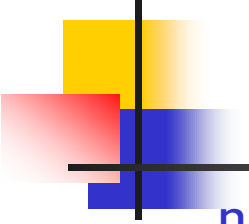




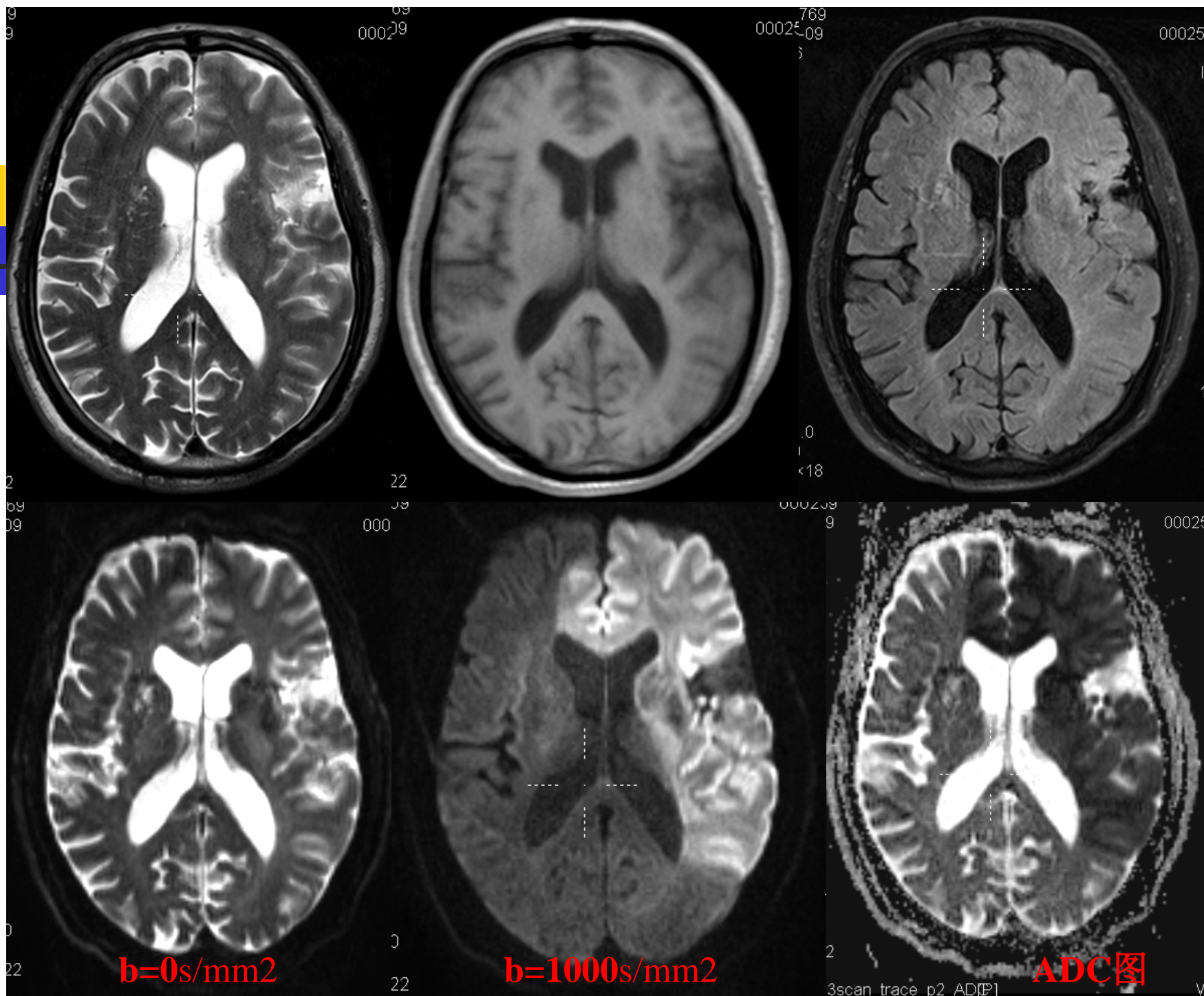
DWI和PWI在中枢神经系统中的临床应用

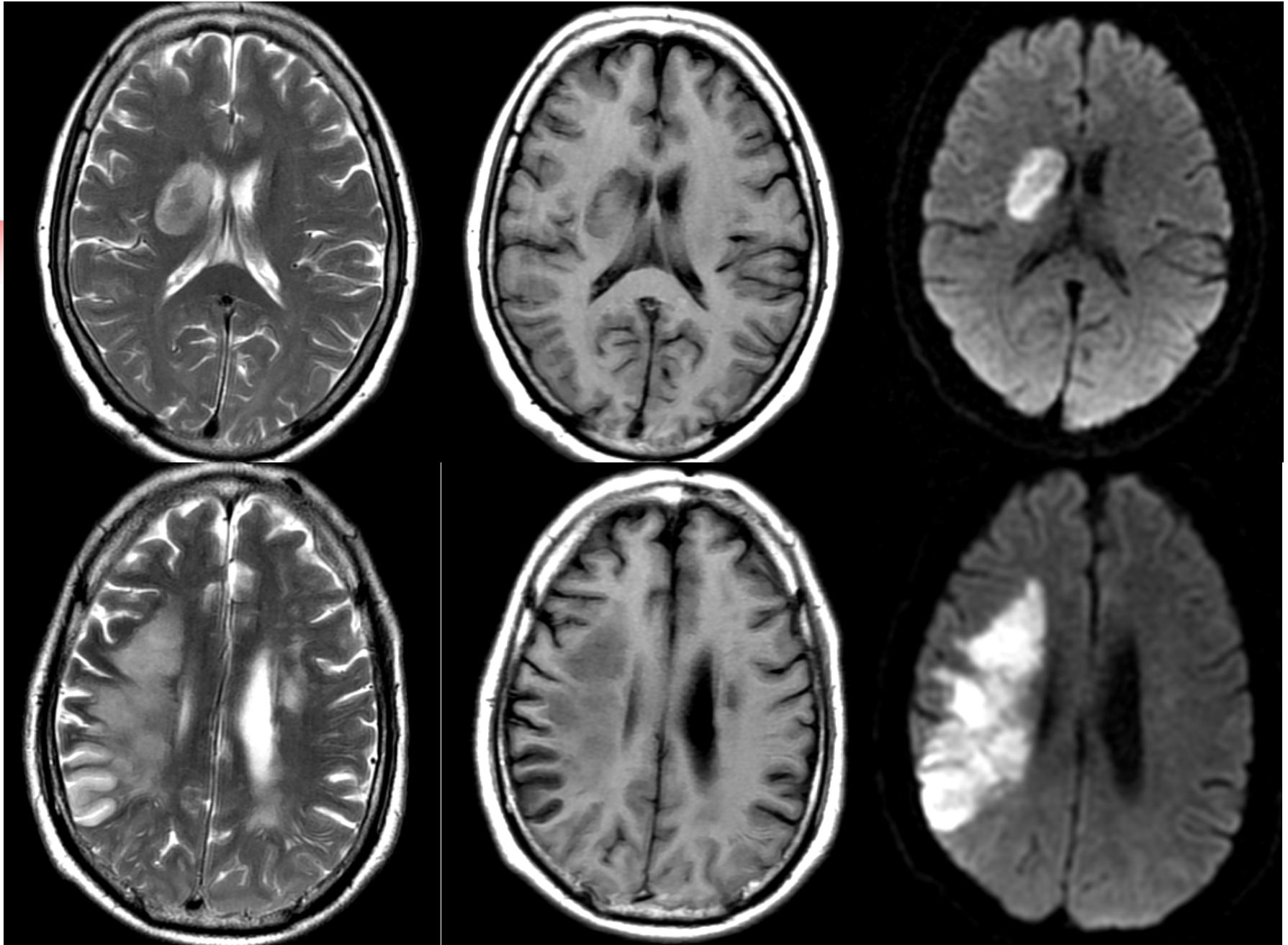
福建医科大学附属第一医院影像科

邢 振

- 
- n DWI (diffusion weighted imaging)：主要依赖于水分子的运动而非组织的自旋质子密度、T1值或T2值，为组织成像对比提供一种崭新的技术。
 - n 扩散敏感因子 (**b value**)，MRI中水分子的扩散敏感性随着b值的增加而增加，但图像的信噪比下降，目前颅脑DWI常用的b值约为 $1000\text{s}/\text{mm}^2$ 。
 - n 2个b值 \longrightarrow ADC图 (去除T2效应)。

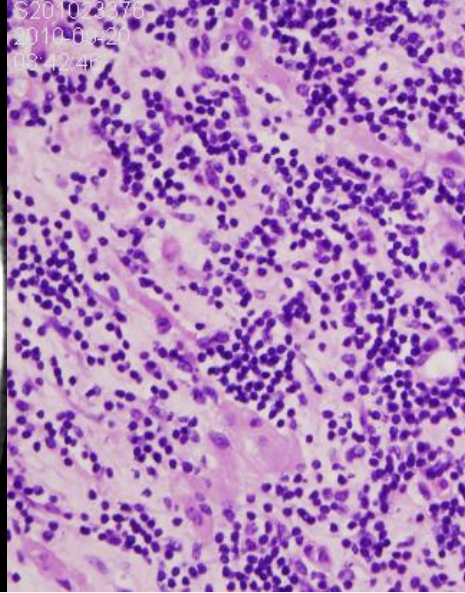
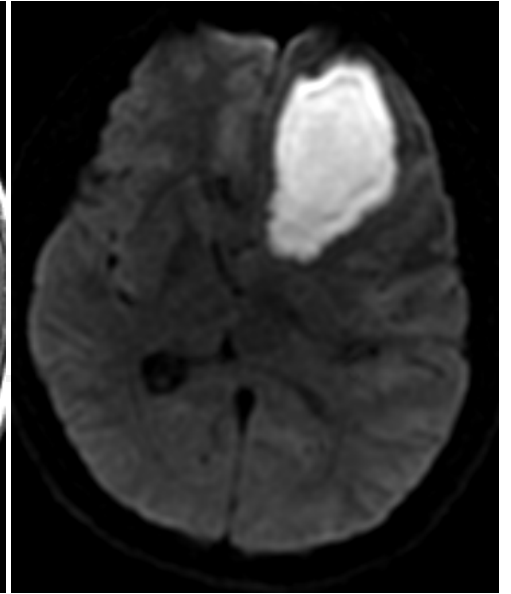
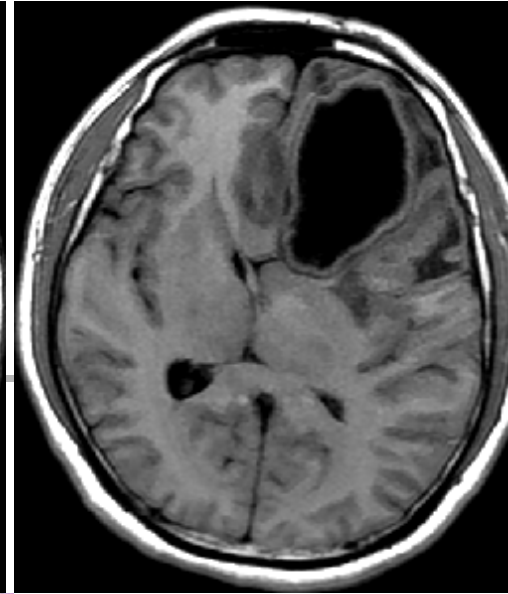
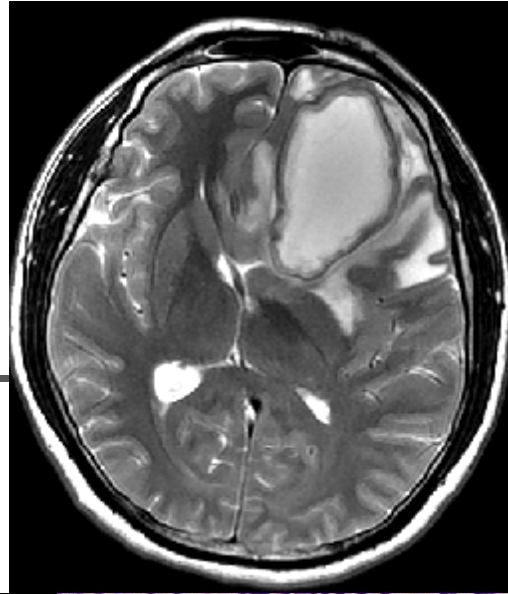
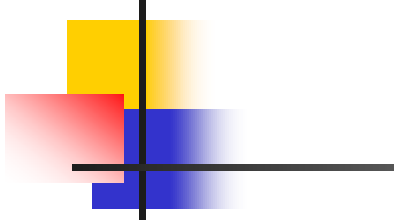
一、脑梗死





