

Investigation de l'hémorragie intracérébrale

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Conflit d'intérêt

- Pas de conflit à déclarer

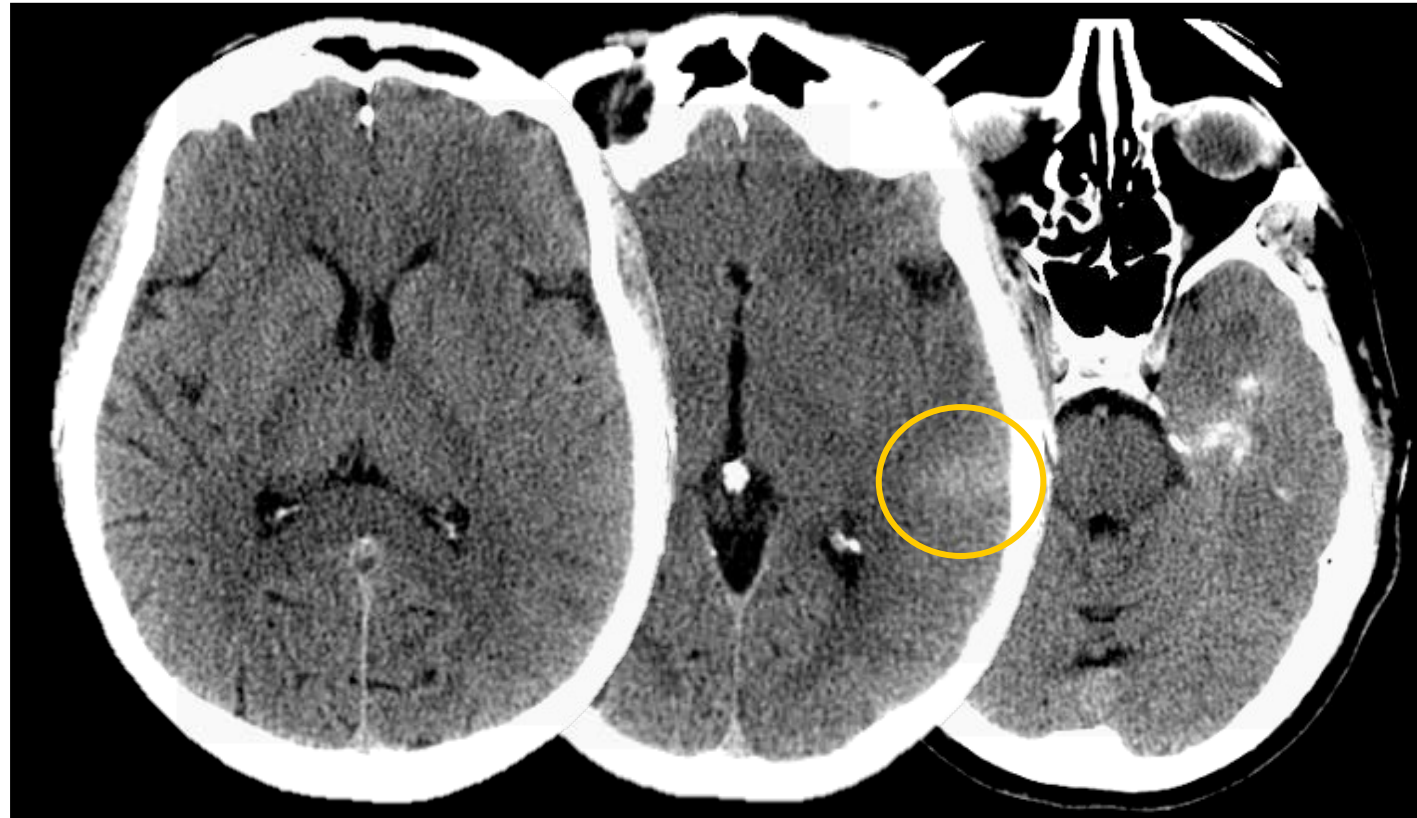
Plan de la présentation

- Présentation de cas
- Diagnostique différentiel de l'HI
- Approche à l'investigation de l'HI

