

Case	(444) Neurotoxoplasmosis, a case report
Authors	M. Legorburu Toña, P. Diez Fores, J. Gomez Muga, G. Elizundia Lopez.
Centre	Hospital Universitario De Basurto.

CASE PRESENTATION

A 36-year-old male who was a known case of HIV went to the emergency services with low fever, headache and focal motor seizures with secondary generalization, with 6 episodes in the last 8 days.

Axial non-contrast CT scan shows multiple hypodense lesion with mild mass effect and edema. Axial contrast-enhanced CT scan shows a ring enhancement of the right parietal lesion with a small nodule along the wall of the enhancing ring (eccentric target sign).

MR images show on axial T2-FLAIR-weighted images bilateral parenchymal focal lesions with alternating concentric layers (concentric target sign) and surrounding edema.

Axial contrast-enhanced T1-weighted images show ring enhancement of the lesion with eccentric target sign, suggestive of toxoplasmosis.

DISCUSSION

Neurotoxoplasmosis is an opportunistic infection caused by the intracellular protozoan parasite *Toxoplasma Gondii* in immunocompromised patients, being the most common CNS infection and mass in patients with AIDS.

Pathologically, cerebral toxoplasmosis can appear like multiple parenchymal focal lesions or like diffuse necrotizing encephalitis, which affects predominantly basal ganglia, thalamus and corticomedullary junction.

On nonenhanced CT neurotoxoplasmosis is observed as multiple hypodense areas with perilesional edema and it may be associated with mass effect. On postcontrast studies solid, nodular or ring enhancing lesions are typically observed. Whereas in MR, these lesions are typically iso or hypointense in T2 surrounded by an hyperintense halo because of the edema, with ring enhancement in T1 pondered sequences after gadolinium administration. It should be noted that there are two more specific patterns in the diagnosis which are highly suggestive of toxoplasmosis.

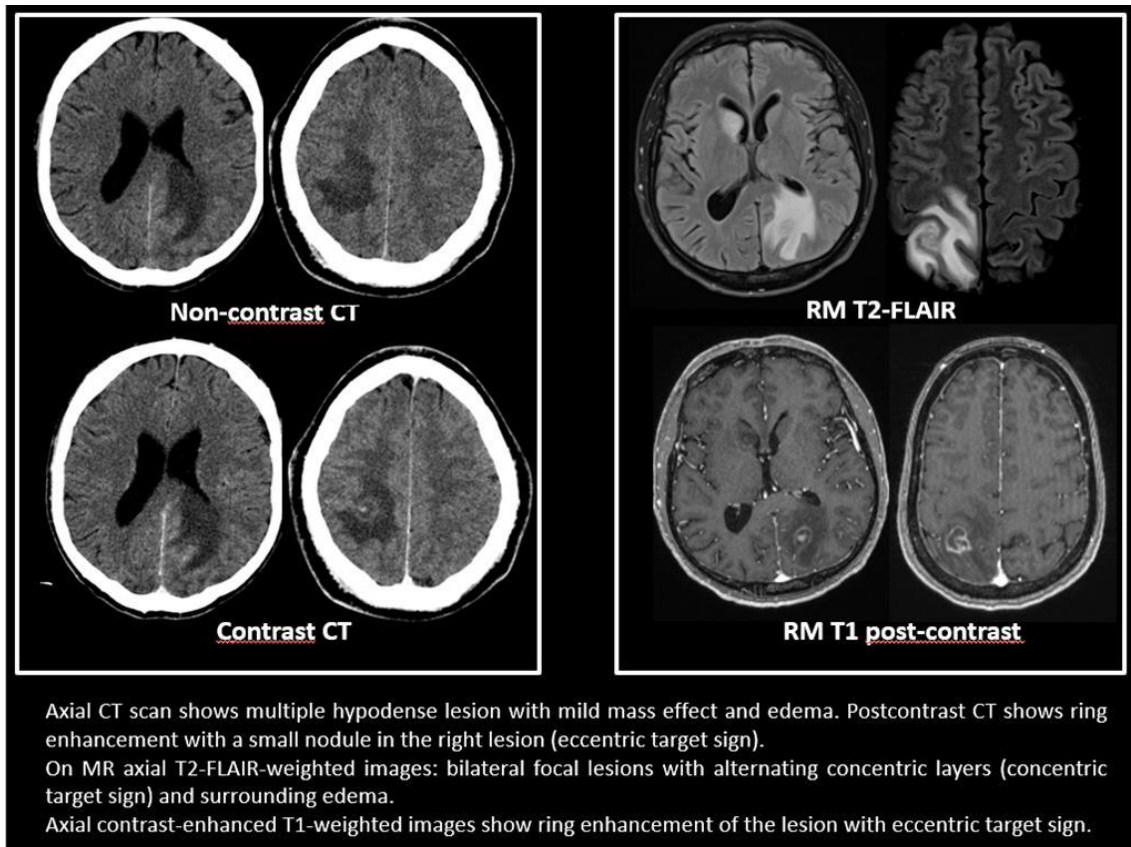
On the one hand, the “eccentric target sign” that is seen on T1 post-contrast images affects especially cortical lesions, characterized by a small nodule along the wall of the enhancing ring.

And, on the other hand, it is alsotypical on T2 and FLAIR images the “concentric target sign” affecting deep cerebral parenchyma, which has alternating concentric layers: central hyperintensity correlated with necrosis, hypointense rim correlating with an inflammatory zone, and peripheral hyperintensity correlating with surrounding edema.

Imaging differential diagnosis considerations include principally CNS lymphoma and tuberculosis, so that the correct diagnostic approach means a different therapeutic attitude.

CONCLUSION

Even though the toxoplasmosis is increasingly less frequent due to the antiretroviral treatments, it is important to know the radiological semiology in order to be able to differentiate it from the lymphoma and tuberculosis.



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