Santral Sinir Sistemi İnfeksiyonlarında Radyoloji

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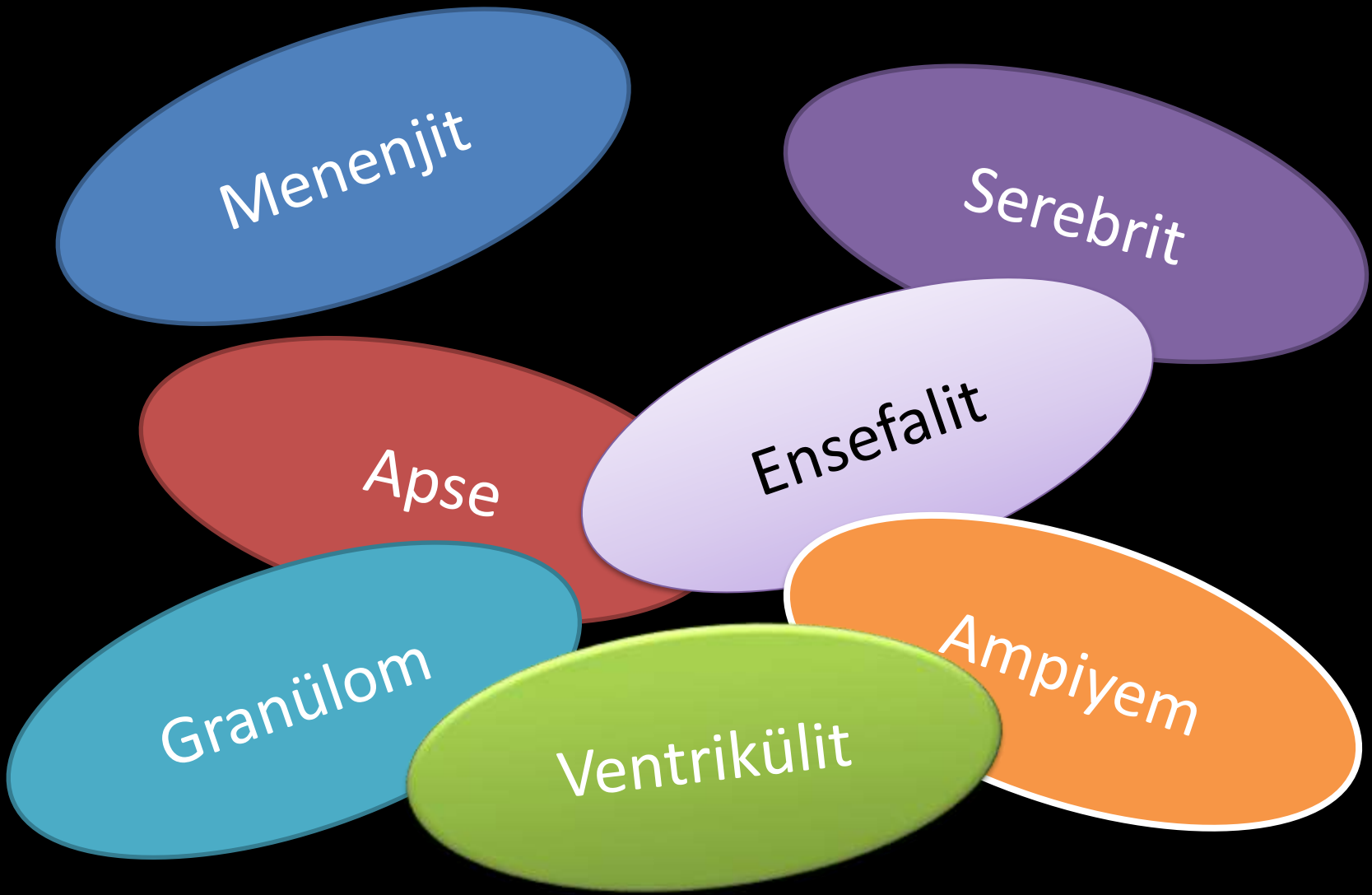
Akdeniz Üniversitesi
Radyoloji A.B.D.