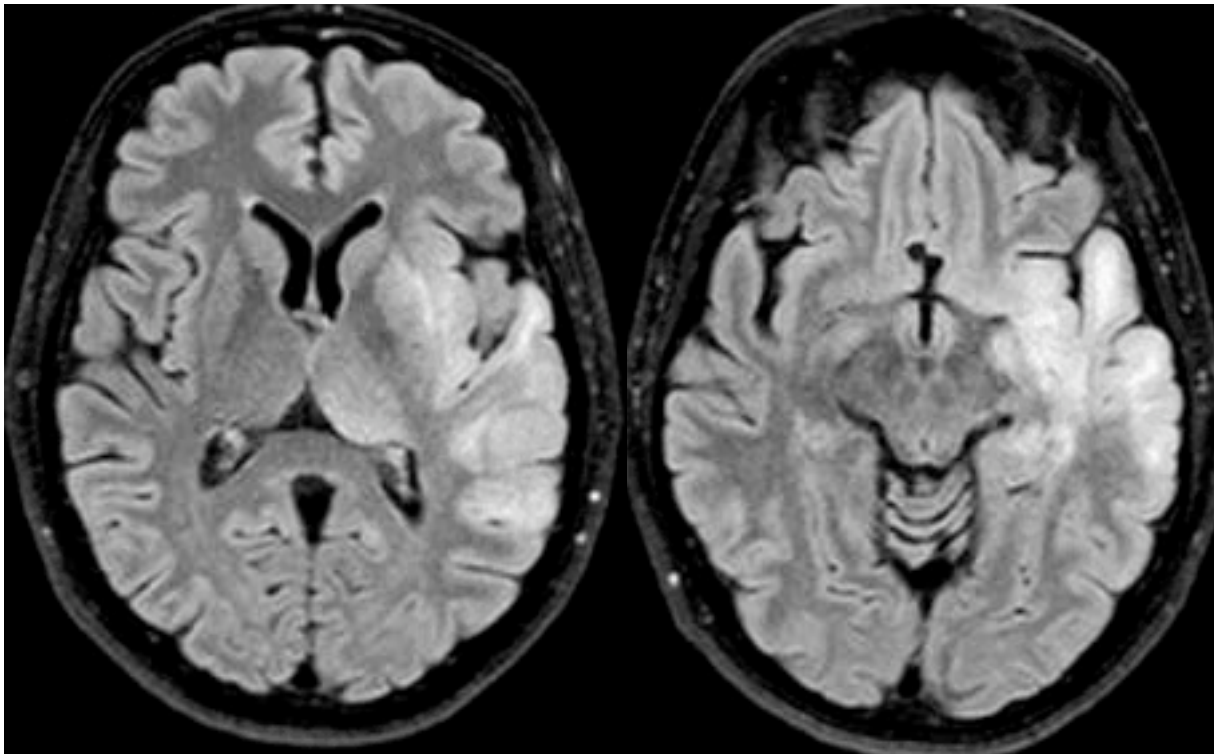
Histoire de cas

- Homme de 62 ans
 - Sans antécédents médicaux
 - Au restaurant pour affaires, début subit d'aphasie
 - À l'urgence, épisode de crise versive vers la droite et myoclonies faciales droites
 - L'examen démontre:
 - aphasie globale sévère
 - légère parésie faciale droite
 - hyperreflexie droite
- = NIHSS 7

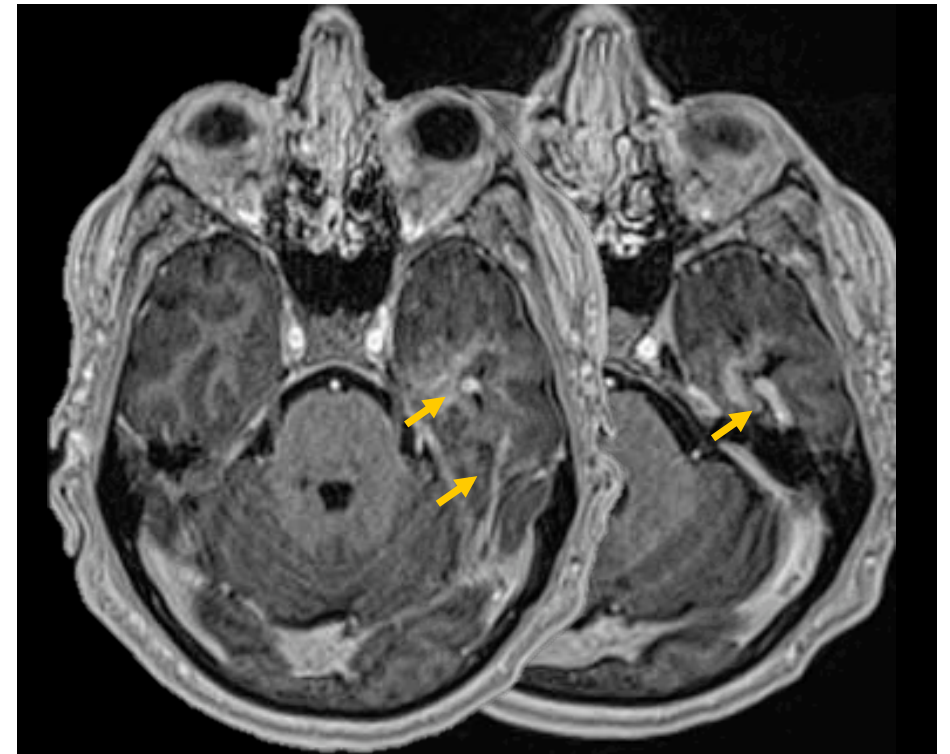
Investigations



Investigations

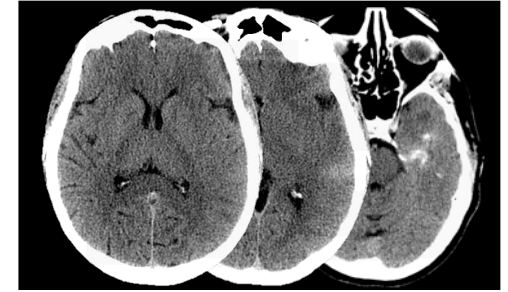


ACV avec transformation hémorragique?
TVP avec hémorragie veineuse?
Encéphalite? Tumeur?