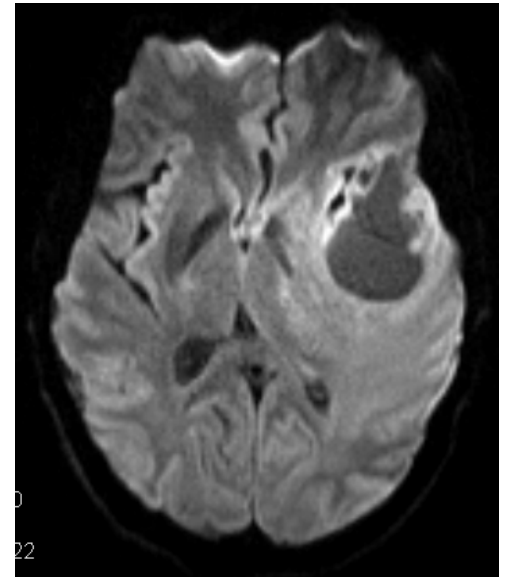
脑梗死，T1WI呈低信号，T2WI呈高信号，**DWI呈明显高信号**

二、脑脓肿

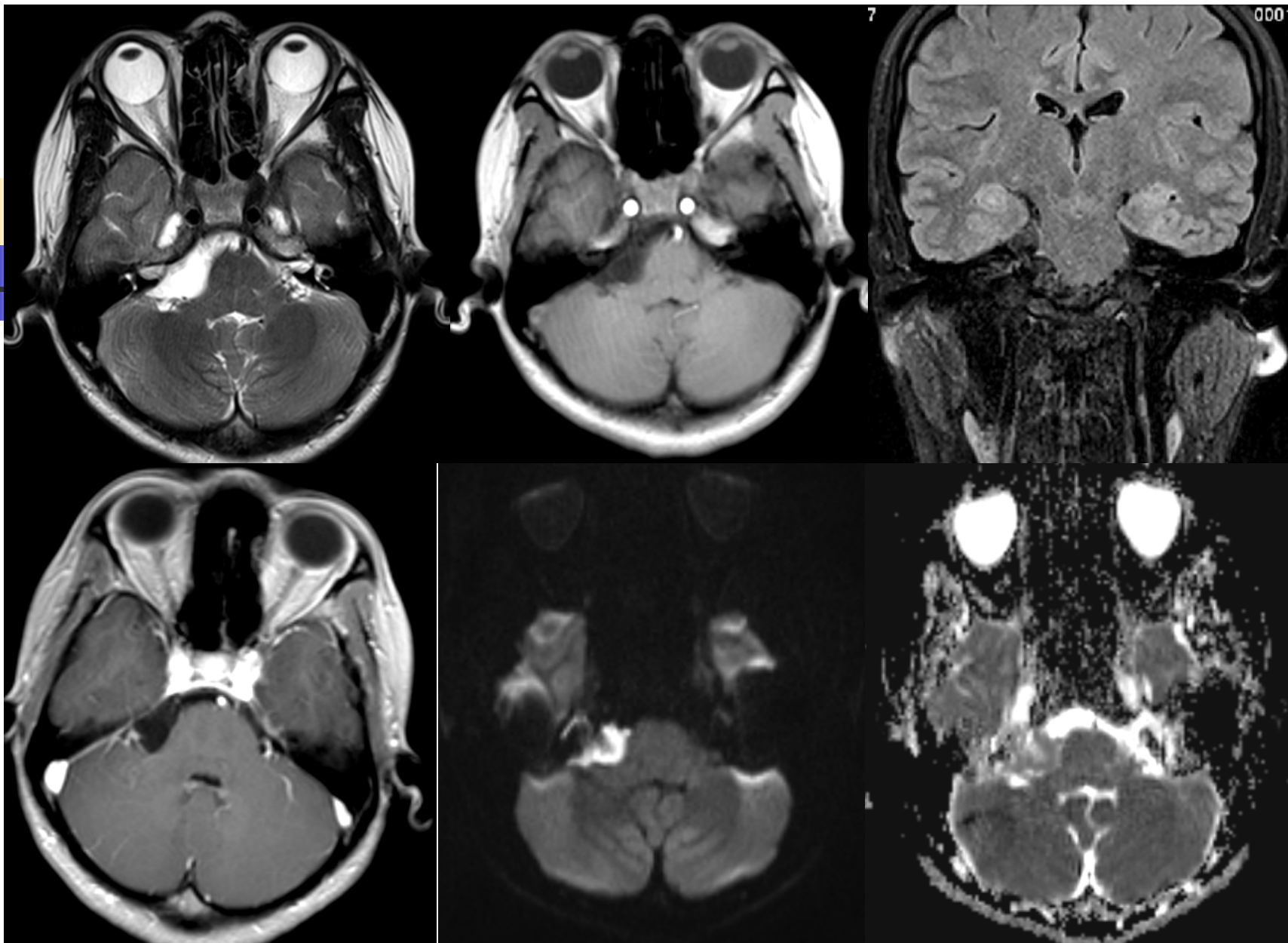


脑脓肿2月，（左额叶）符合脑脓肿改变。

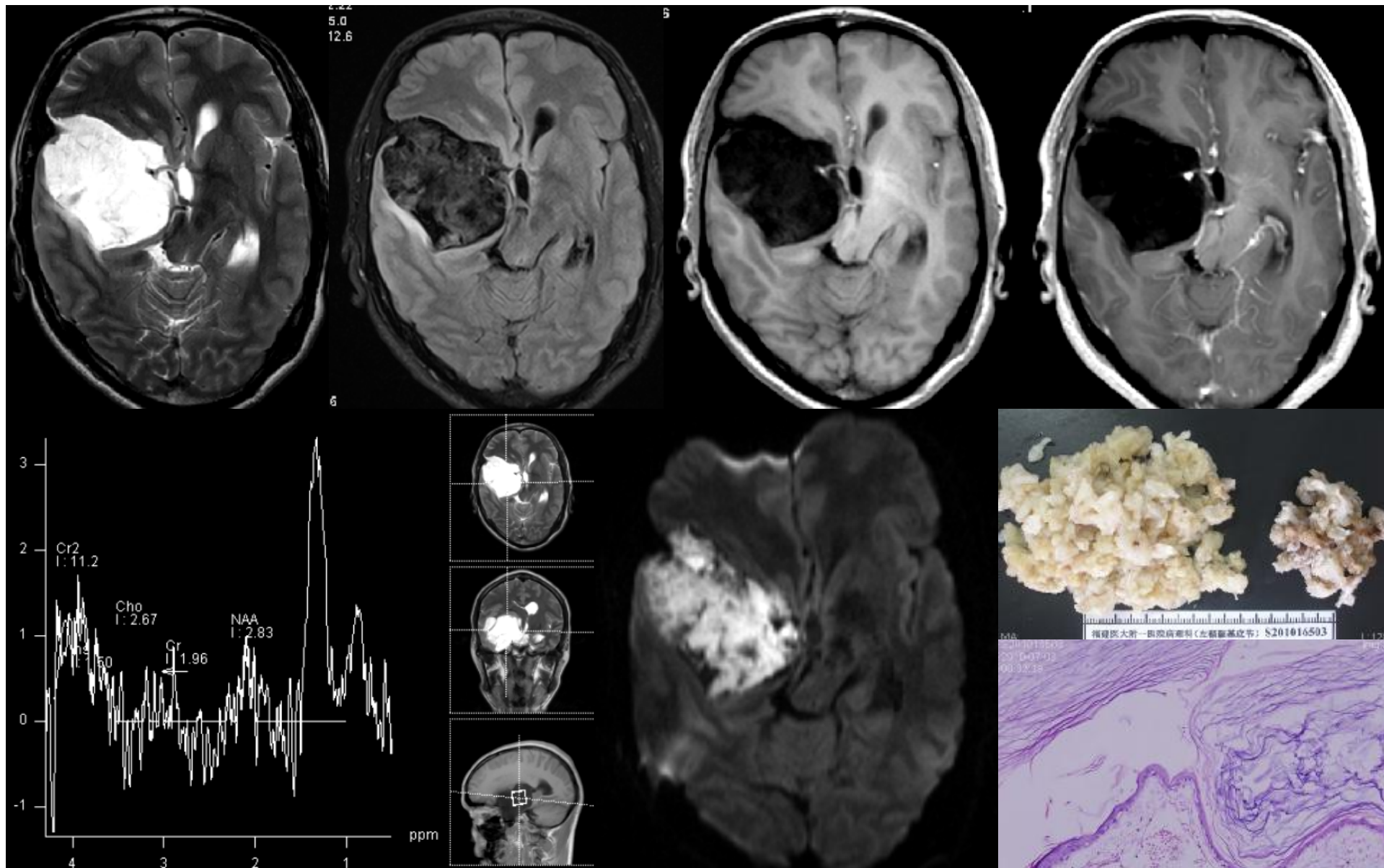
胶质母细胞瘤



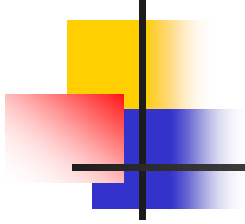