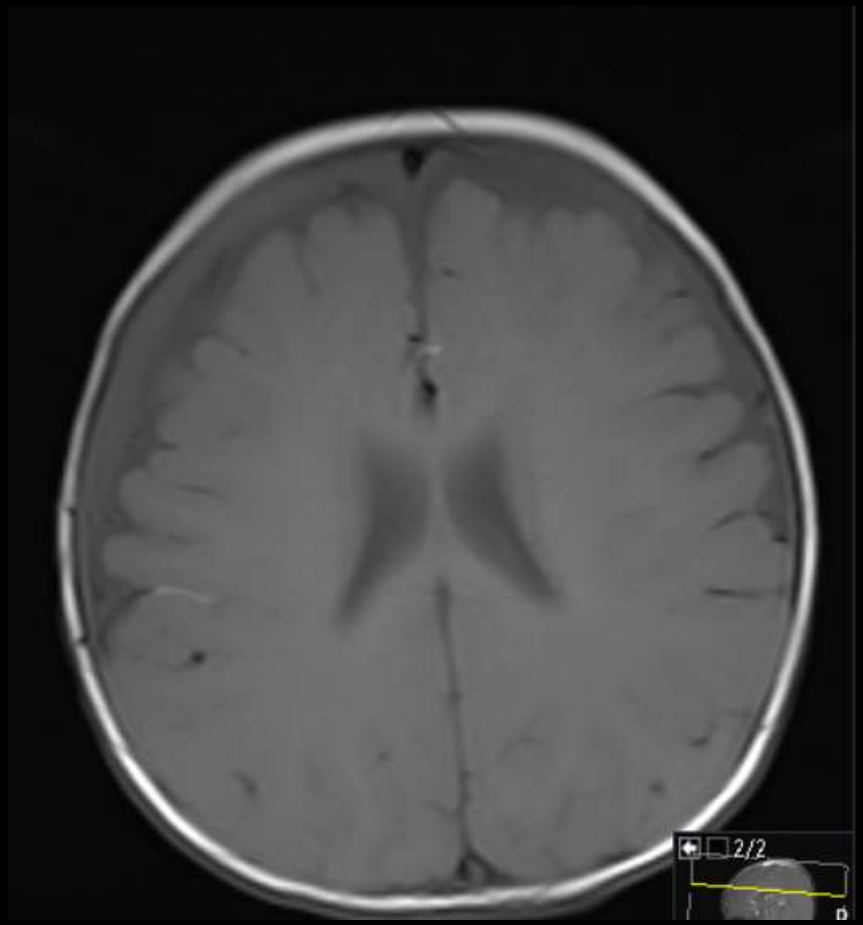
Santral Sinir Sistemi İnfeksiyonları



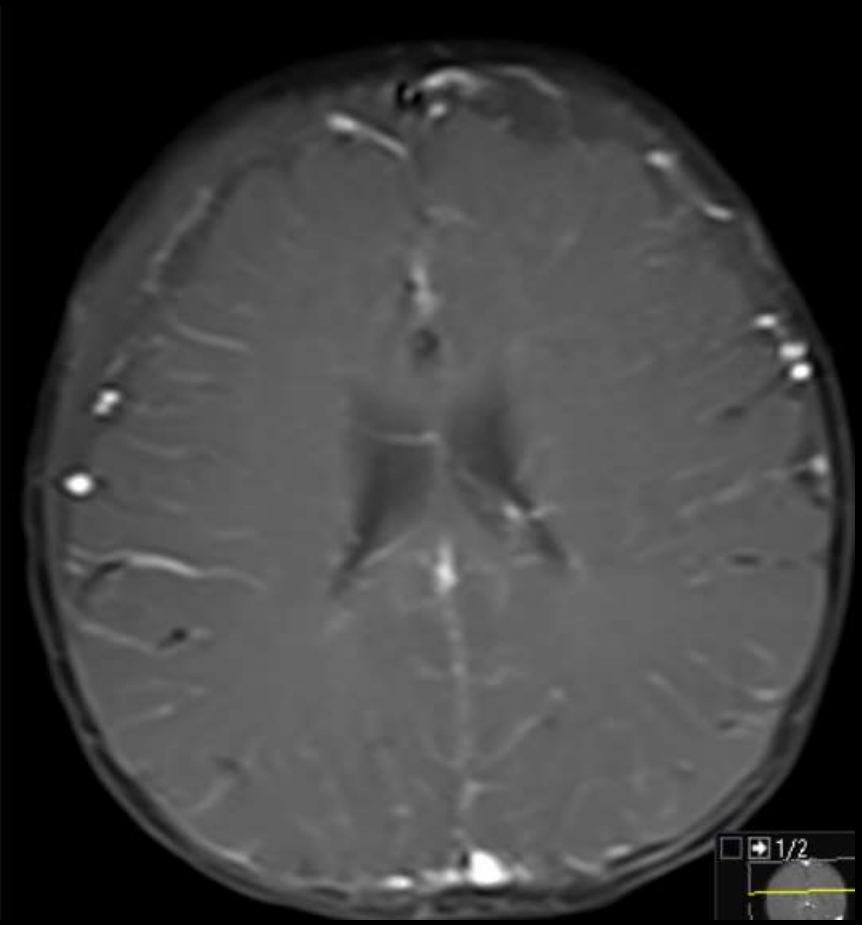
Akut bakteriyel menenjitler

- MRG normal olabilir (olguların yarısı !!)
- Amaç tanıdan çok komplikasyon görüntülemedir
- Leptomeningeal enhansman
- FLAIR'de bu alanlar parlak çıkabilir
- Sulkal / sisternal silinme