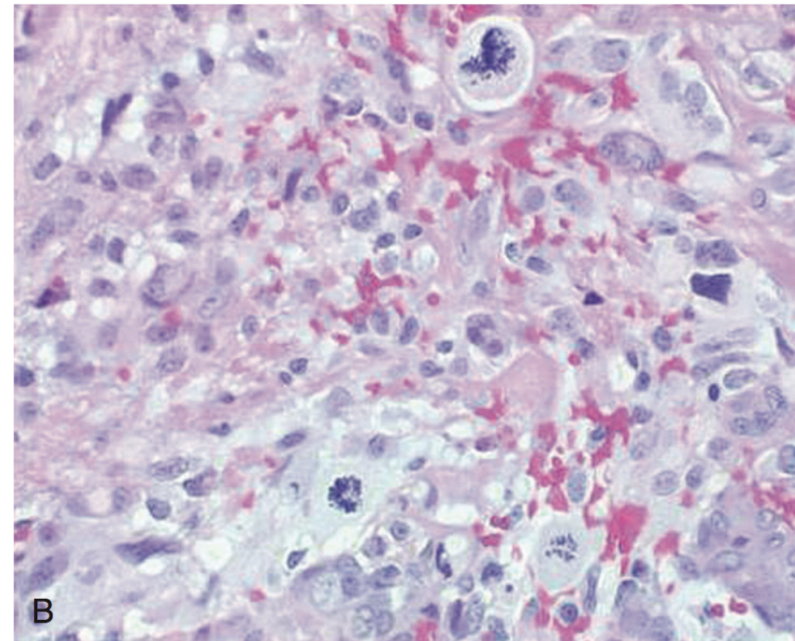
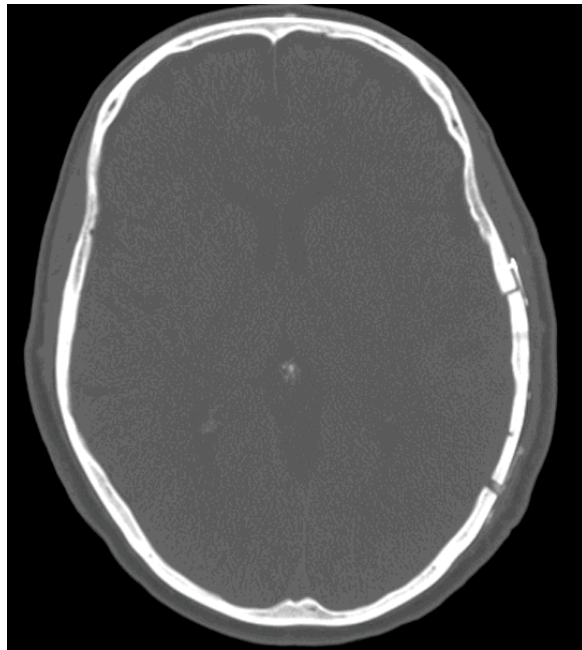


