

NEUROIMAGÉ

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HÔPITAL NEUROLOGIQUE de MONTRÉAL
MONTREAL NEUROLOGICAL INSTITUTE



Et le défi continue...

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Une nouvelle voie d'investigation diagnostique vient de prendre vie dans le département de radiologie de l'Hôpital Neurologique de Montréal: **L'IMAGERIE PAR RÉSONNANCE MAGNÉTIQUE.**

MAGNETIC RESONANCE IMAGING should bring and add more information to our present diagnostic imaging. We are very proud to be part of this new challenge. We are sure that, with time and efforts, we will bring better understanding of human brain and hopefully a greater relief of its diseases.

Demonstration of two active demyelinating plaques, in each brachium pontis.

Image produced by the **PHILIPS GYROSCAN S-15** system.

INVERSION RECOVERY MODALITY

TE = 50 ms	IR = R
TR = 1400 ms	S = 1
TI = 400 ms	E = 1
Window: 1755	Matrix Size: 256 x 256
Level: 245	



Intra-Angiographic Aneurysmal Rupture

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Bleeding from an intracranial aneurysm at the time of angiography is a very rare occurrence. A good review of this complication has been given by Dublin and French (1). Our personal experience is of 3 cases from approximately 1,200 cerebral angiographies. We present the most recent one.

CLINICAL DATA

This is the case history of a 63 year old, right handed woman, with known rheumatic heart disease (inactive). On the day of admission, she experienced sudden and severe neck pain radiating down the back, followed by a severe bifrontal headache, nausea,

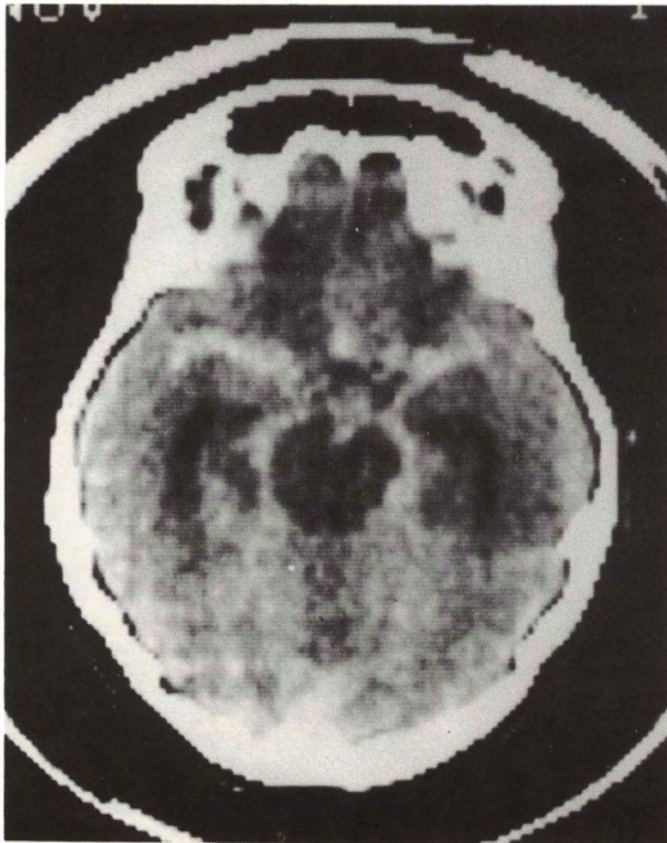


Figure 1

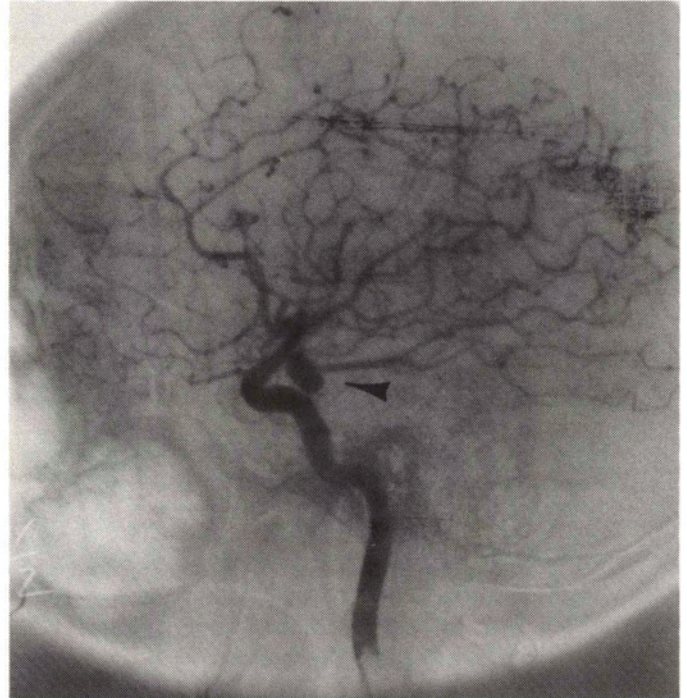


Figure 2

vomiting and loss of consciousness for approximately 5 minutes duration. On examination, the patient was somnolent, disoriented, confused. Her neck was stiff with a positive Kerning's sign. Her cranial nerves were intact and reflexes symmetric. A computed tomography scan of the brain done the same day showed a large amount of blood at the base of the brain (Fig. 1). A right internal carotid angiogram done the following day demonstrated a large right posterior communicating multilobulated aneurysm (Fig. 2).

