was enlarged (seven cm below the left subcostal line).

### Imaging Findings:

US: Spleen appeared enlarged and contained a round-shaped mass. The lesion was hypoechoic and heterogeneous and a “target sign” was noted.

CT: A round-shaped mass was found on the spleen which was hypodense in the centre with unclear borders. The spleen was enlarged and had heterogeneous density parenchyma in the portal phase of the examination.

MRI: On T2 sequence a round mass, heterogeneous in signal intensity with decreased signal intensity in the centre was demonstrated. “Target-sign” was also seen.

Pathology: The lymphomatous mass protruded and invaded the splenic capsule. Lesion margins were well defined. In the centre of the mass a cavity due to necrosis was noted.

### Discussion:

Patients with HL have adenopathy and are asymptomatic. Splenic lymphoma tends to have systemic symptoms like fever, night sweats and weight loss. [1] NHL of the spleen is usually found incidentally manifested as a peripheral lymphocytosis. Simultaneously, NHL characteristics are referred to be symptomatic splenomegaly in advanced stages and a rare manifestation is an autoimmune characteristic like autoimmune haemolytic anaemia, immune thrombocytopenia, circulating anticoagulants.

The main imaging patterns are splenomegaly (without a discrete mass), splenomegaly with diffuse infiltration, solitary mass (with necrosis or invasion of the splenic capsule), 2-10 cm miliary lesions, multifocal nodules (which differentiate from splenic infarcts and fungal abscesses). [2, 3]

The most-used imaging methods for evaluation of splenic pathology are US and CT. Characteristic findings in US are enlarged spleen with hypoechoic, heterogeneous mass and the presence of “target sign”. [4] On CT splenic lymphoma appears as splenomegaly containing a round mass which is usually hypodense and also one or more

nodules. Sometimes infiltration of splenic artery is seen. MRI has a similar accuracy to CT, but with decreased sensitivity. [5] The low sensitivity of MRI is due to the similar relaxation times of normal splenic tissue and lymphoma. [5]

**Differential Diagnosis List:** NHL of the spleen, Splenomegaly (any cause), Splenic abscess(-es) (rarely occur with lymphadenopathy), Diffuse infiltration, Multifocal nodules

**Final Diagnosis:** NHL of the spleen

#### **References:**

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## Figure 1

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**Description:** US (sagittal section): demonstrates enlarged spleen. Inside the spleen a round-shaped lesion with hypoechoic center—probably due to necrosis—and thickened hyperechoic borders creates "target sign". **Origin:** N.Courcoutsakis, MD Dept of Radiology University Hospital of Alexandroupolis

**Figure 2**

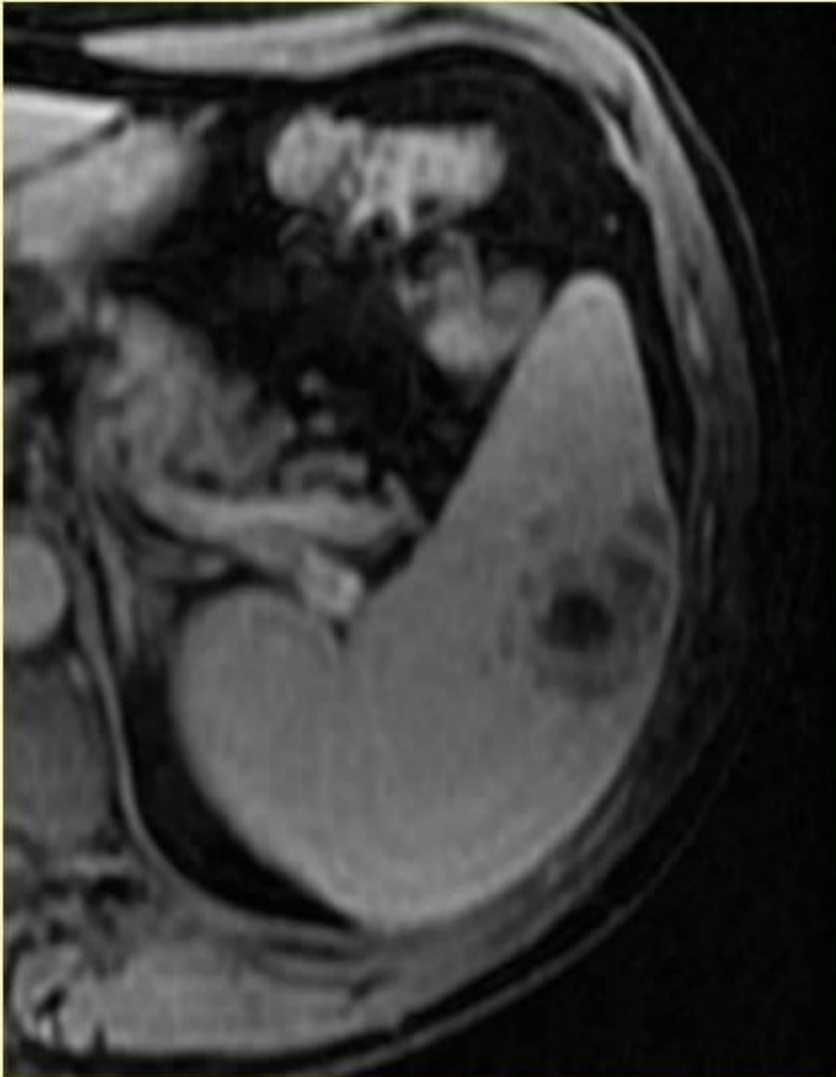
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**Description:** CT (transverse section): Splenomegaly with a round-shaped mass which has low density in the center—due to necrosis—with hyperindense thickened borders. Splenic artery is infiltrated, because it appears vague. **Origin:** N.Courcotsakis, Dept of Radiology University Hospital of Alexandroupolis