Anomalie veineuse de développement
avec calcifications au scan

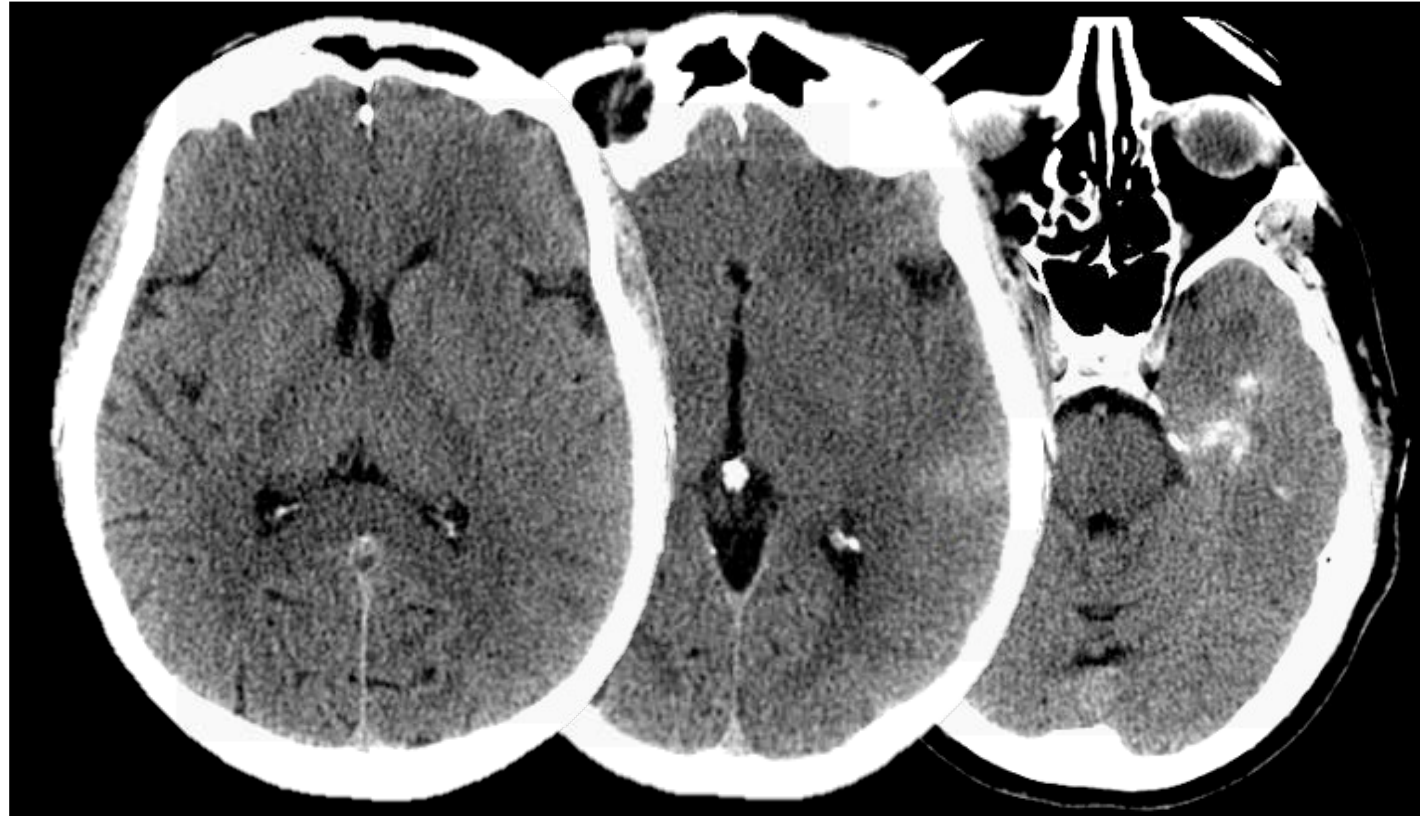
Investigations



- Consultation en neurochirurgie pour une biopsie
 - Lésion d'aspect maligne avec zone hémorragique
 - Spécimen congelé: gliome



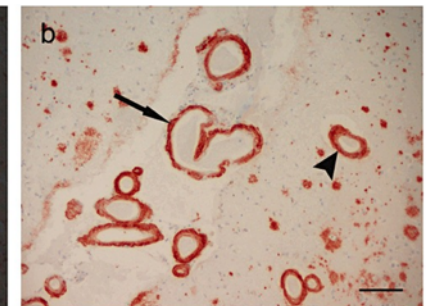
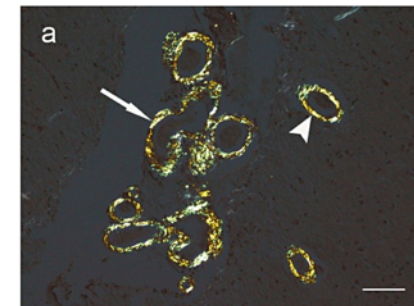
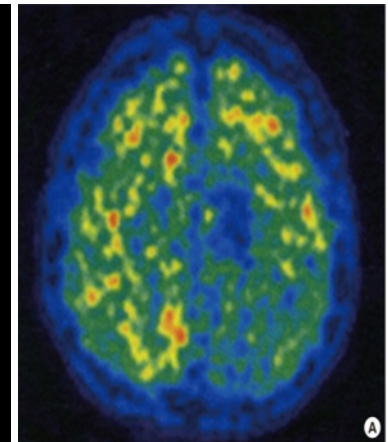
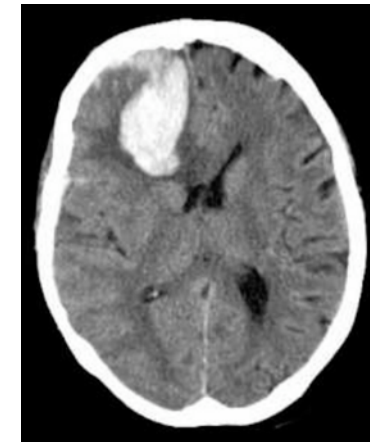
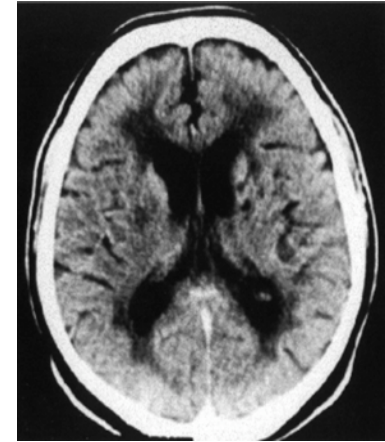
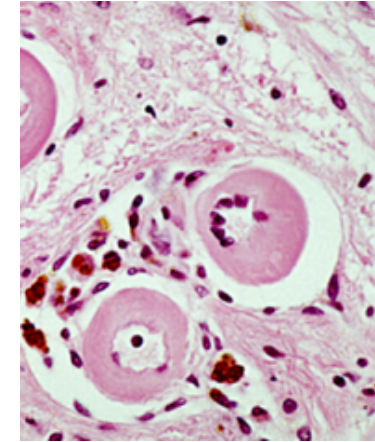
Diagnostique



