

Case	(545) Intracranial ring enhancement lesions
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CASE PRESENTATION

A 85 years old female patient anticoagulated, with hypertension and ancient heart attack personal history was admitted at the emergency room because of vertiginous syndrome.

A non-contrast head CT showed a well demarcated hypodensity at the left cerebellar hemisphere (LCH) that depicted the appearance as an acute/subacute ischemic lesion (Fig.A). Further evaluation with Brain MRI (Fig.B) demonstrated a subacute intraparenchymal LCH hemorrhage compatible with hemorrhagic transformation of ischemic infarct.

Due to this findings, anticoagulation drug was withdrawn. After twenty days of admission, she started with acute diffuse abdominal pain that raised the suspicion of mesenteric ischemia.

The angio CT documented an intraluminal defect filling of 3cm in the abdominal aorta compatible with a floating thrombus(Fig.C). In order to restore anticoagulation, a non-contrast head CT was performed to asses the status of the subacute brain hemorrhage. Where we saw that the hemorrhage had similar size and shape and with peripheral enhancement because of the contrast used for the angio-CT (Fig.D).

DISCUSSION

Ring-enhancing lesions detected on contrast head CT at emergencies services could be challenging.

Differential diagnosis is broad: metastasis, primary central nervous system tumours, abscesses, granulomas, demyelinating lesions, subacute intraparenchymal hematoma... So it is important to take into account the different features of the lesion, as well as clinical presentation.

Ring-enhancing lesions pattern present a central cavity, homogeneous or heterogeneous, with a regular or irregular wall, of different thickness. Ring-enhancing lesions may be superficial, but they are usually subcortical or deep.

Usually, when the ring is smooth and thin is typical of an organizing abscess, whereas thick and irregular ring suggests a necrotic neoplasm. A incomplete ring opened towards the cortex favours a demyelinating lesion.

In this case, the contrast uptake occurs exclusively outside the hematoma itself, regular and well defined, that is more typical for subacute intraparenchymal hematoma. In addition, the clinical presentation and previous MRI helped confirm the diagnosis.

Therefore the radiologist should be familiar with the patterns and mechanism of contrast enhancement.

KEY points:

-Peripheral enhancement detected on contrast enhanced CT is typically appreciated in subacute stage of intracranial haemorrhage which can persist for several months.

CONCLUSION

We must know the main enhancing patterns and its clinical correlations, as we should always revise the previous studies of the patient.- Subacute brain hemorrhage have to be considered always when we see a ring enhanced lesion.

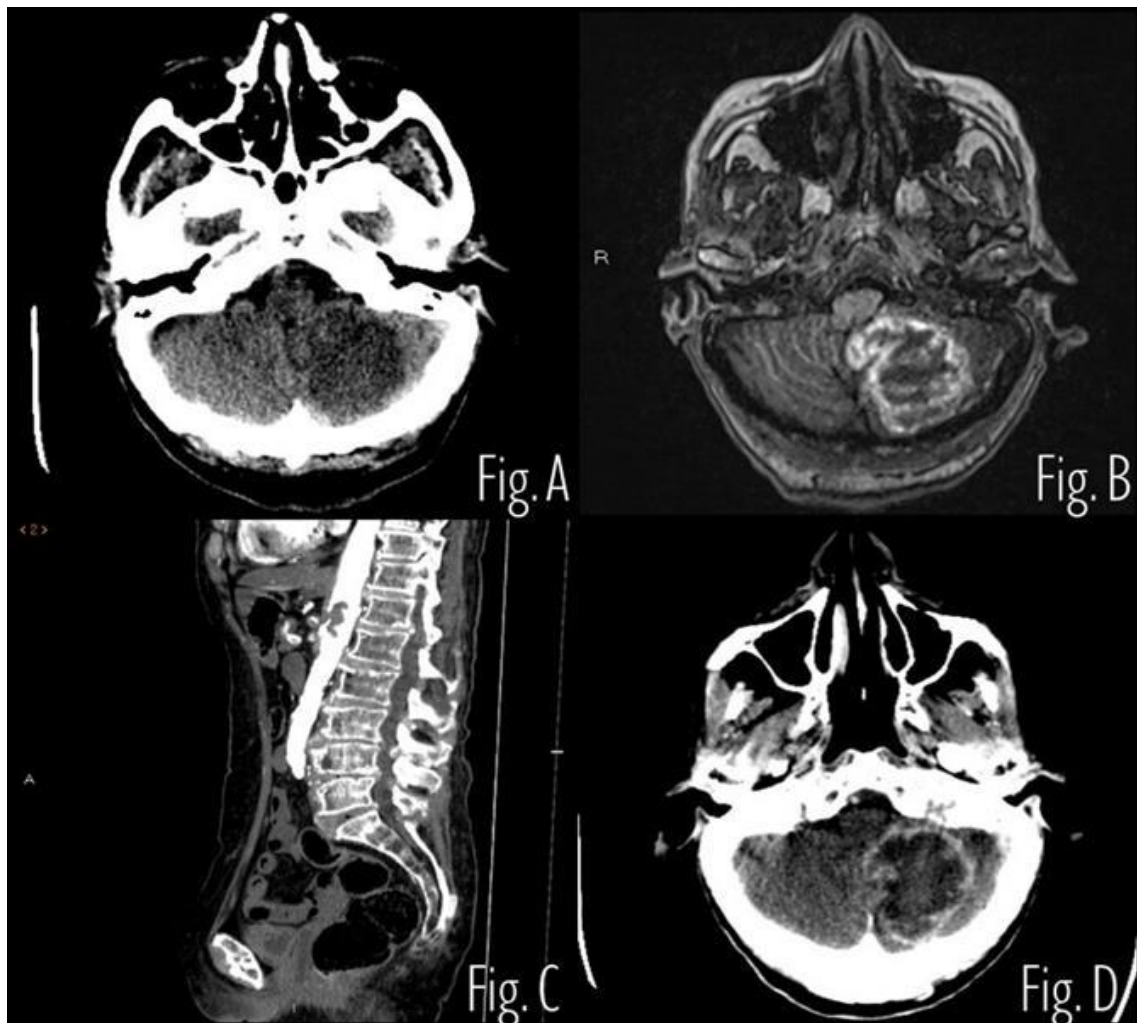


Fig A: Non-enhanced head CT: Left cerebellar hemisphere hypodensity with subtle mass effect over the 4th ventricle. **Fig B:** Brain MRI: non-enhanced volumetric T1 sequence. Subacute intraparenchymal Left cerebellar hemisphere hemorrhage compatible with hemorrhagic transformation of ischemic infarct and associated mass effect over the 4th ventricle caused triventricular hydrocephalus. **Fig C:** Abdominal angio CT: intraluminal floating thrombus of 3cm in the abdominal aorta compatible with a thrombus located at the origin of the celiac trunk and the superior mesenteric artery **Fig D:** Non-enhanced head CT which shows no significant interval change in size and appearances of the left cerebellar haemorrhagic stroke with peripheral ring enhancement.

BIBLIOGRAPHY

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