The patient's condition gradually improved the following week. She became oriented and alert.

On the 11th day after her admission, an angiogram was repeated to assess the degree of vasospasm pre-surgically. During the procedure, the patient complained of severe headache and neck pain. She became confused and drowsy. Definite extravasation of

contrast from the right posterior communicating aneurysm was demonstrated (Fig. 3). The computed tomography scan performed subsequently confirmed the diagnosis of rebleeding (Fig. 4).

The patient rapidly deteriorated and died a few days later.

DISCUSSION

Dublin and French (1980) reported 30 cases from the literature, in addition to one of their own, stating:

- 1) no unusual clinical profiles with the exception of the predominance of female patients (71 %) and the presence of pre-angiographic arterial hypertension (11/14);
- 2) arterial spasm was observed very frequently (71 %);
- 3) lowered catheter flow rates (5 cc/sec.) may be helpful in preventing intra-angiographic aneurysmal rupture.

In our case, a female, there was no recorded hypertension. The examination was done with a 5 F catheter and manual injection of 6 cc of Hexabrix. There was, however, arterial spasm demonstrated at angiography. This would appear to be the only facilitating factor in our case.

CONCLUSION

Angiography remains the necessary examination to document an intracranial aneurysm prior to surgery.

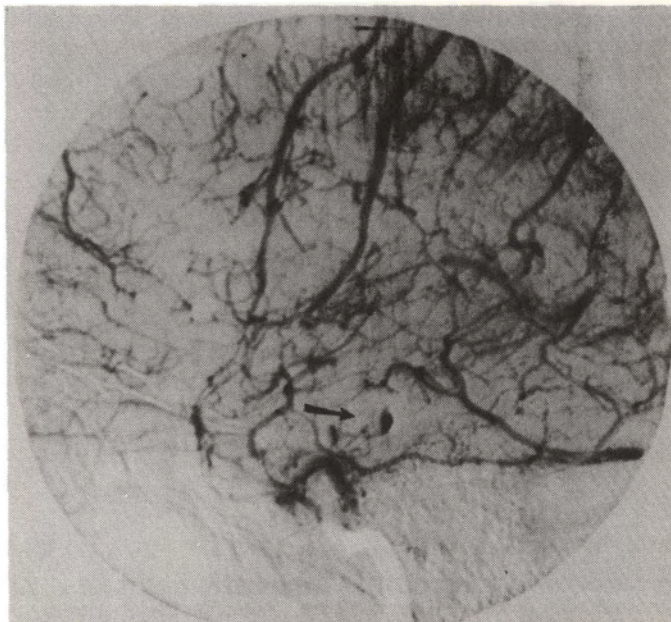


Figure 3

The number of intra-angiographic rebleeding events is too scarce to reconsider this technique. However, one should hesitate to repeat the investigation if:

- patient is a known hypertensive
- there is clinical manifestation of spasm (7-14th days)

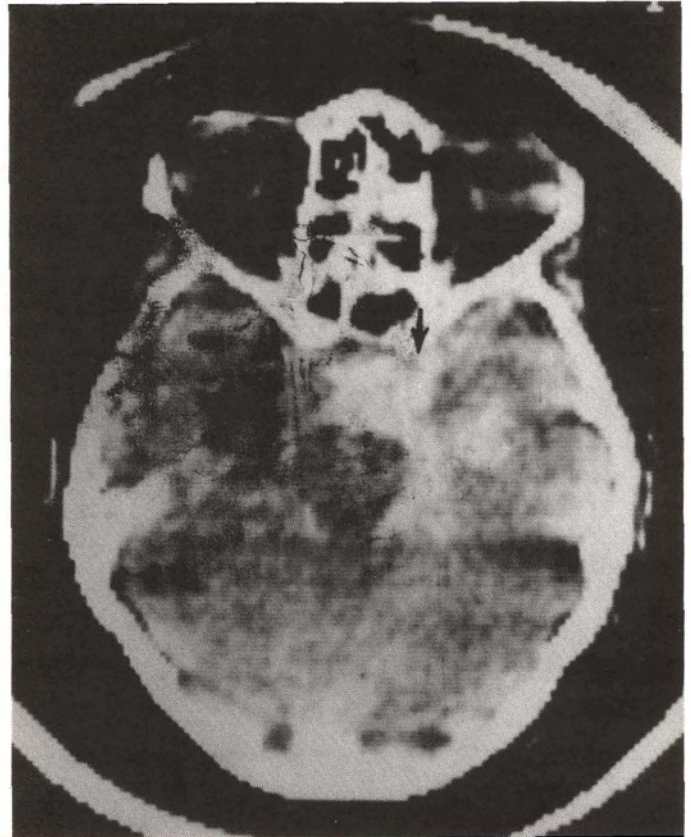


Figure 4

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Embolisation des malformations artérioveineuses intra-médullaires