Hémorragie intracérébrale secondaire à une tumeur cérébrale

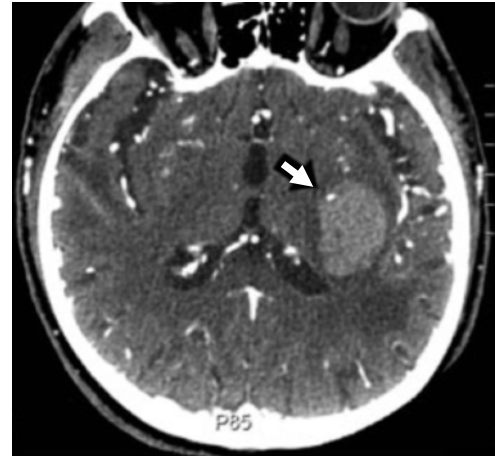
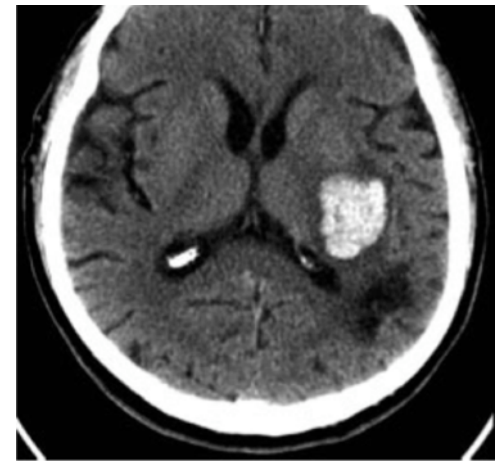
Hémorragie cérébrale

- Primaire
 - Hémorragie hypertensive (lipohyalinose)
 - Angiopathie amyloïde
- Secondaire (20%)
 - Lésions macrovasculaires
 - Malformation artérioveneuse (MAV)
 - Anévrisme cérébral
 - Hémangiome caverneux
 - Fistule artérioveneuse durale
 - Thrombose veineuse profonde
 - Transformation hémorragique d'AVC ischémique
 - Tumeur cérébrale
 - Diathèse hémorragique
 - Autres (moyamoya, endocardite, RCVS, vasculite, CADASIL)



Évaluation initiale

- Diagnostiquer l'hémorragie cérébrale (imagerie nécessaire)
- Identifier les patients à risque élevé d'expansion (30%)
 - Taille de l'hématome (ABC/2)
 - "Spot sign" (VPP 73%, VPN 84%)
- Exclure la présence d'une lésion sous-jacente
 - Potentiel d'intervention, éviter resaignement