三、
表皮样囊肿



右侧桥小脑角池表皮样囊肿，**DWI呈高信号**

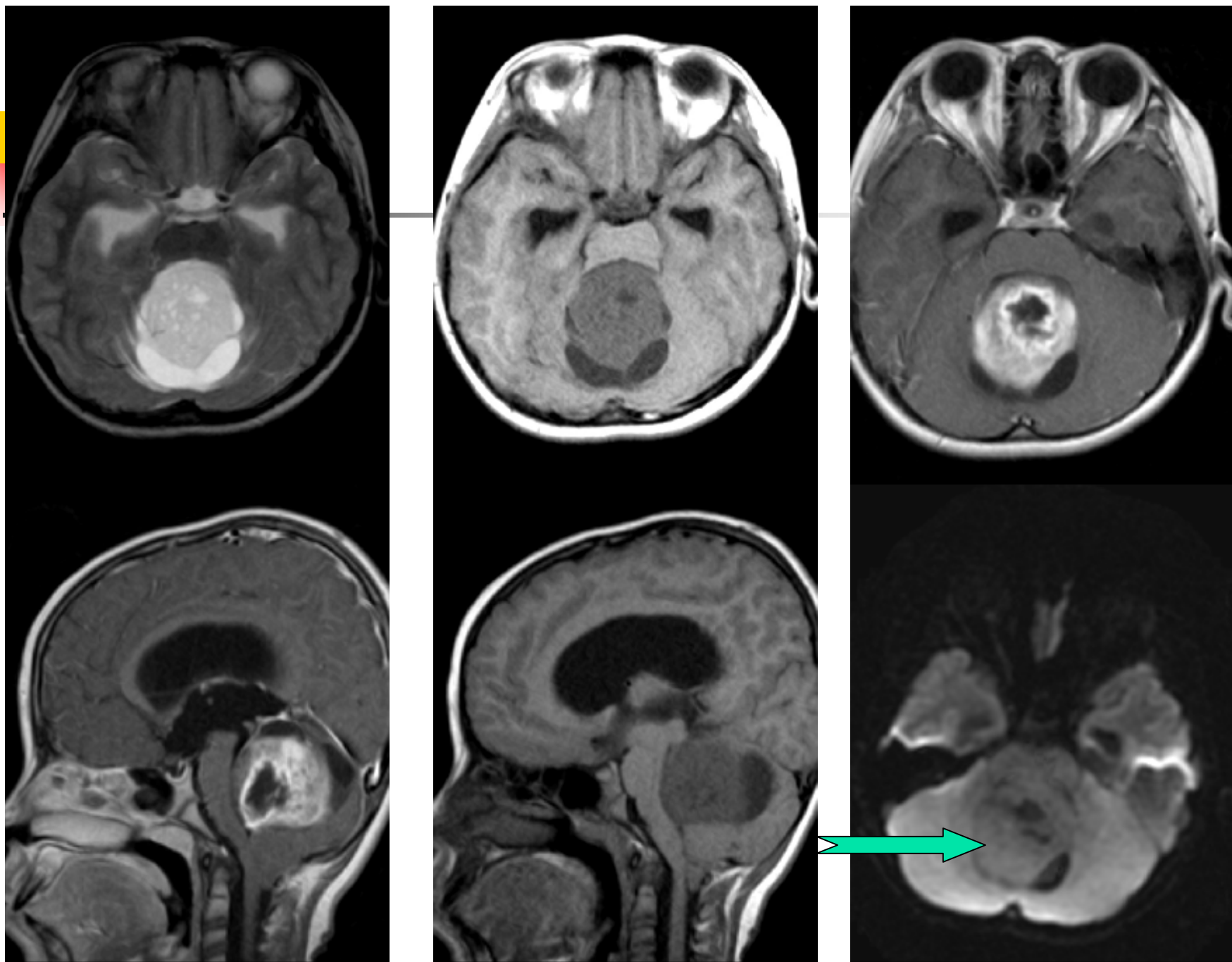


表皮样囊肿（右侧额颞叶及基底节区）符合表皮样囊肿。

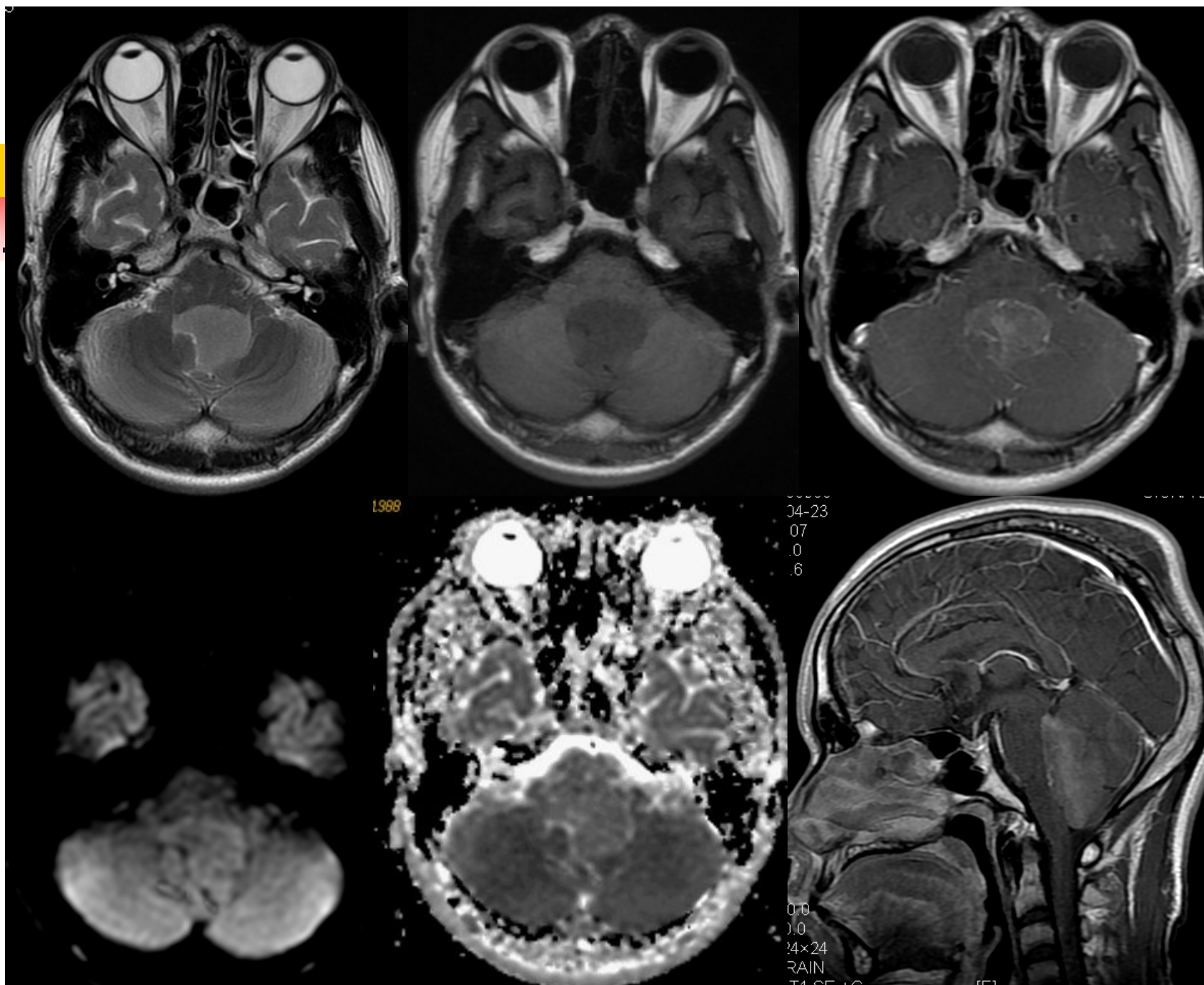


四、DWI在脑肿瘤中的应用

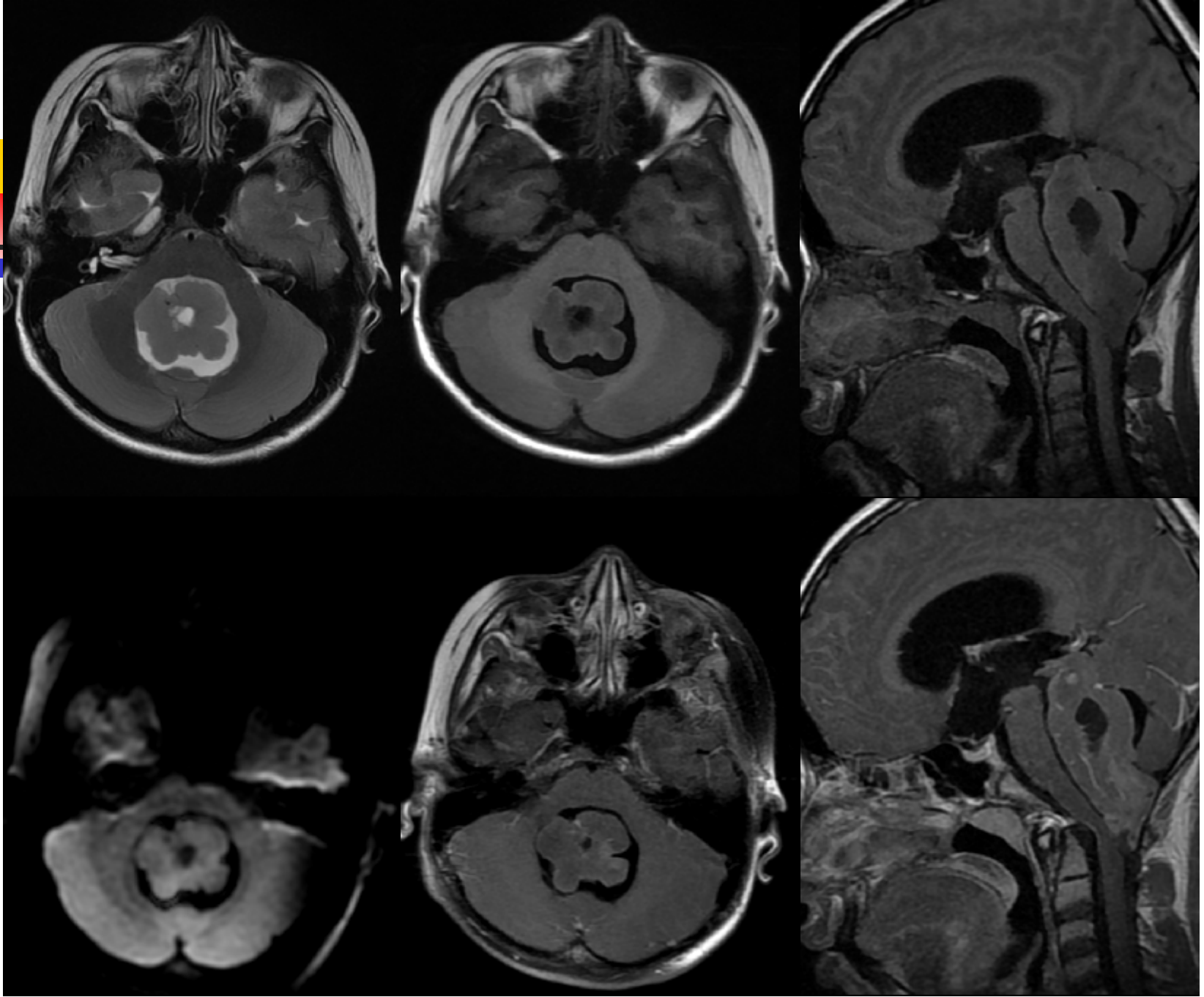
毛细细胞性星形细胞瘤