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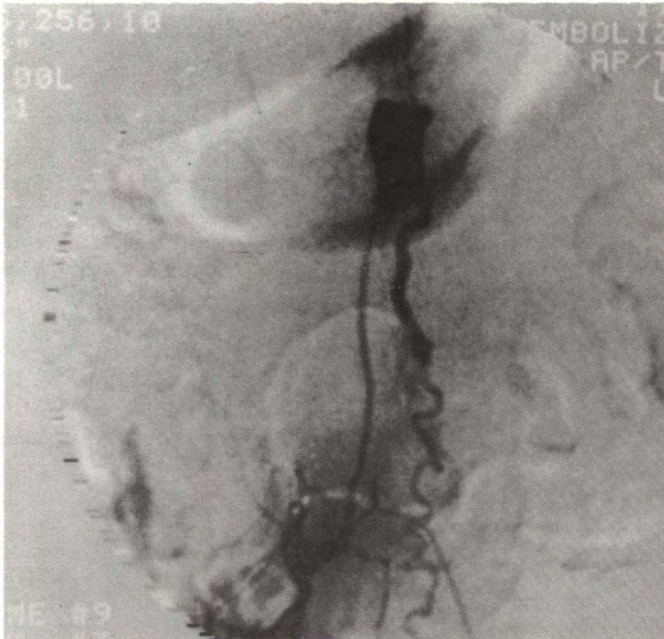


Figure A

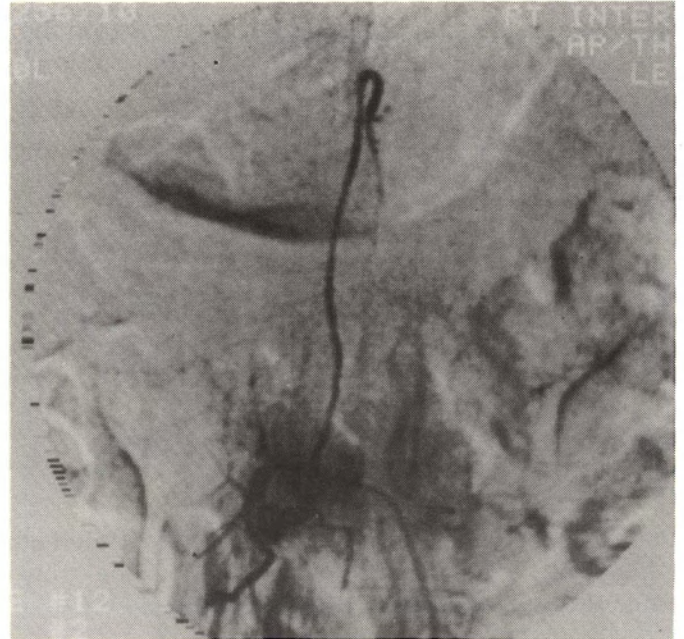


Figure B

Décrites par R. Djindjian, l'angiographie médullaire a permis de visualiser les malformations artérioveineuses de la moëlle. Grâce à elle, une étude précise de chaque pédicule de la malformation a été possible ainsi que sa localisation précise par rapport aux structures nerveuses.

Si les malformations artérioveineuses postérieures ont pu rapidement être opérées ou embolisées, les malformations intra-médullaires vascularisées par les branches de l'artère spinale antérieure ont toujours représenté un problème difficile en raison du territoire moteur qu'elles intéressent. Certaines opérations consistant à fendre la moëlle au niveau de son raphé médian ont été proposées pour aborder les artères sulco-commissurales issues de l'artère spinale antérieure mais ces interventions assez agressives ne sont pas dénuées de complications.

Nous avons récemment entrepris d'emboliser directement les malformations artérioveineuses intra-

médullaires vascularisées par l'artère spinale antérieure. Ceci a été possible grâce à deux progrès, à savoir: 1° des particules d'embolisation calibrées sont actuellement disponibles et permettent d'oblitérer le nidus d'une malformation issue de l'artère d'Adamkiewicz sans que les particules s'arrêtent dans celle-ci; 2° l'angiographie digitale permet de pratiquer des contrôles en cours d'embolisation et d'obtenir une image soustraite immédiate qui fera prendre la décision d'interrompre l'embolisation dès que le nidus est oblitéré.

La figure A représente un angiome intra-médullaire vascularisé par l'artère d'Adamkiewicz issue de la première artère lombaire droite. L'embolisation a été réalisée par des particules de polyvinyl alcool. L'embolisation a été interrompue dès que la série angiographique digitalisée a montré l'oblitération du nidus (figure B).

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