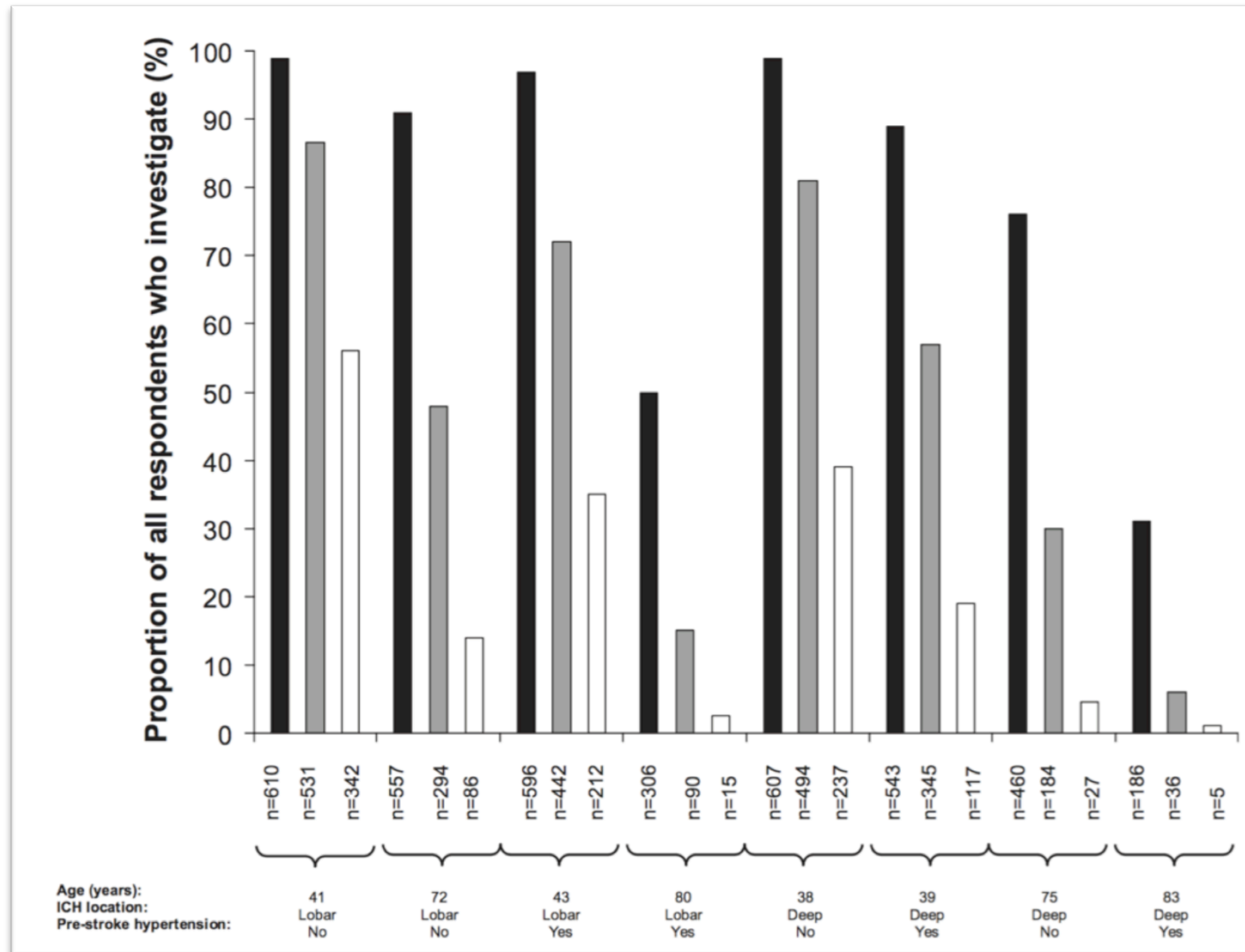


Investigations additionnelles

iii. In patients with confirmed acute ICH, CT angiography, MR angiography, or catheter angiography is recommended for most patients to evaluate for aneurysm or arteriovenous malformation.

3. CTA and contrast-enhanced CT may be considered to help identify patients at risk for hematoma expansion (Class IIb; Level of Evidence B), and CTA, CT venography, contrast-enhanced CT, contrast-enhanced MRI, magnetic resonance angiography and magnetic resonance venography, and catheter angiography can be useful to evaluate for underlying structural lesions including vascular malformations and tumors when there is clinical or radiological suspicion (Class IIa; Level of Evidence B). (Unchanged from the previous guideline)

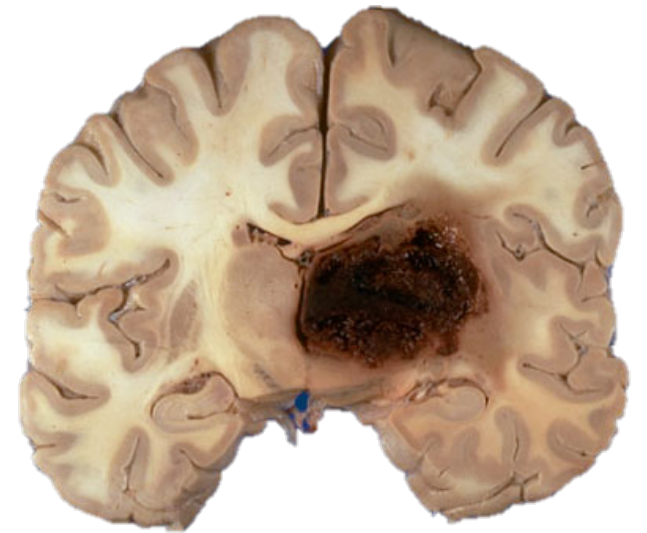
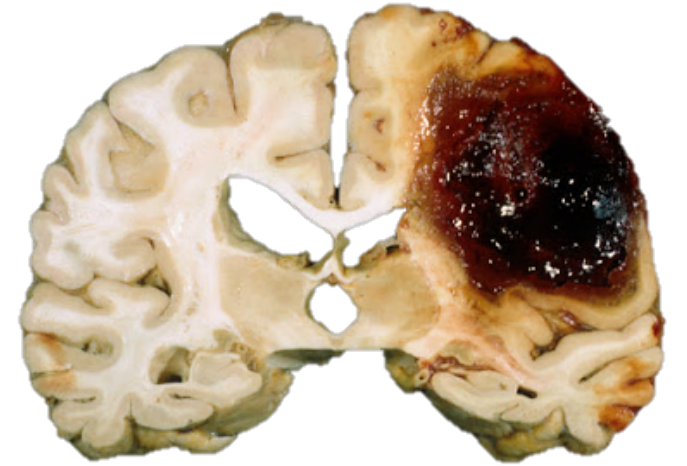
Variabilité de pratique



Cordonnier et al. Radiological Investigation of Spontaneous Intracerebral Hemorrhage Systematic Review and Trinational Survey. Stroke 2010

Qui investiguer?