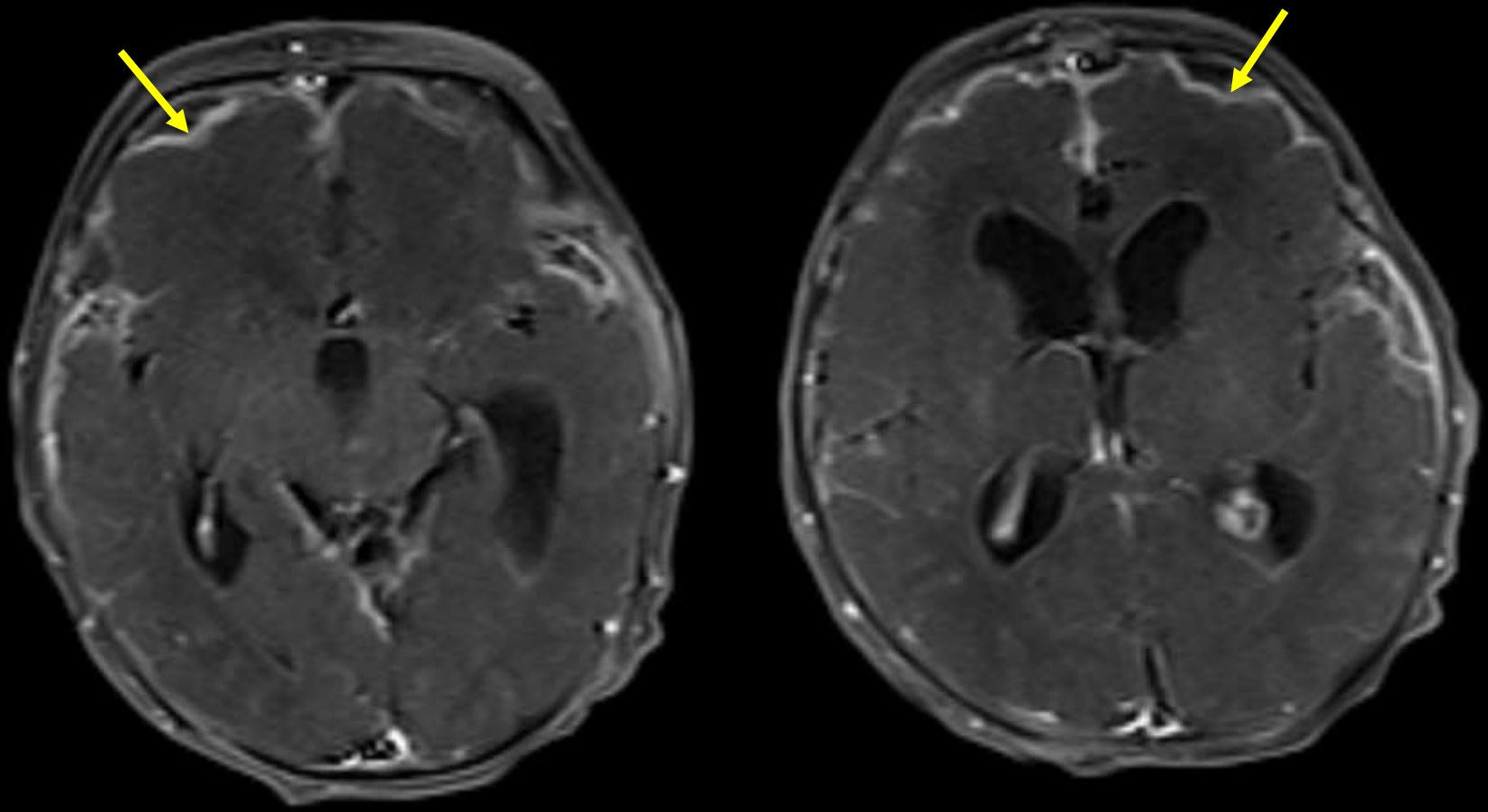
Kontrast öncesi T1



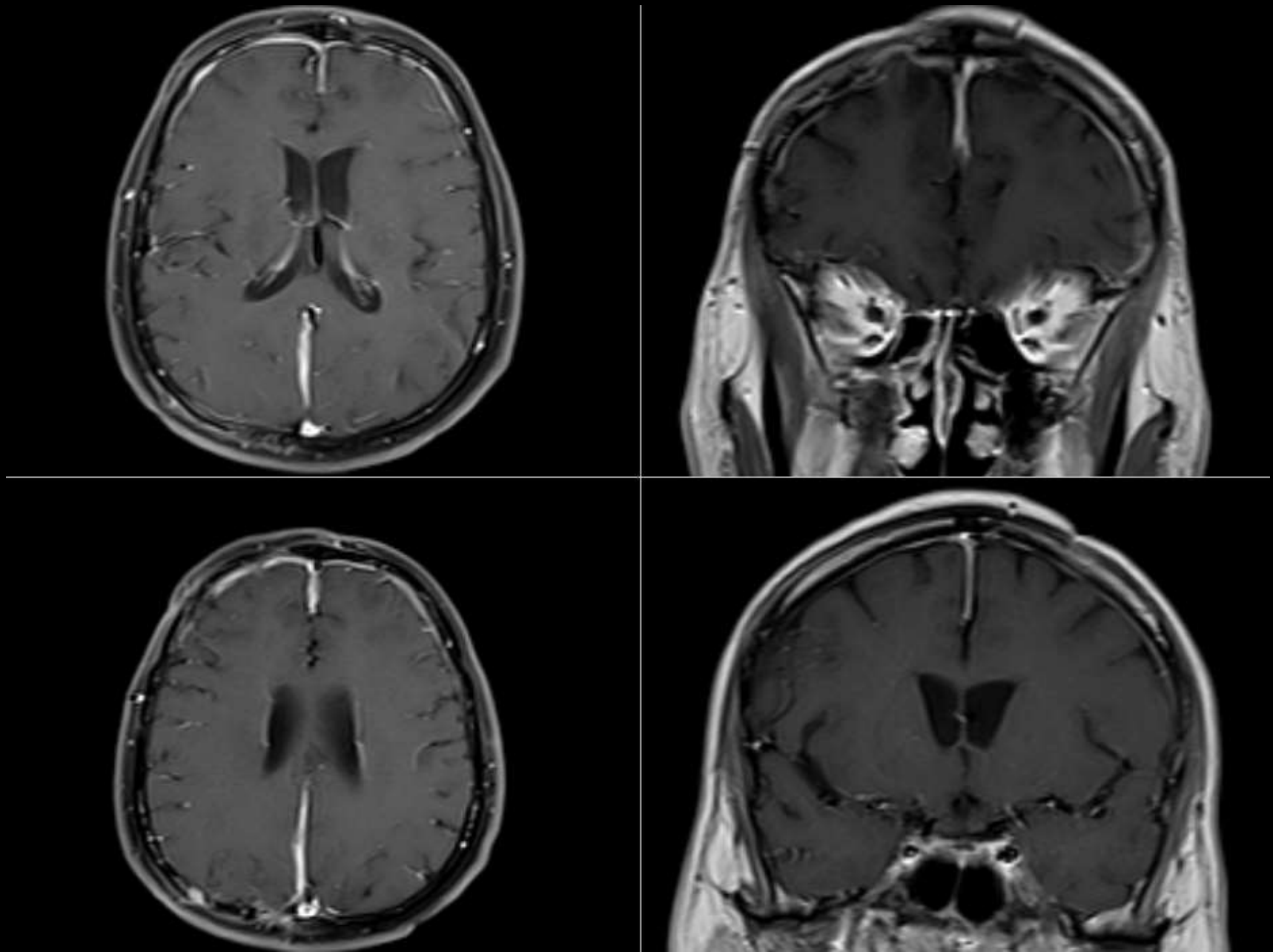
Kontrast sonrası T1