**Figure 3**

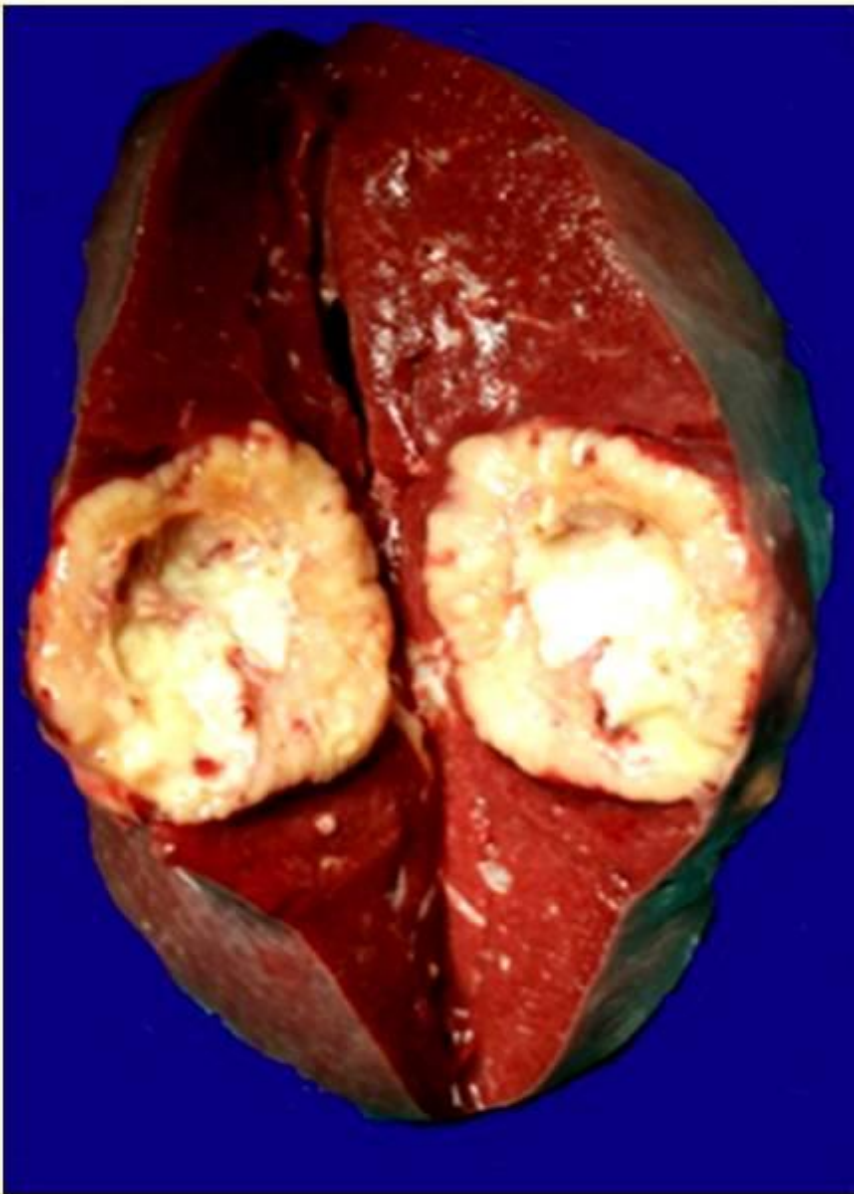
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**Description:** MRI (axial MRI T2-weighted image): Round-shaped, heterogenous mass with low intensity in the centre. Splenomegaly is obvious. Small nodules around the splenic artery in the hilum are seen, correlating to lymphadenopathy. **Origin:** N.Courcotsakis, Dept of Radiology, University Hospital of Alexandroupolis

**Figure 4**

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**Description:** Pathology: enlarged spleen with solitary lesion with necrosis. The lesion has a thickened wall, invades the capsule and protrudes outside. **Origin:** N.Courcoutsakis, Dept of Radiology, University Hospital of Alexandroupolis