- ↑Risque de lésion sous-jacent
 - Absence d'hypertension
 - Absence de maladie des petits vaisseaux au scan
 - Hémorragie lobaire (ou fosse postérieure en absence de HTN)
 - Jeune âge
- *Absence de malformation si (N=206):
 - (a) hypertension
 - (b) hémorragie profonde, et
 - (c) âge > 45 ans

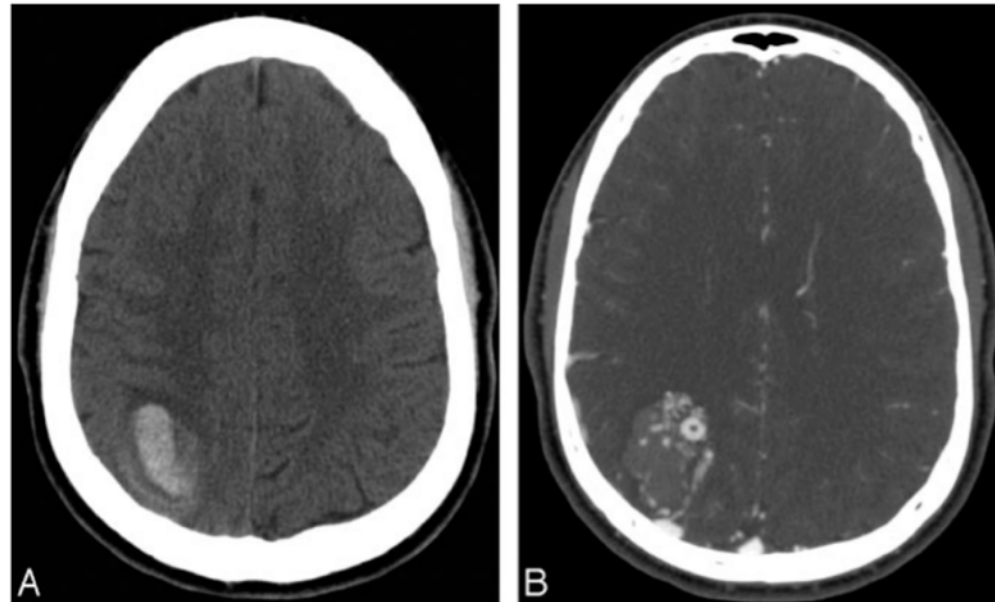


*Zhu et al. Spontaneous Intracranial Hemorrhage: Which Patients Need Diagnostic Cerebral Angiography? Stroke 1997.

Van Asch et al. Diagnostic yield and accuracy of CT angiography, MR angiography, and digital subtraction angiography for detection of macrovascular causes of intracerebral haemorrhage: prospective, multicentre cohort study. BMJ 2015

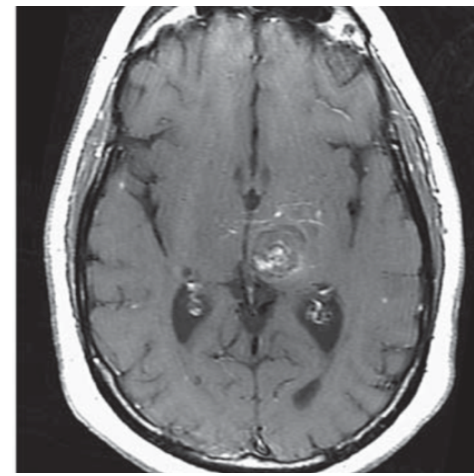
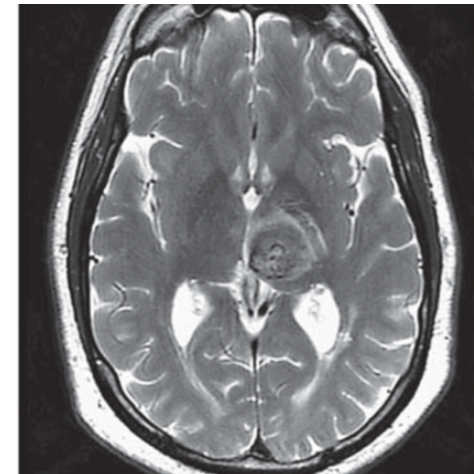
Comment investiguer?

- Première ligne: CT angiographie (+/- veinographie)
 - Sensibilité 80-95%, spécificité 90-99%
 - Angiographie cérébrale chez cas sélectionnés (MAV, anévrisme, fistule AV durable)



Investigations additionnelles

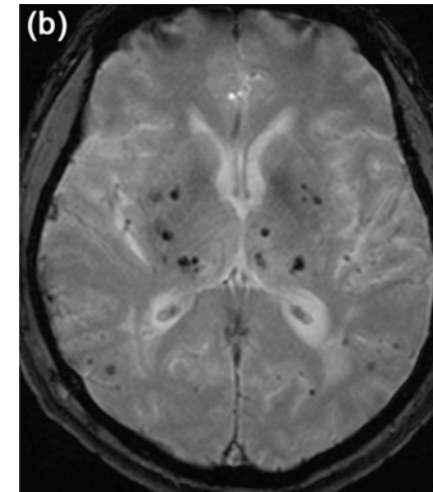
- IRM cérébrale: identification des tumeurs, petites lésions (hémangiomes caverneux), etc.
 - Augmente le rendement diagnostique de 1-18%
 - Étude sur 148 patients, présence de:
 - (a) Âge <55 ans,
 - (b) Absence d'hypertension, ou
 - (c) Hémorragie lobaire
- = Sensibilité 100% - Spécificité 31%



