

Case	(299) Blood in the brain: haemorrhage or bleeding metastasis?
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CASE PRESENTATION

24 Year old woman with BRAF mutation and diagnosed of melanoma in 2014. She underwent surgery and was treated with Drabafenib and trametinib. In April 2016 she consulted the Emergency Department with headache, vomiting and right leg hypoesthesia.

We performed a brain CT that showed multiple spontaneously hyperdense lesions in both cerebral hemispheres and a heterogeneous lesion in right basal ganglia. Contrast enhanced Dual Energy CT (DECT) was performed.

The iodine map showed that the heterogeneous lesion in right basal ganglia was a solid lesion with enhancement and haemorrhagic focus. The rest of lesions showed contrast enhancement.

These findings are suggestive of multiple brain metastasis from melanoma, one of them partially haemorrhagic.

DISCUSSION

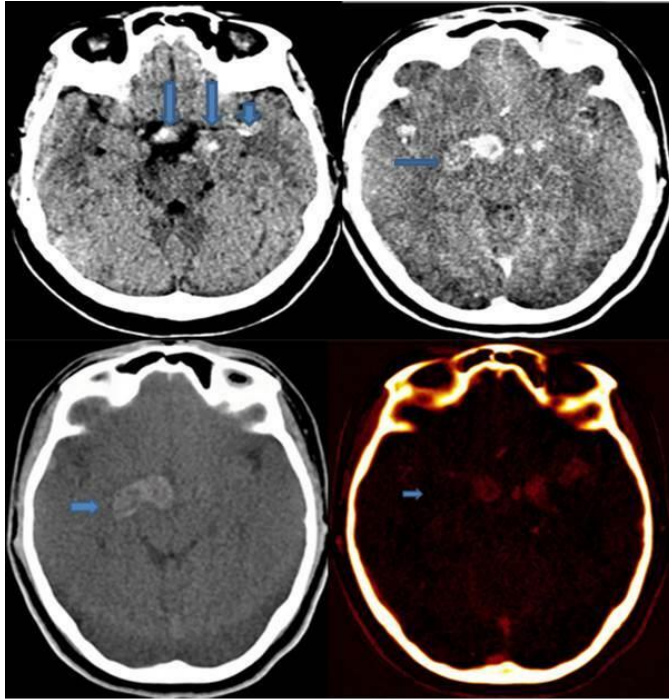
DECT allows differentiating intracranial haemorrhage from iodinated contrast material enhancement or contrast leak with high sensitivity and specificity. The use of DECT has been demonstrated to detect underlying tumors in case of acute intracranial haemorrhage in comparison to conventional CT with high accuracy. DECT has also the advantage of less radiation dose to the patient without compromise image quality.

CONCLUSION

DECT has a very high accuracy (between 93 and 100% of sensitivity) in distinguishing intracranial haemorrhage from iodinated contrast material staining. The higher sensitivity of DECT fusion images is attributable to the ability of DECT to separate iodine from hematoma.

This technique has some advantages like a shorter acquisition time, lower cost, and lack of contraindications in patients with metallic implants.

DECT can play a key role in the management of acute ischemic stroke because haemorrhagic transformation, a major complication of reperfusion therapy, can be reliably detected using this technique.



CT without contrast: Multiple spontaneously hiperdense lesions and a heterogeneous lesion in right basal ganglia.

Virtual CT without contrast: Heterogeneous image that suggests hemorrhagic lesion. DECT: Iodine map shows enhancement of part of the lesion.

BIBLIOGRAPHY

- Phan CM, Yoo AJ, Hirsch JA, Nogueira RG, Gupta R. Differentiation of hemorrhage from iodinated contrast in different intracranial compartments using dual-energy head CT. *AJNR Am J Neuroradiol.* 2012;33(6):1088-94
- Gupta R, Phan CM, Leidecker C, Brady TJ, Hirsch JA, Nogueira RG, Yoo AJ. Evaluation of dual-energy CT for differentiating intracerebral hemorrhage from iodinated contrast material staining. *Radiology.* 2010; 257(1):205-11.