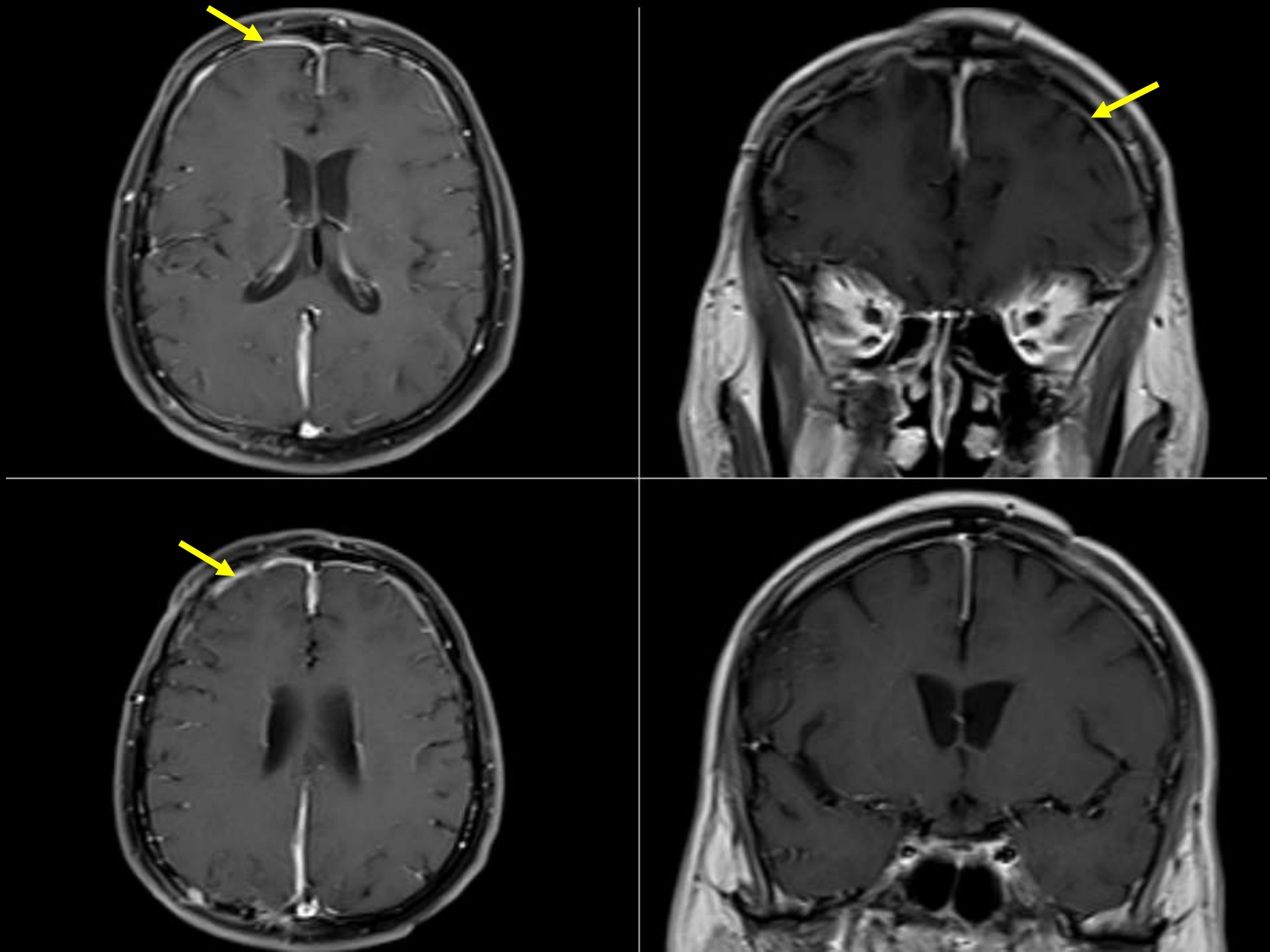


Leptomeningeal enhansman



Dural enhansman





Akut bakteriyel menenjtiler

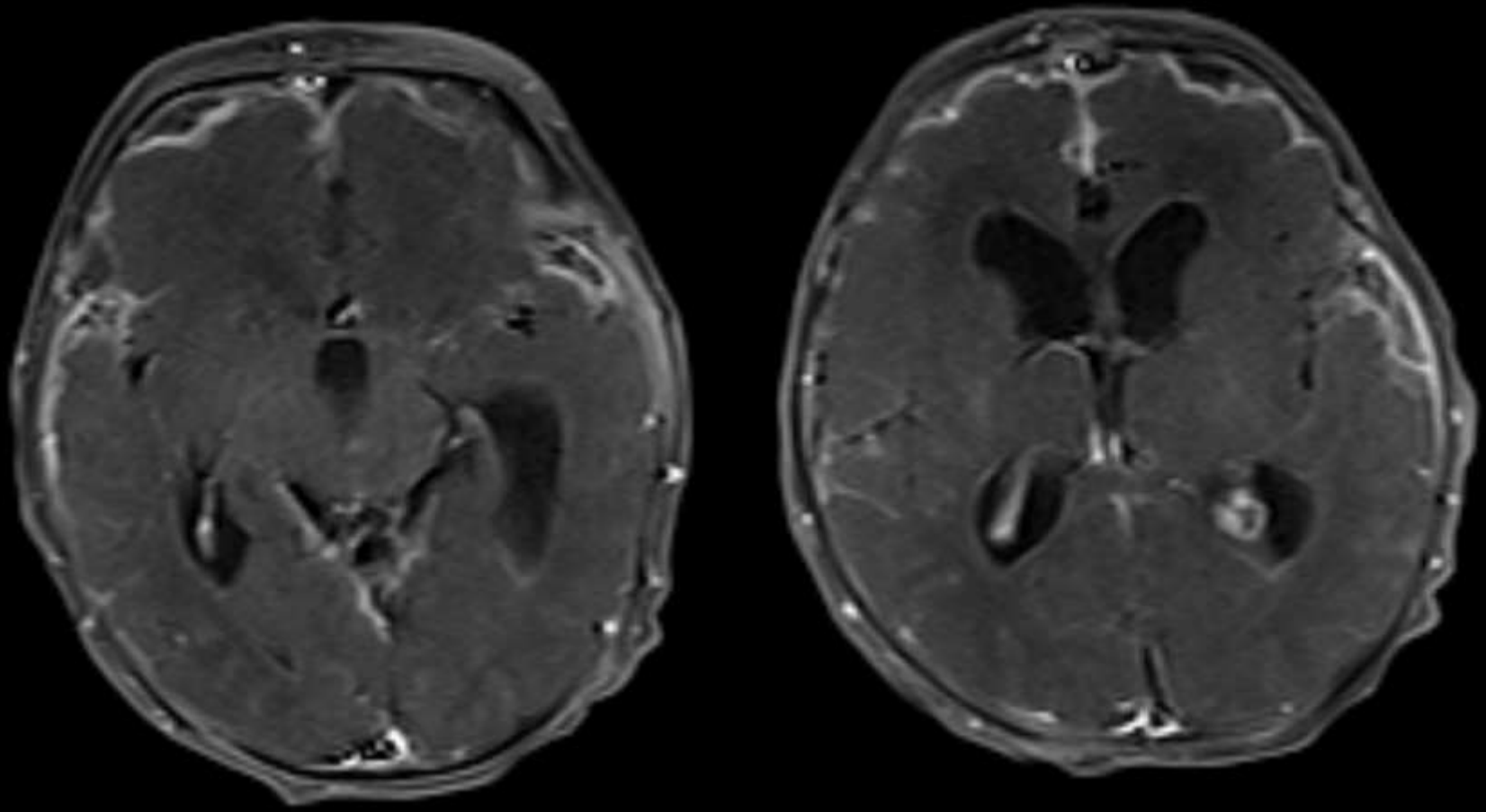
- Difüzyon MRG'lere özellikle dikkat

- Parankimal komplikasyonlar (meningovaskülit)
- Oklüzyon
- İskemi
- Parankim tutulumu erken bulgusu