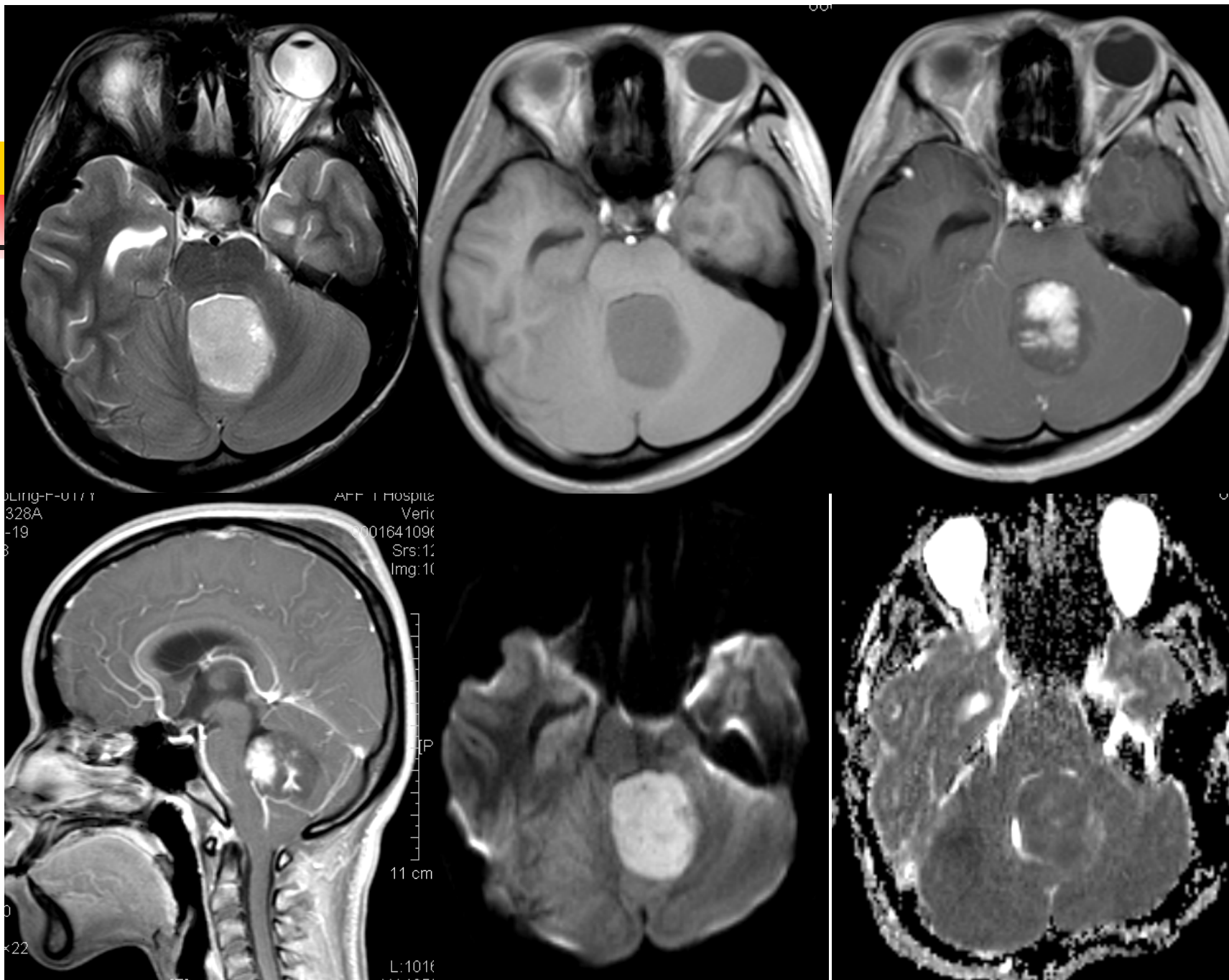
室管膜瘤

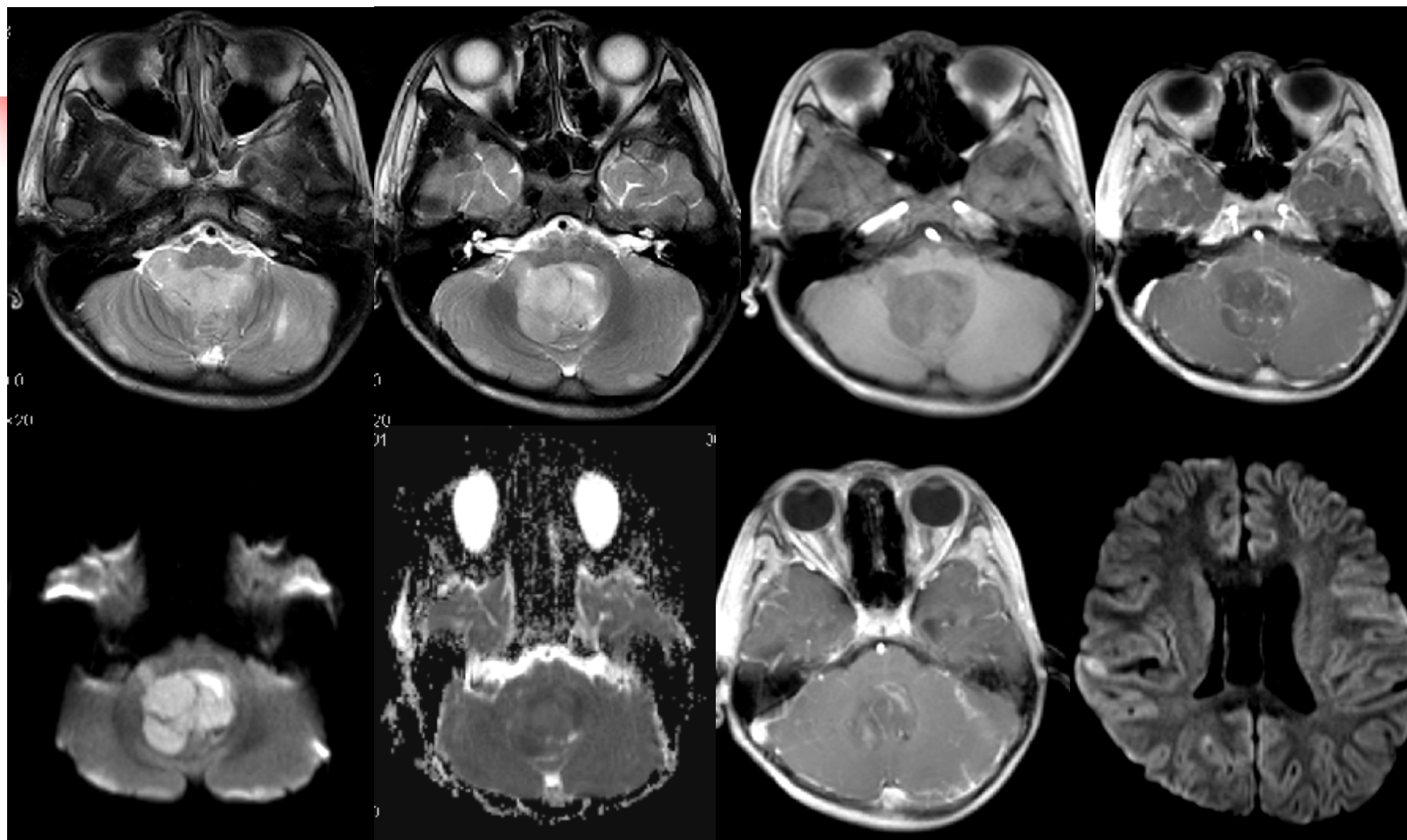


室管膜瘤

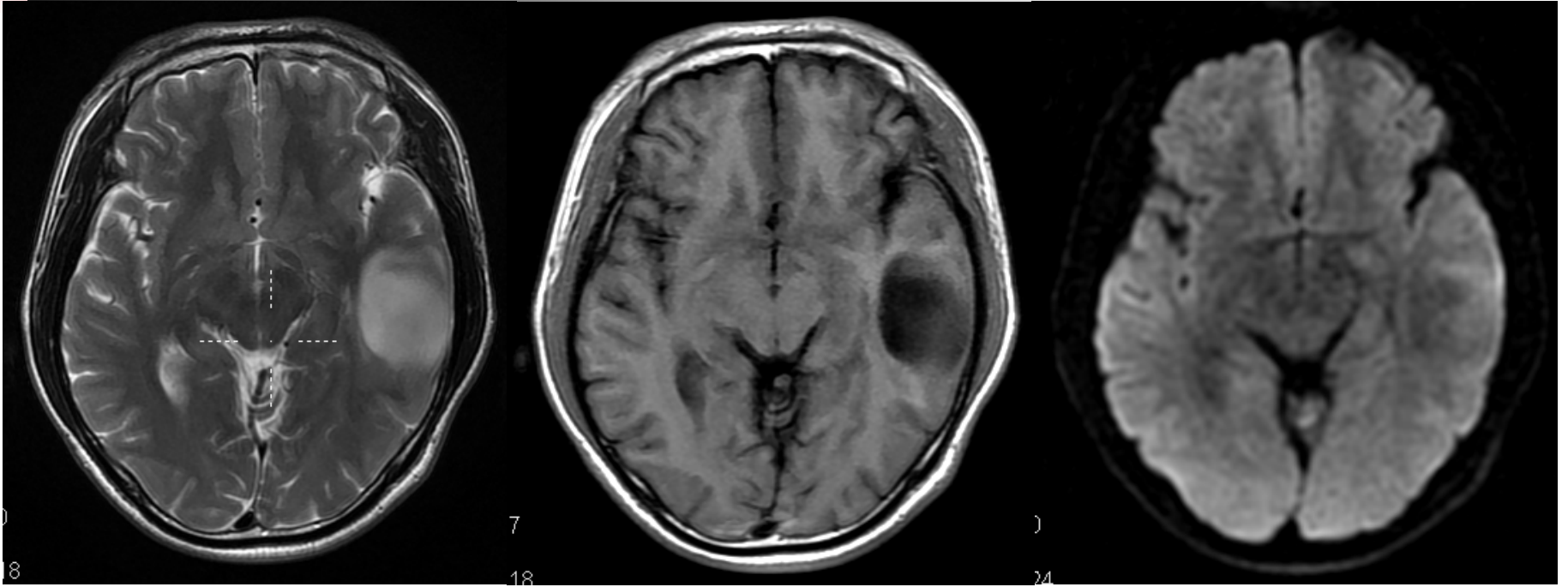


髓母细胞瘤

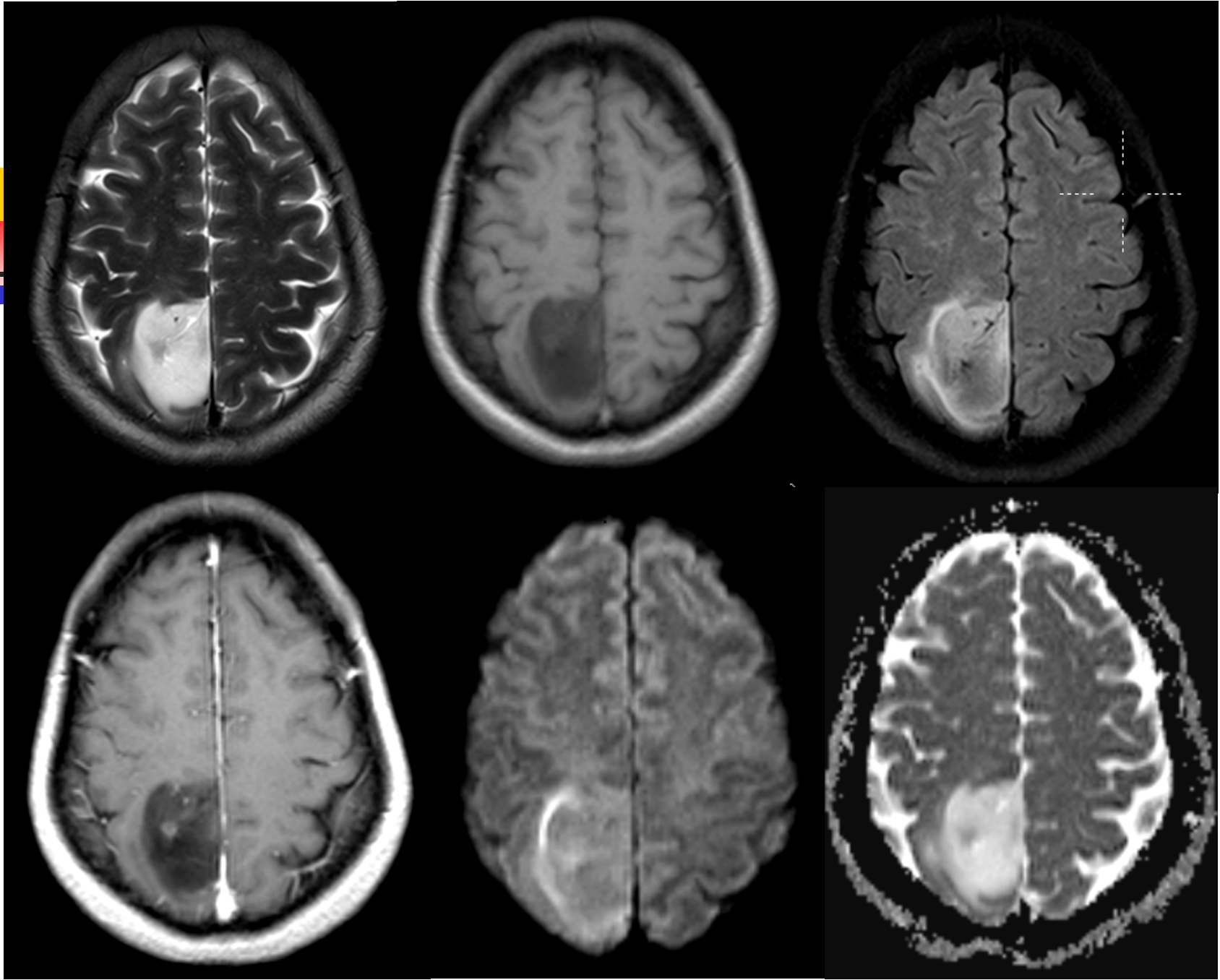




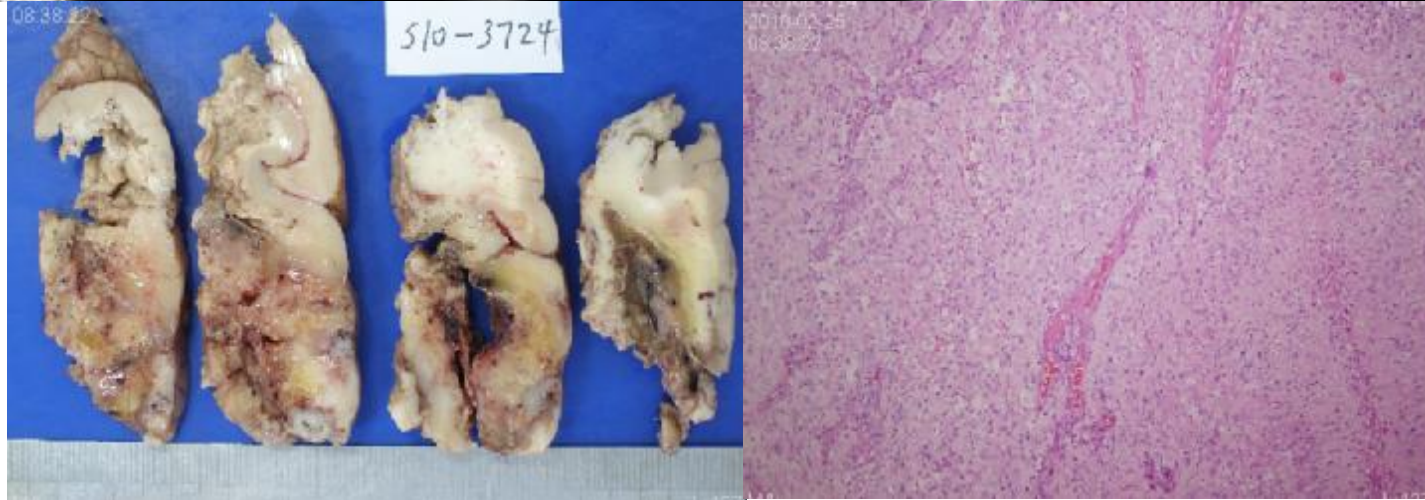
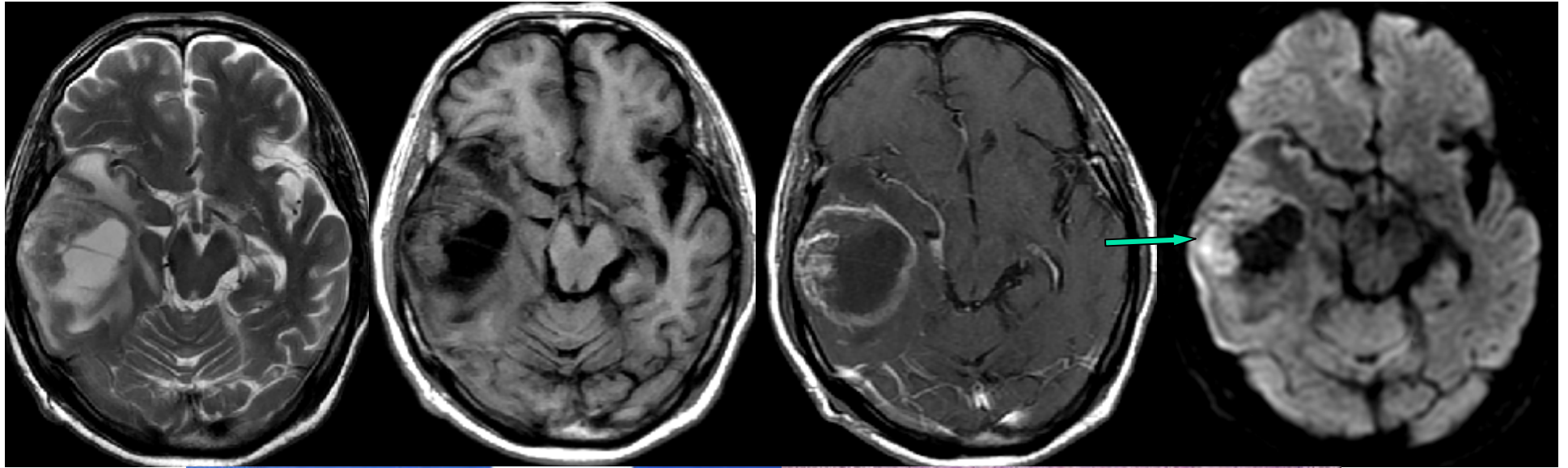
