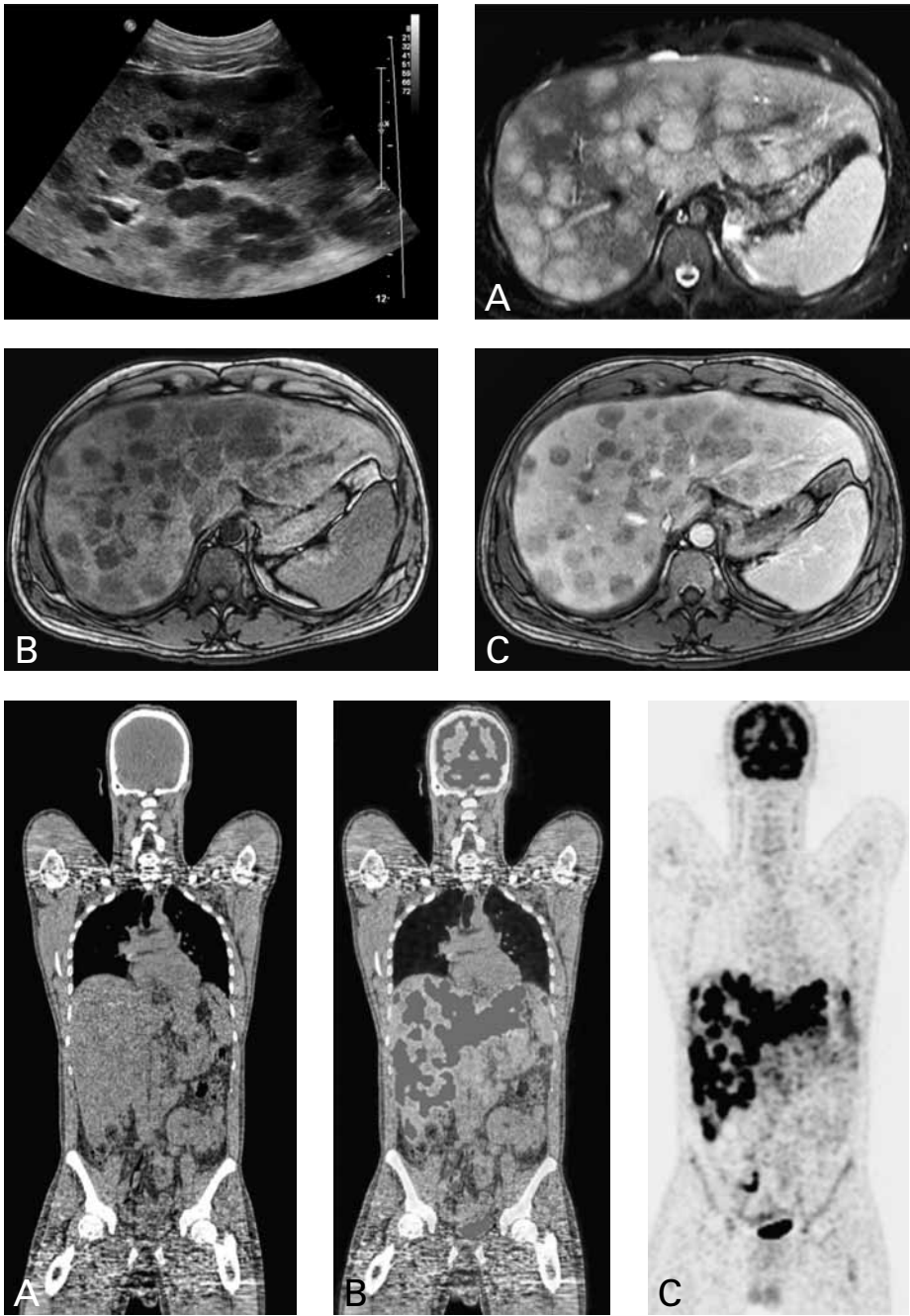


DIFFUSE B-CELL LYMPHOMA

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Key-word: Lymphoma, AIDS-related

**Background:** A 39-year-old patient took medical advice because of progressive fatigue, with nausea, fever, non specific abdominal pain, 3 weeks after coming back from Asia. He had been positive for HIV for 6 years. Blood tests show an increased CRP level (4 mg/dl, nl < 1 mg/dl).



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Fig.	1	2A
	2B	2C
	3A	3B 3C

## Work-up

Ultrasonograph (Fig. 1) was performed for exclusion of a liver mass and showed hepatomegaly, numerous well-defined, hypoechoic nodular lesions in both liver lobes. The lesions are well-defined, with a maximum diameter of 4 cm.

MRI of the liver (Fig. 2) was performed for the characterization of the liver abnormalities. On axial T2-weighted images (A), all lesions appear hyperintense. On axial T1-weighted images (B), all lesions show a low signal intensity. On axial Gd-enhanced T1-weighted images (C), the liver lesions do only moderately enhance following Gadolinium administration, indicating hypovascularity.

PET-CT scan (Fig. 3) was required for the detection of other abnormalities and showed increased uptake of FDG by the liver lesions, at the level of the ileo-caecal junction, on the distal ileum and along the sigmoid colon.

## Radiological diagnosis

Based on the clinical story and the imaging findings, the differential diagnosis includes infectious disorders (tuberculosis, histoplasmosis, infection due to mycobacterium) and malignancy. In the presented case, the diagnosis of *diffuse B-cell lymphoma* was made on sonographically guided fine-needle aspiration biopsy.

## Discussion

Common AIDS related malignancies include Kaposi's sarcoma, high-grade B-cell non-Hodgkin's lymphoma and invasive cervical cancer. Despite the impact of antiretroviral therapy, the risk for having a lymphoma is still more frequent in patients with HIV than in the normal population. The incidence of Non Hodgkin's Lymphoma (NHL), particularly high-grade B-cell NHL, is higher than Hodgkin Disease (HD). Common localizations of NHL are in the extra-nodal sites (brain, intestines, liver and bone). In the abdomen, the gastrointestinal tract is the first site of disease, the liver being the second. Liver is more frequently a secondary site of NHL than a primary site of disease.

With sonography, four forms of hepatic changes related to lymphoma are distinguished: (a) hepatomegaly in secondary hepatic lymphoma being or not being related to AIDS and primary

hepatic lymphoma; (b) multiple rounded well-delineated hypoechoic liver lesions with secondary hepatic lymphoma; (c) a large heterogeneous echoic mass, in primary lymphoma of the liver and (d) absence of sonographic abnormalities. It has to be noted that in some cases the lesions appear isoechoic, or anechoic.

CT findings include hepatomegaly, in combination with splenomegaly and enlarged lymph nodes. Focal hepatic lesions occur in 29 up to 50% of patients, with diameter ranging from 1 to 15 cm in diameter or higher. The lesions are hypovascular and, when larger than 4 cm, may be heterogeneous. A thin rim around the small round lesions is seen in 23% of the cases. When treated, calcifications can occur into the lesions.

MRI findings include hypointense nodules on T1-weighted images and hyperintense on T2-weighted images.

The role of PET-CT scan is mainly for the staging of the disease, and to monitor therapy. The increased uptake, focal or diffuse, is in concordance with the other imaging modalities.

The differential diagnosis includes hepatic cysts, liver abscesses and multifocal hepatocarcinoma. In case of hepatomegaly, acute hepatitis has to be considered.

In conclusion, visualisation of multiple focal liver lesions associated with splenomegaly and enlarged lymph nodes can contribute to suggest lymphoma particularly in the context of HIV patients. Biopsy of a nodule is mandatory for the diagnosis.

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