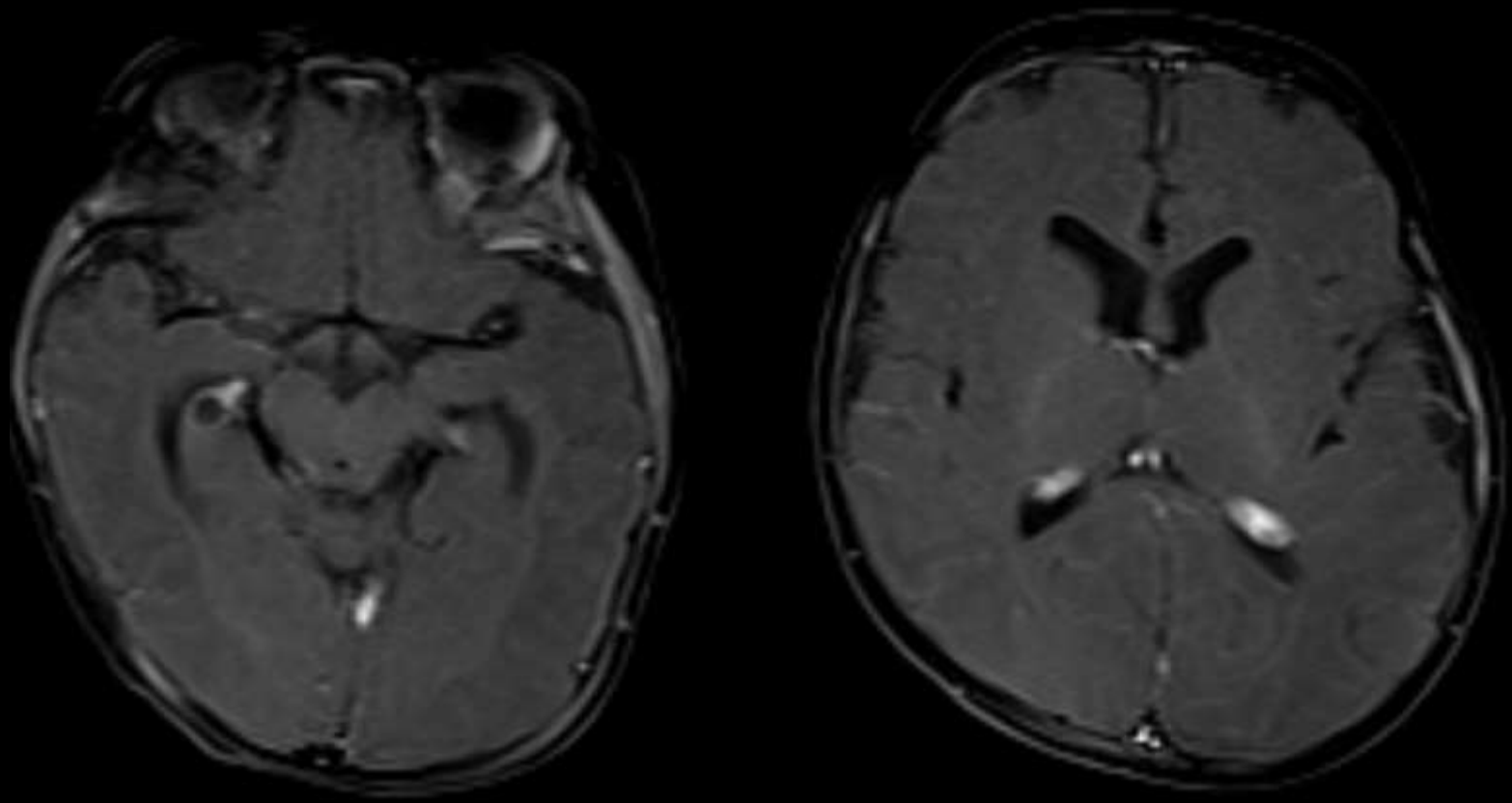
Akut bakteriyel menenjitler

- Komplikasyonlar ??
  - Hidrosefali
  - Ampiyem
  - Serebrit / Apse formasyonu
  - Vasküler tutulum→ İskemi & enfarkt
  - Sekel değişiklikler