髓母细胞瘤



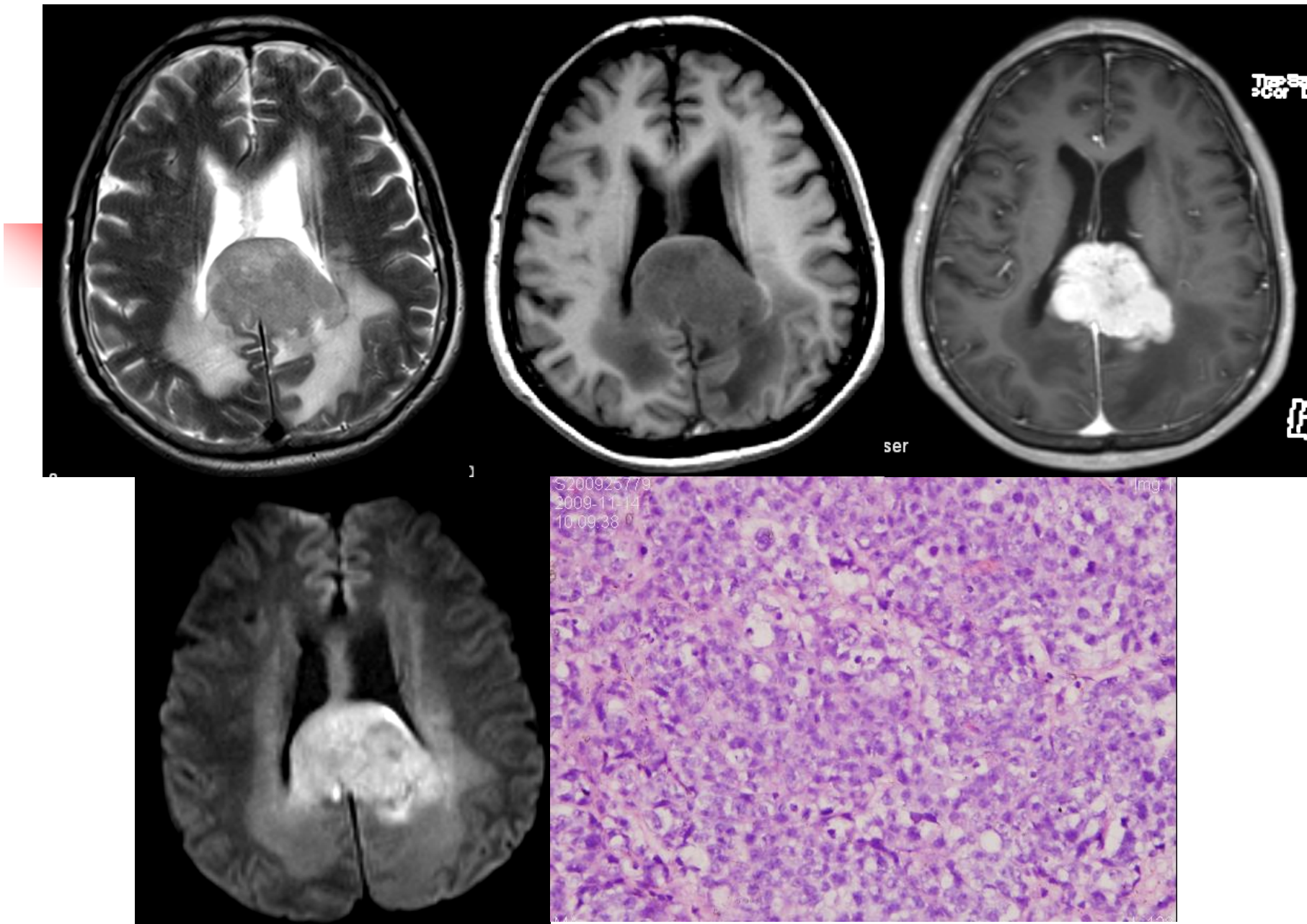
弥漫性星形细胞瘤WHOII级



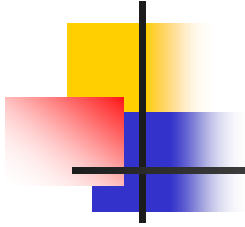
弥漫性星形细胞瘤WHOII级



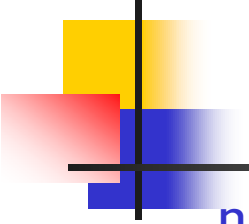
胶质母细胞瘤（右颞叶）胶质母细胞瘤伴大片坏死，局灶少突胶质细胞分化，累及软脑膜（WHOIV级）。