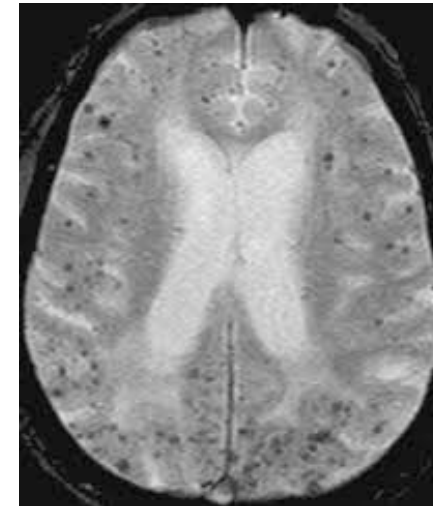
Imagerie par résonance magnétique

Table 2. MRI impact on diagnostic category, diagnostic confidence and management in 70 patients with spontaneous ICH (average of 2 observers)

Etiology of spontaneous ICH	MRI changed diagnostic category (n = 11.5)	MRI changed diagnostic confidence (n = 15.5)	MRI changed management (n = 14.5)
Hypertension (n = 25)	1 (4%)	5.5 (22%)	1.5 (6%)
CAA (n = 10)	2.5 (25%)	2 (20%)	4 (40%)
Vascular malformation (n = 7)	2 (29%)	2 (29%)	3.5 (50%)
Neoplasm (n = 3)	2 (67%)	0.5 (17%)	2 (67%)
Hemorrhagic transformation of an ischemic stroke (n = 3)	2 (67%)	1.5 (50%)	2 (67%)
Illicit drug use (n = 3)	0.5 (17%)	0.5 (17%)	0
Coagulopathy (n = 2)	0.5 (25%)	0.5 (25%)	0.5 (25%)
Other identified cause (n = 9)	0	3 (33%)	0.5 (6%)
Unknown cause (n = 8)	1 (13%)	0	0.5 (6%)
Total (n = 70)	16%	22%	21%



Angiopathie hypertensive



Angiopathie amyloïde

Délai d'imagerie

- Répéter l'imagerie après résorption d'hématome parfois nécessaire
 - Le signal de l'hémorragie peut masquer une lésion sous-jacente



Computed tomography angiography or magnetic resonance angiography for detection of intracranial vascular malformations in patients with intracerebral haemorrhage

Colin B Josephson^{1,2}, Philip M White³, Ashma Krishan⁴, Rustam Al-Shahi Salman²

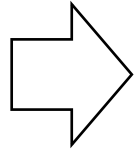
* Manque d'évidence pour recommander un délai optimal

Josephson et al. Computed tomography angiography or magnetic resonance angiography for detection of intracranial vascular malformations in patients with intracerebral hemorrhage. Cochrane Database Syst Rev 2014

Hino et al. Value of repeat angiography in patients with spontaneous subcortical hemorrhage. Stroke 1998

Conclusion

CT scan
Diagnostic HI



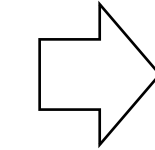
CT angiographie (+/- veinographie)

Probablement omettre si:

- Patient âgé
- Hypertension, et
- Hémorragie profonde

Angiographie cérébrale

Augmente rendement diagnostique



si négatif

IRM cérébrale (aigu vs. délayé)

↑ risque de malformation:

- Patient jeune
- Non-hypertendu, ou
- Hémorragie lobaire

OU

Doute diagnostique, considération
thérapeutique

Références

- Casaubon et al. Canadian stroke best practice recommendations: hyperacute stroke care guidelines. JOS 2015
- Cordonnier et al. Radiological investigation of spontaneous intracerebral hemorrhage. Stroke 2010
- Delgado et al. Diagnostic accuracy and yield of multidetector CT angiography in the evaluation of spontaneous intraparenchymal cerebral hemorrhage. AJNR 2009
- Hemphill et al. Guidelines for the Management of Spontaneous Intracerebral Hemorrhage. Stroke 2015
- Hino et al. Value of repeat angiography in patients with spontaneous subcortical hemorrhage. Stroke 1998
- Josephson et al. Computed tomography angiography or magnetic resonance angiography for detection of intracranial vascular malformations in patients with intracerebral hemorrhage. Cochrane Database Syst Rev 2014
- Kamel et al. A rule to identify patients who require magnetic resonance imaging after intracerebral hemorrhage. Neurocrit Care 2013
- Van Asch et al. Diagnostic yield and accuracy of CT angiography, MR angiography, and digital subtraction angiography for detection of macrovascular causes of intracerebral haemorrhage: prospective, multicentre cohort study. BMJ 2015
- Wada et al. CT Angiography “Spot Sign” Predicts Hematoma Expansion in acute Intracerebral Hemorrhage . Stroke 2007
- Wijman et al. Utility of early MRI in the diagnosis and management of acute spontaneous intracerebral hemorrhage. Cerebrovasc dis 2010
- Zhu et al. Spontaneous Intracranial Hemorrhage: Which Patients Need Diagnostic Cerebral Angiography? Stroke 1997