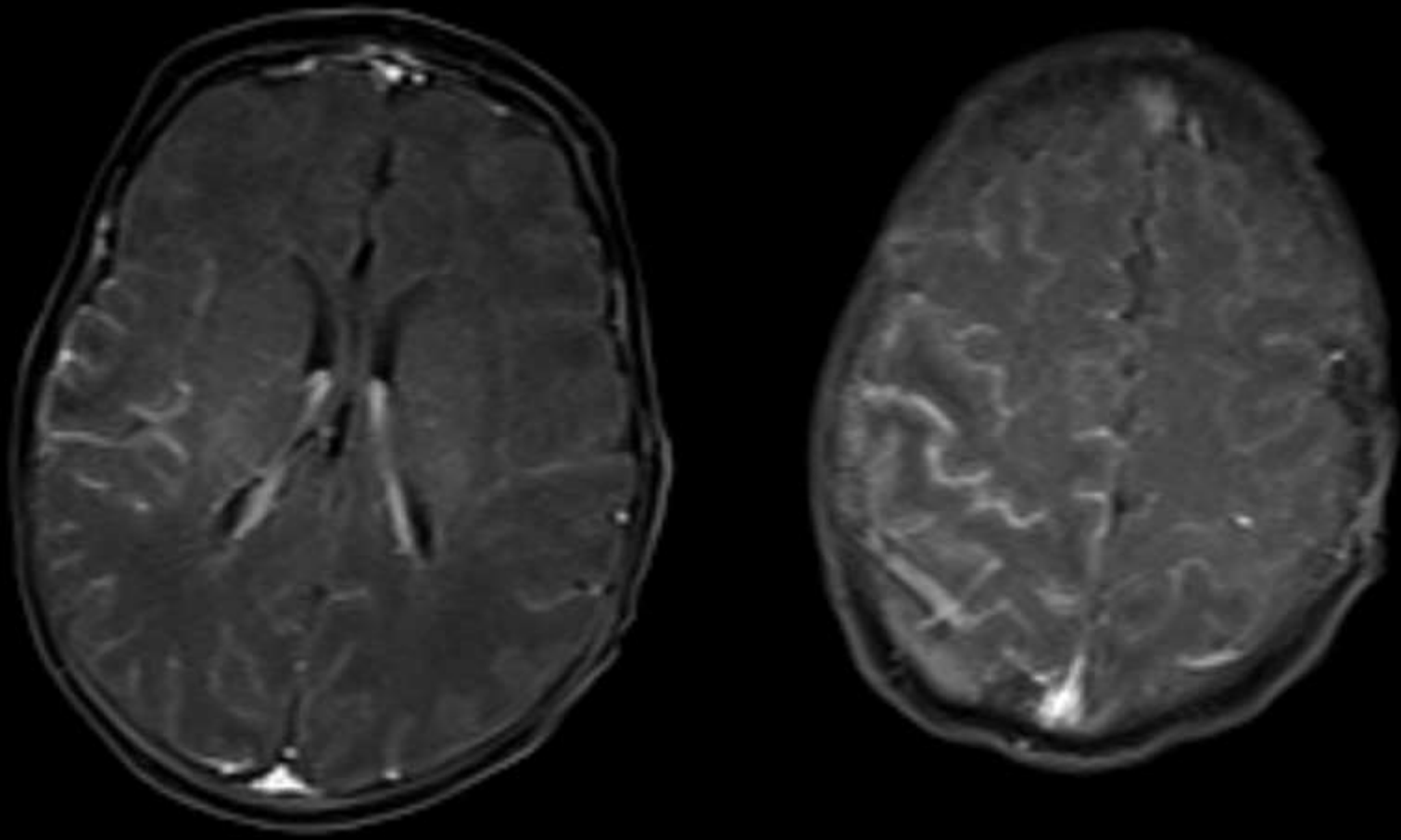
21 günlük, Erkek



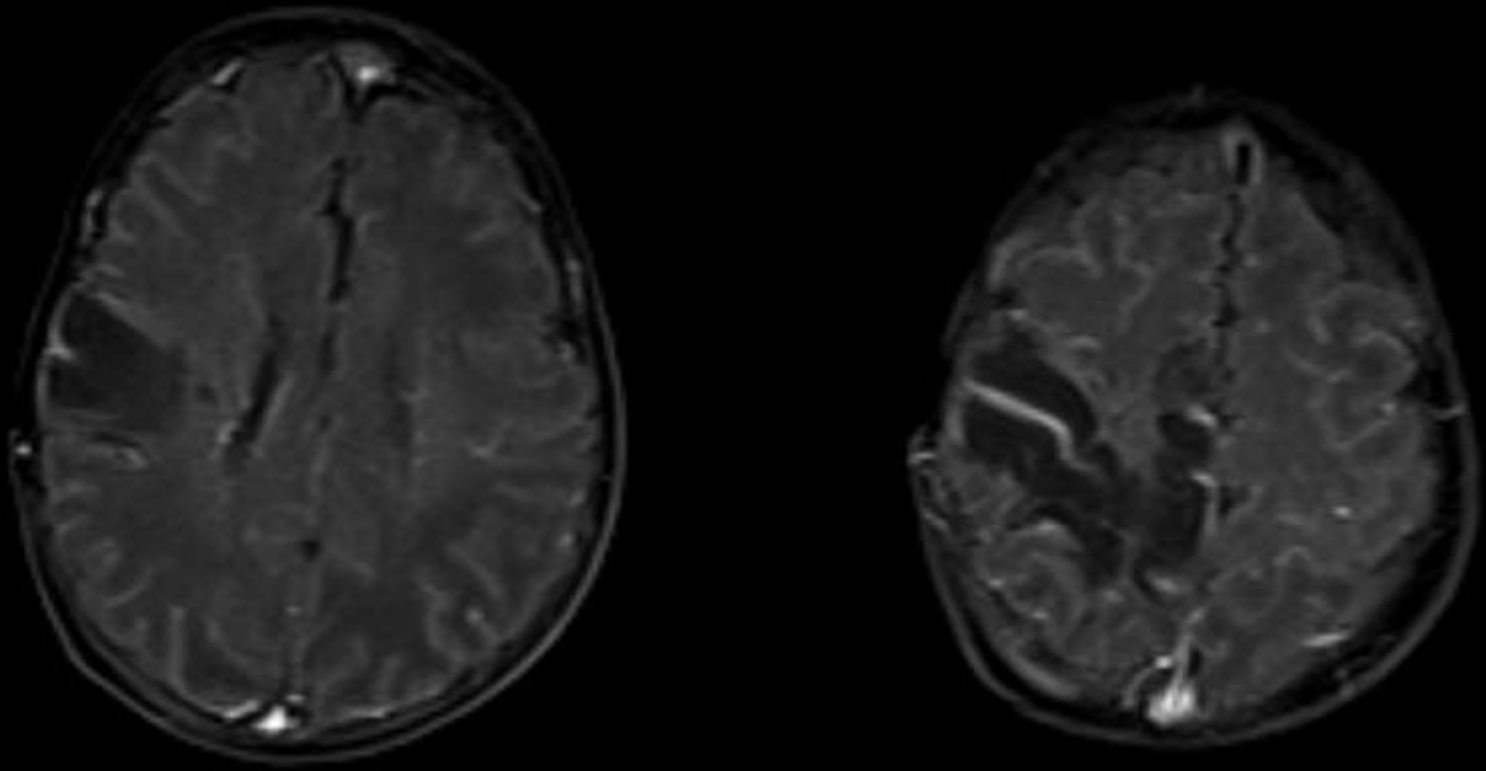
2 ay sonraki takip MRG



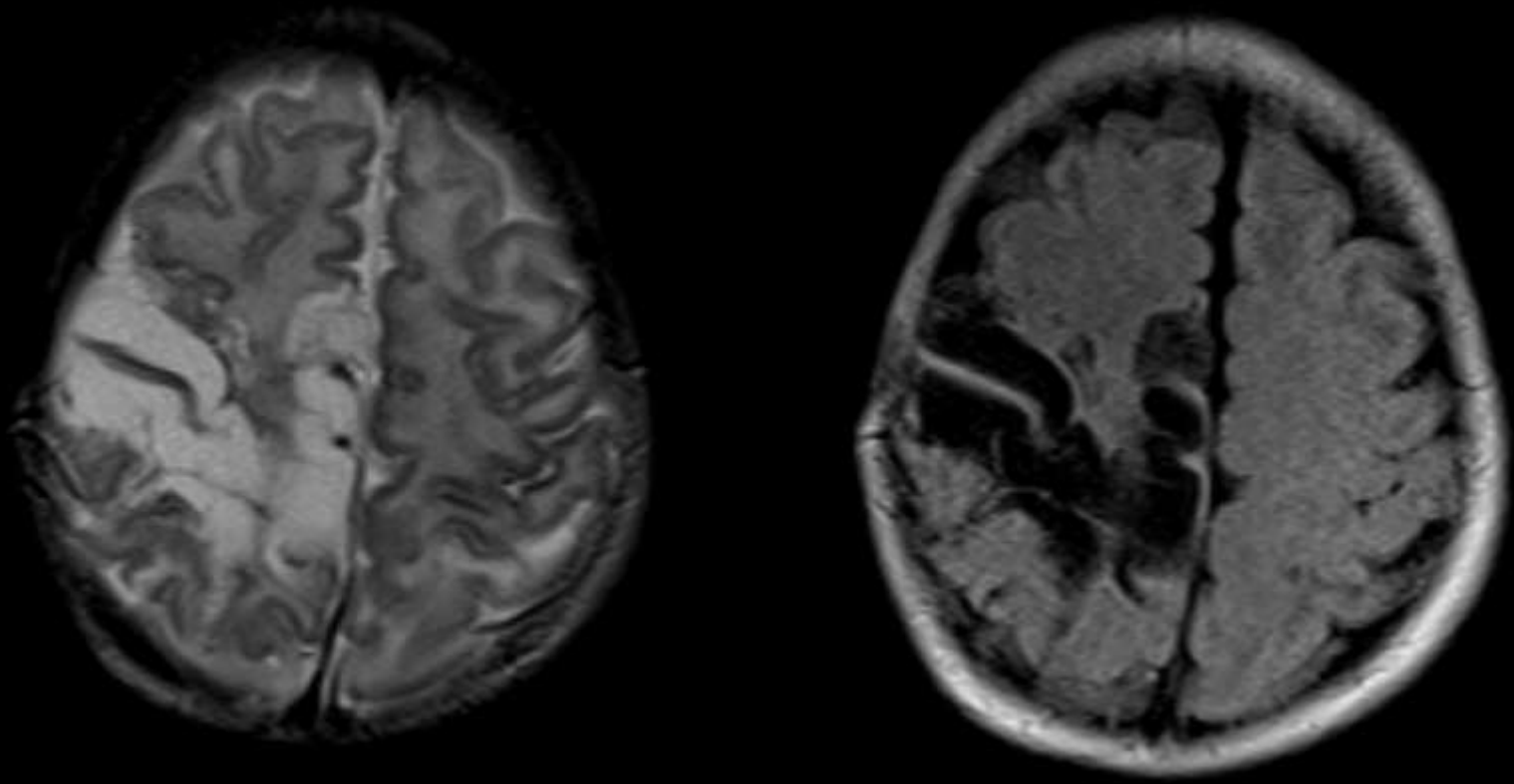