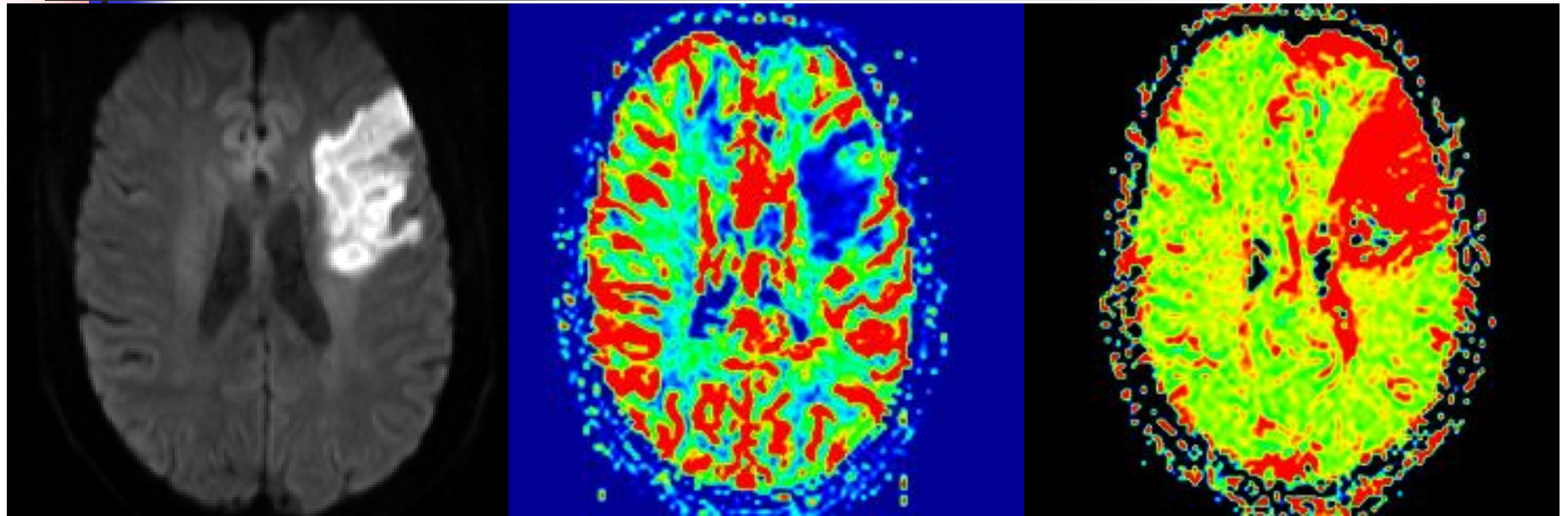
非霍奇金恶性B细胞淋巴瘤。



- n DWI可用于鉴别诊断髓母细胞瘤。
- n DWI可用于鉴别诊断高低级别星形细胞瘤。
- n DWI示PCNSL呈高信号。

- 
- n PWI (perfusion weighted imaging) : PWI的血流动力学参数反映肿瘤的**微血管密度**。
 - n 血流动力学参数包括脑血容量、脑血流量、平均通过时间、信号强度-时间曲线。

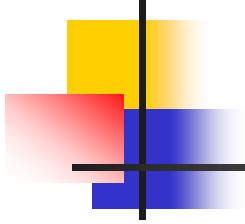
一、脑梗死



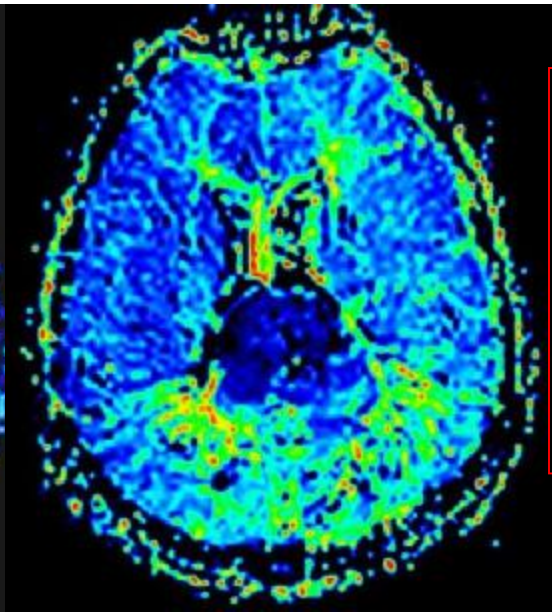
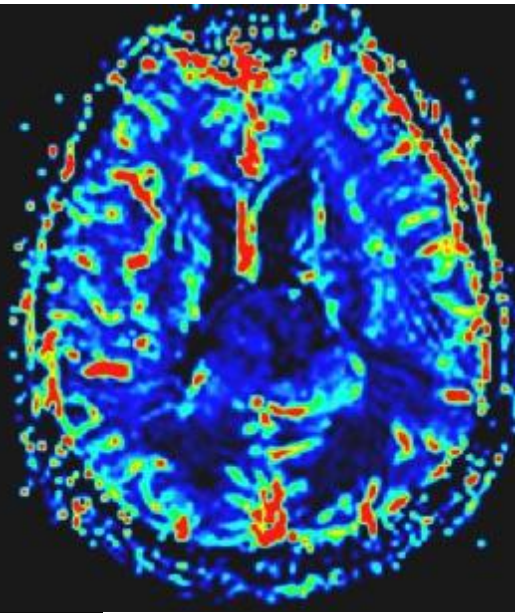
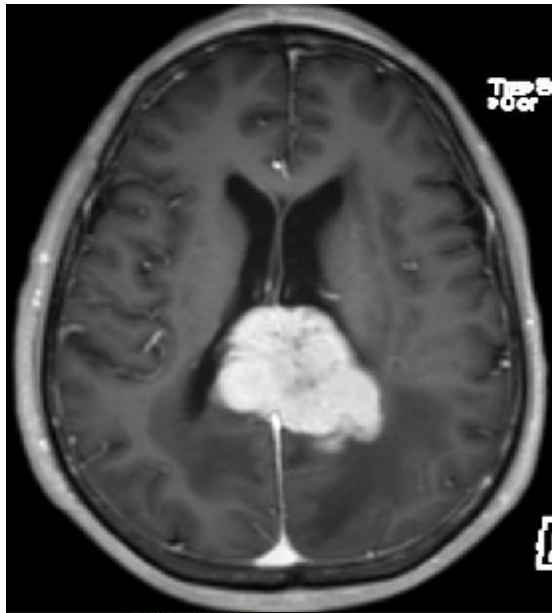
DWI

CBV

MTT



二、PWI在脑肿瘤中的应用

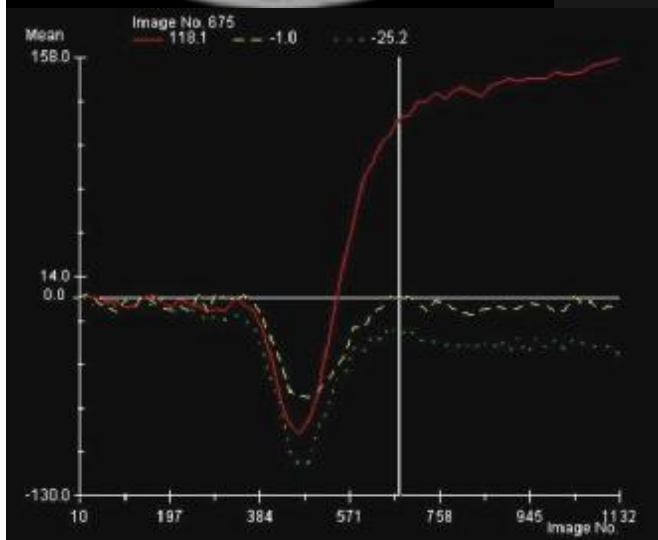


病理证实
为非霍奇
金淋巴瘤
(弥漫
性, 大B淋
巴细胞性)

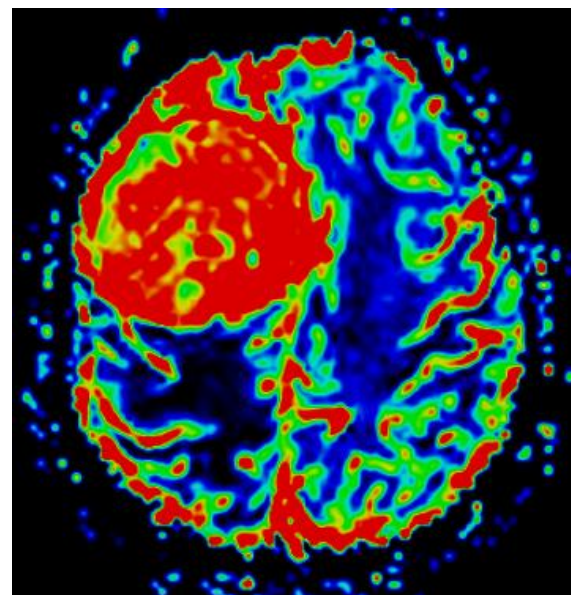
CBV图

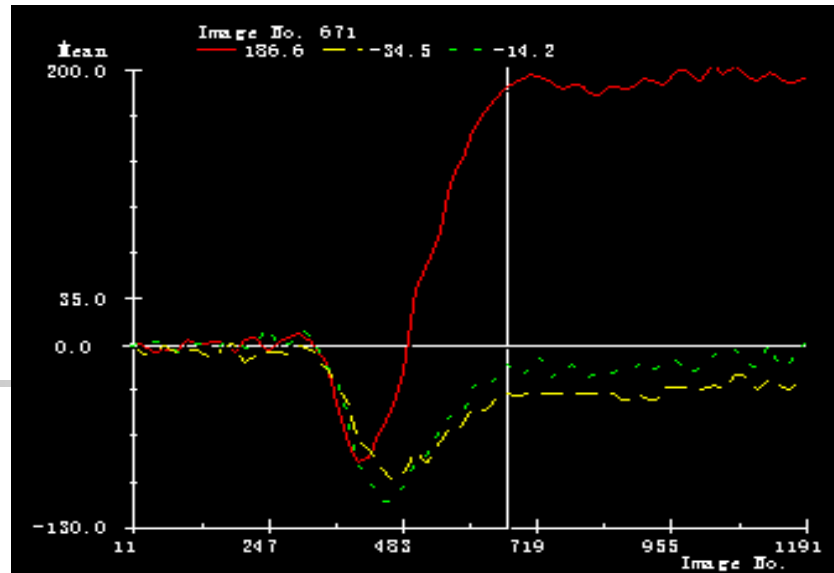
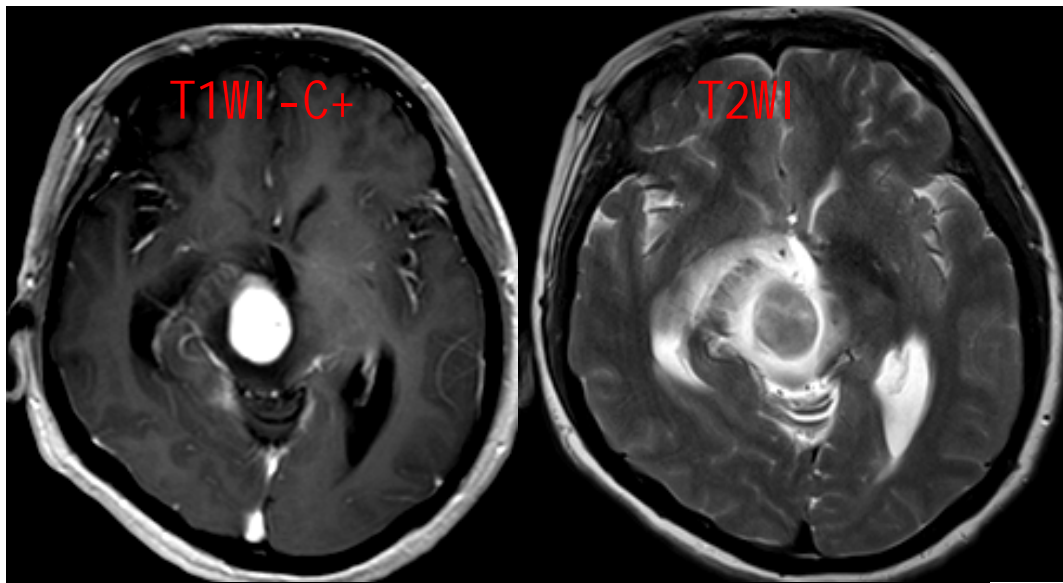
MTT图

脑膜瘤呈高灌注

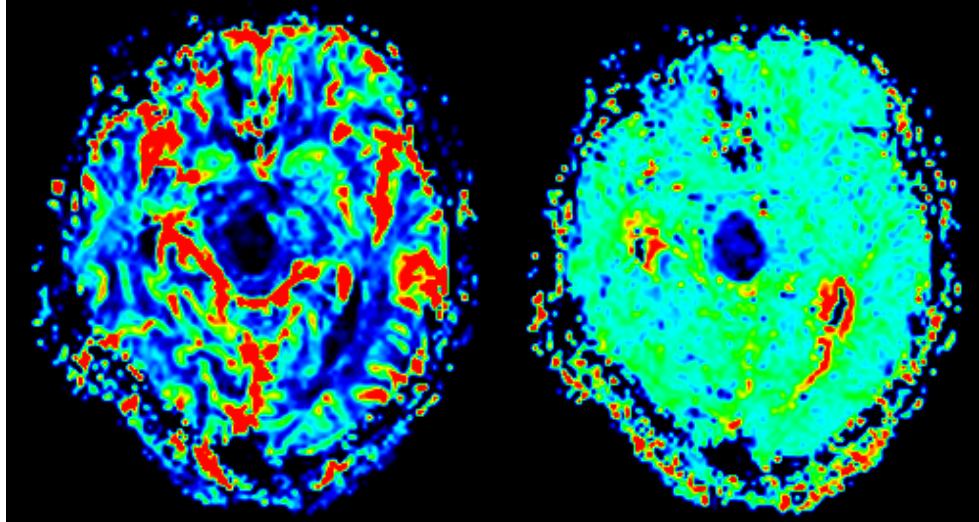


CBV图





信号强度-时间曲线图

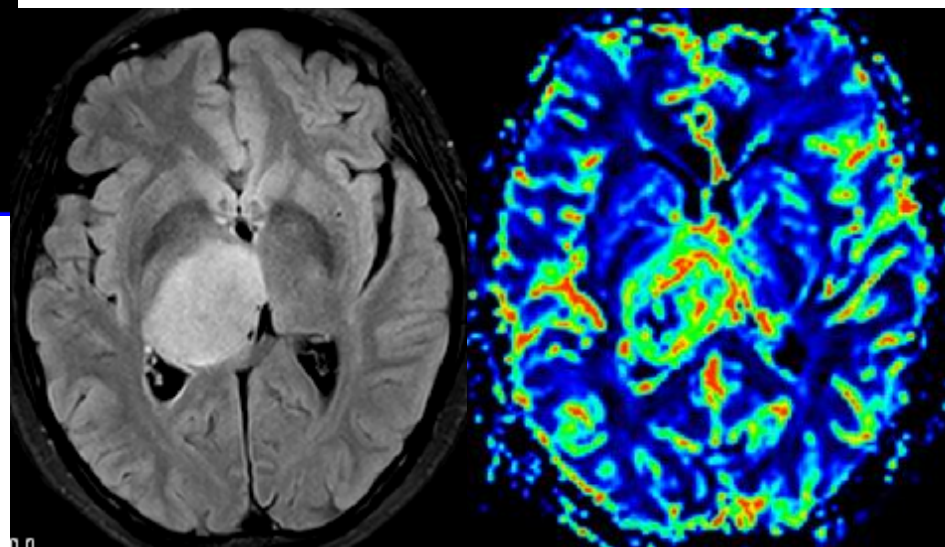


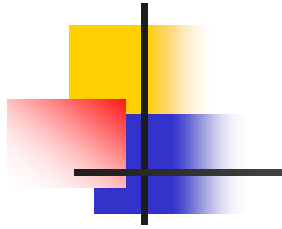
CBV图-低灌注

MTT图

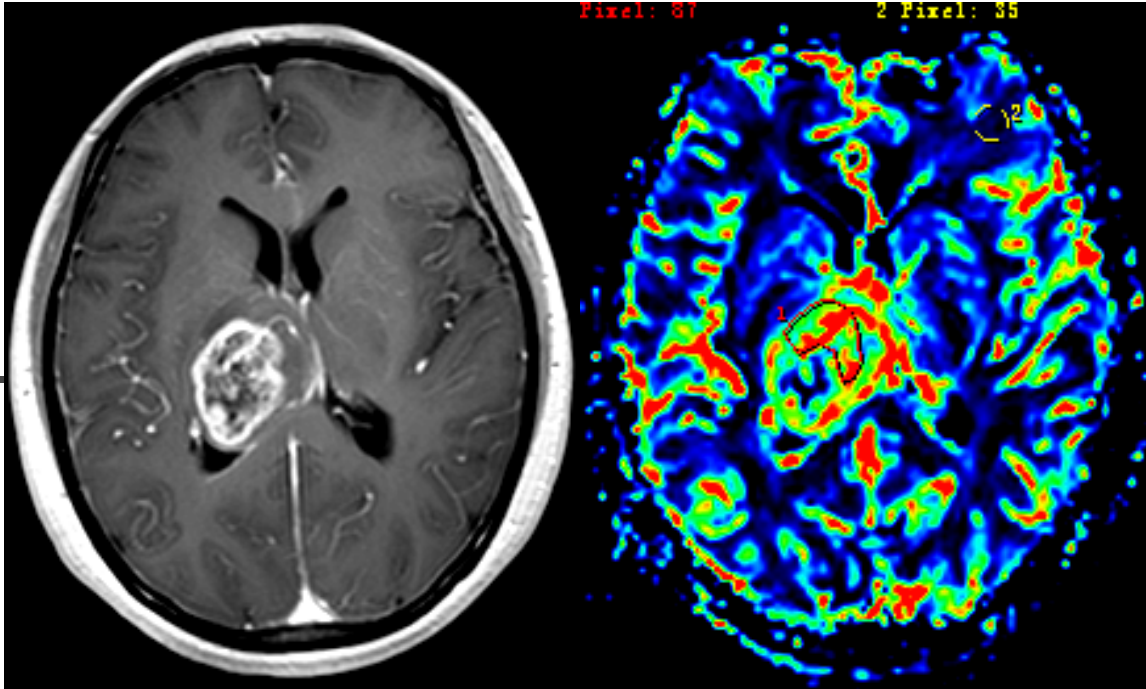
T2FLAIR

CBV图-高灌注

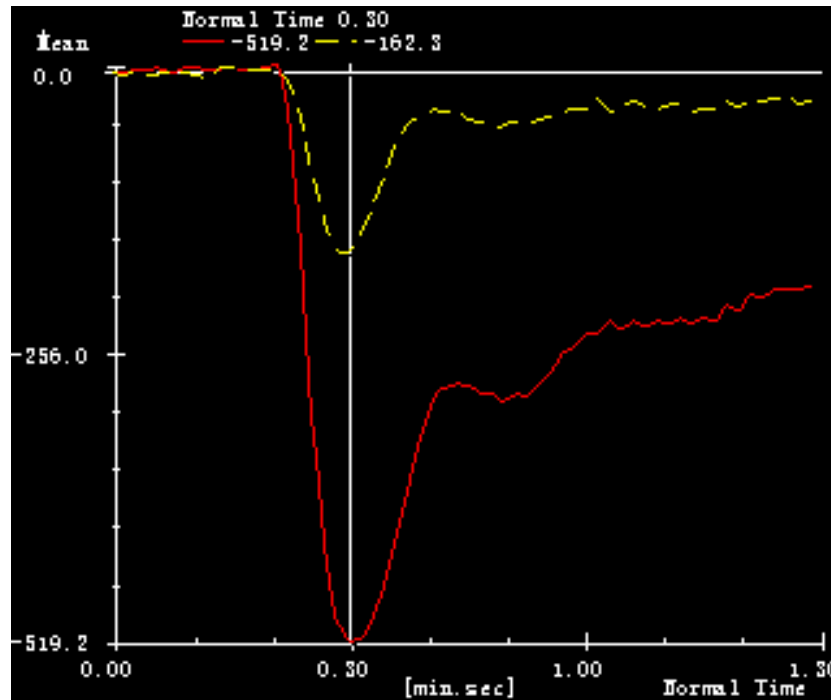
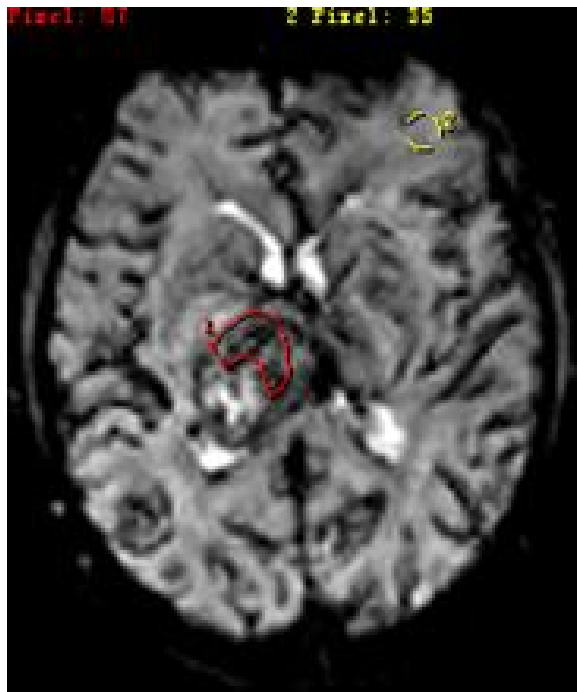




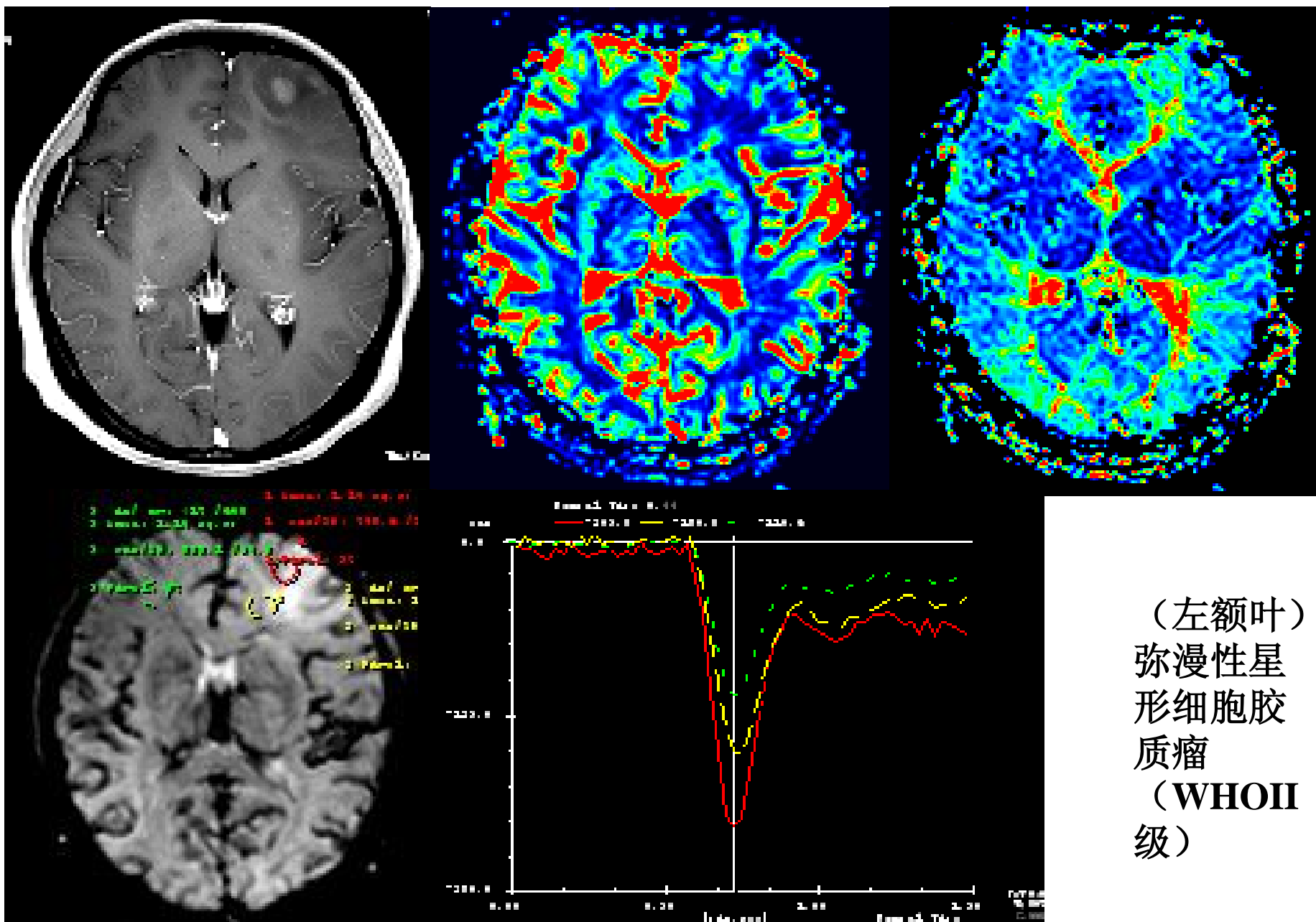
T1WI



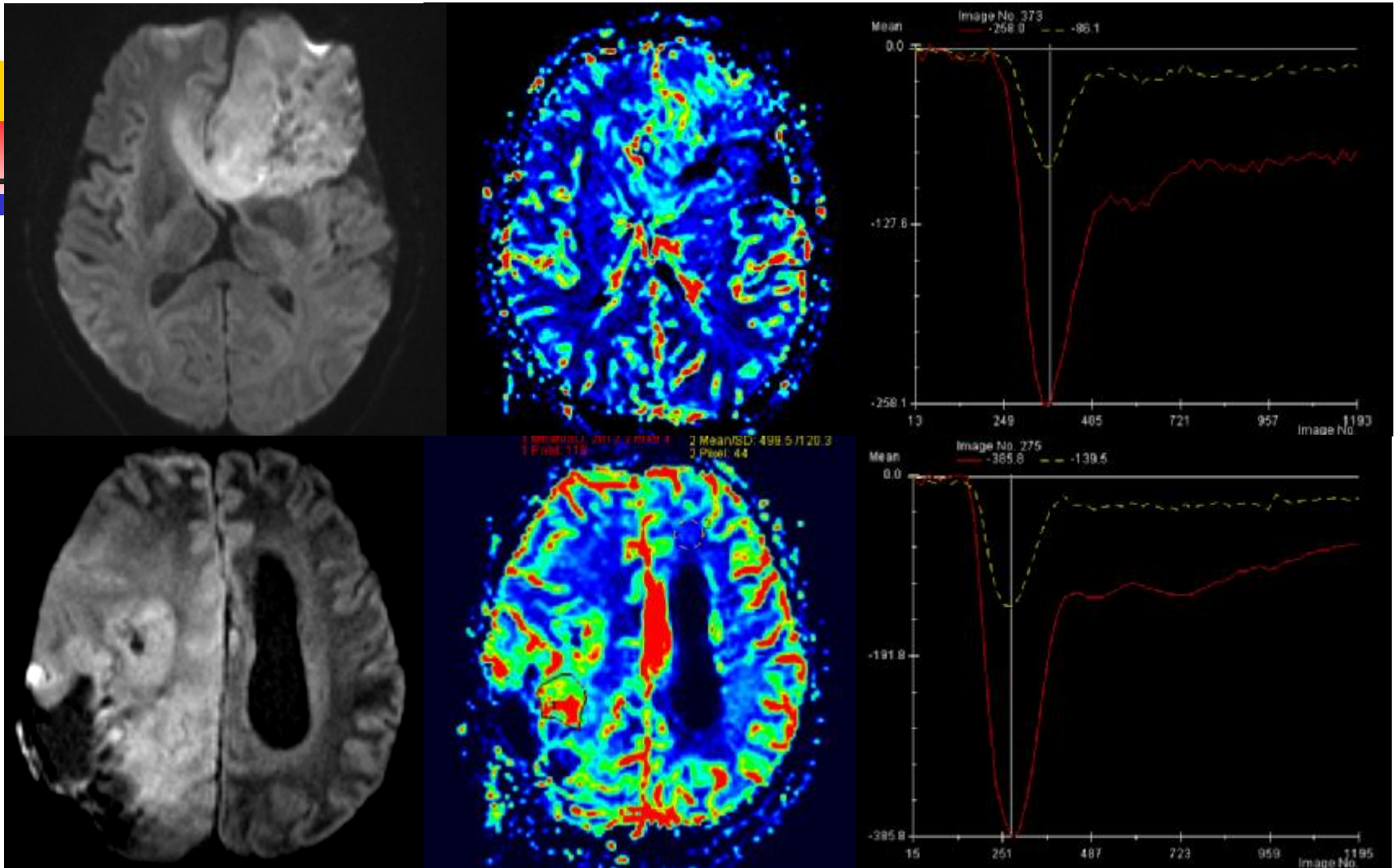
CBV图



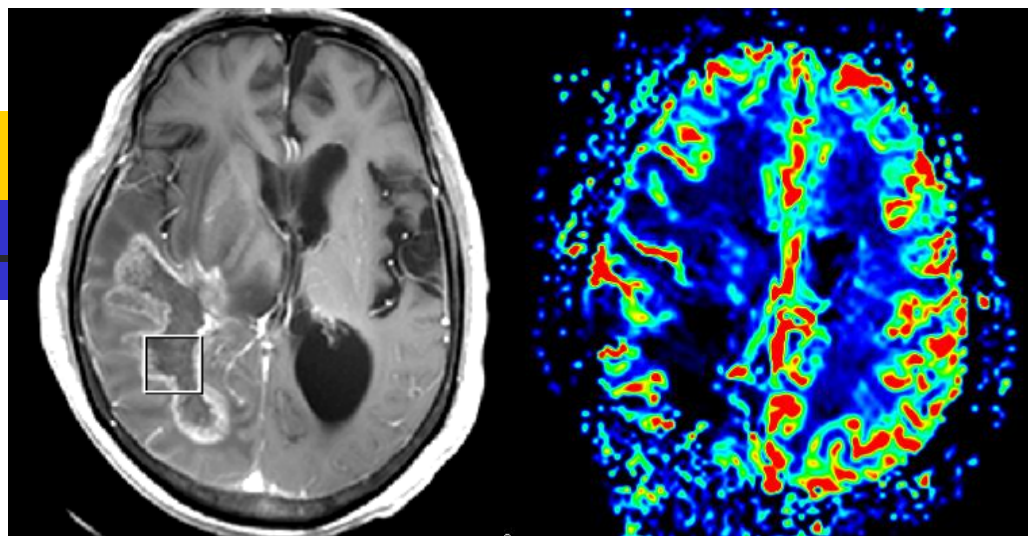
信号强度-时间
曲线图



(左额叶)
弥漫性星
形细胞胶
质瘤
(WHOII
级)

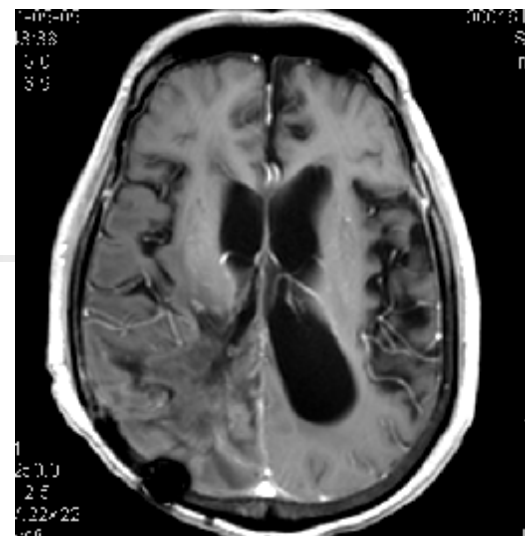


胶质瘤术后复发

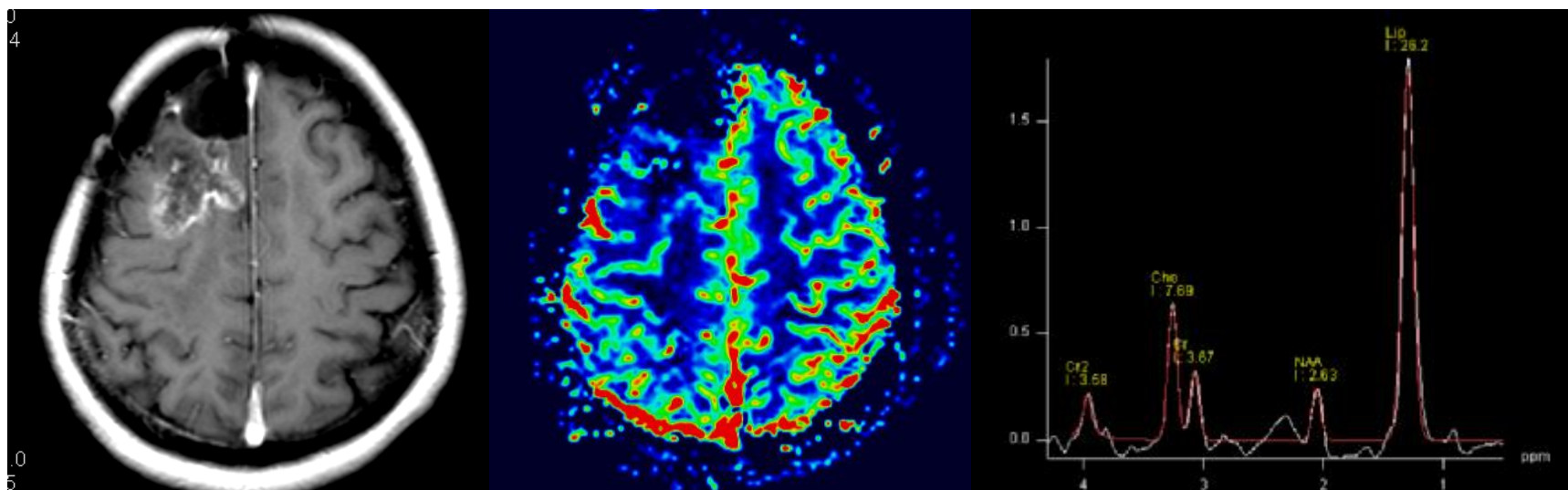


T1WI+C

CBV图



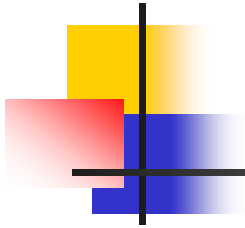
5个月后复查MR



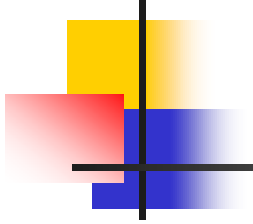
T1WI+C

CBV图

MRS



- n PWI能准确鉴别诊断PCNSL。
- n PWI可用于高低级别星形细胞瘤的鉴别诊断。
- n PWI可用于胶质瘤术后复发与放射性坏死诊断。



谢谢！