26 gün, Erkek



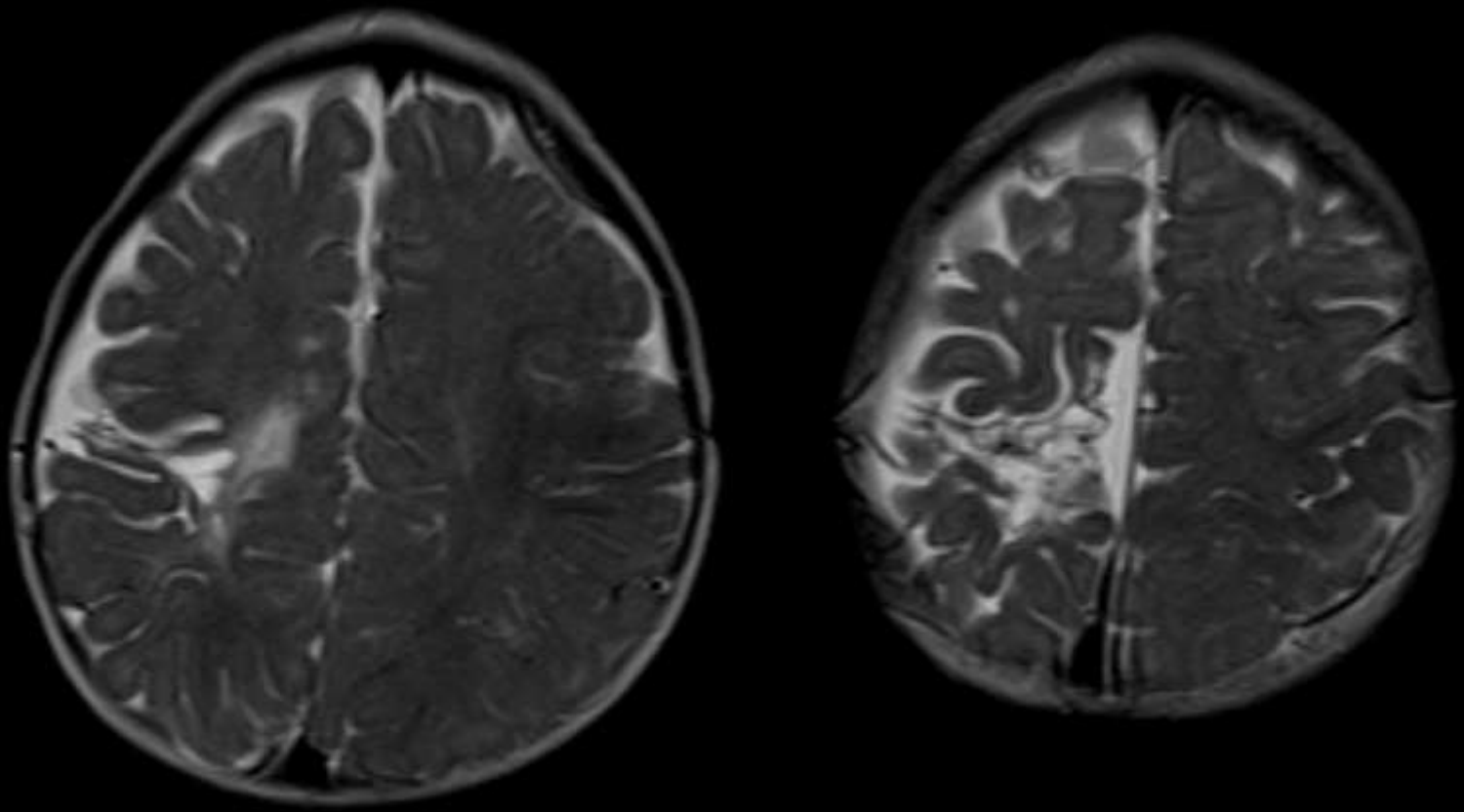
9 gün sonraki takip MRG



9 gün sonraki takip MRG



Bir yıl sonraki takip MRG

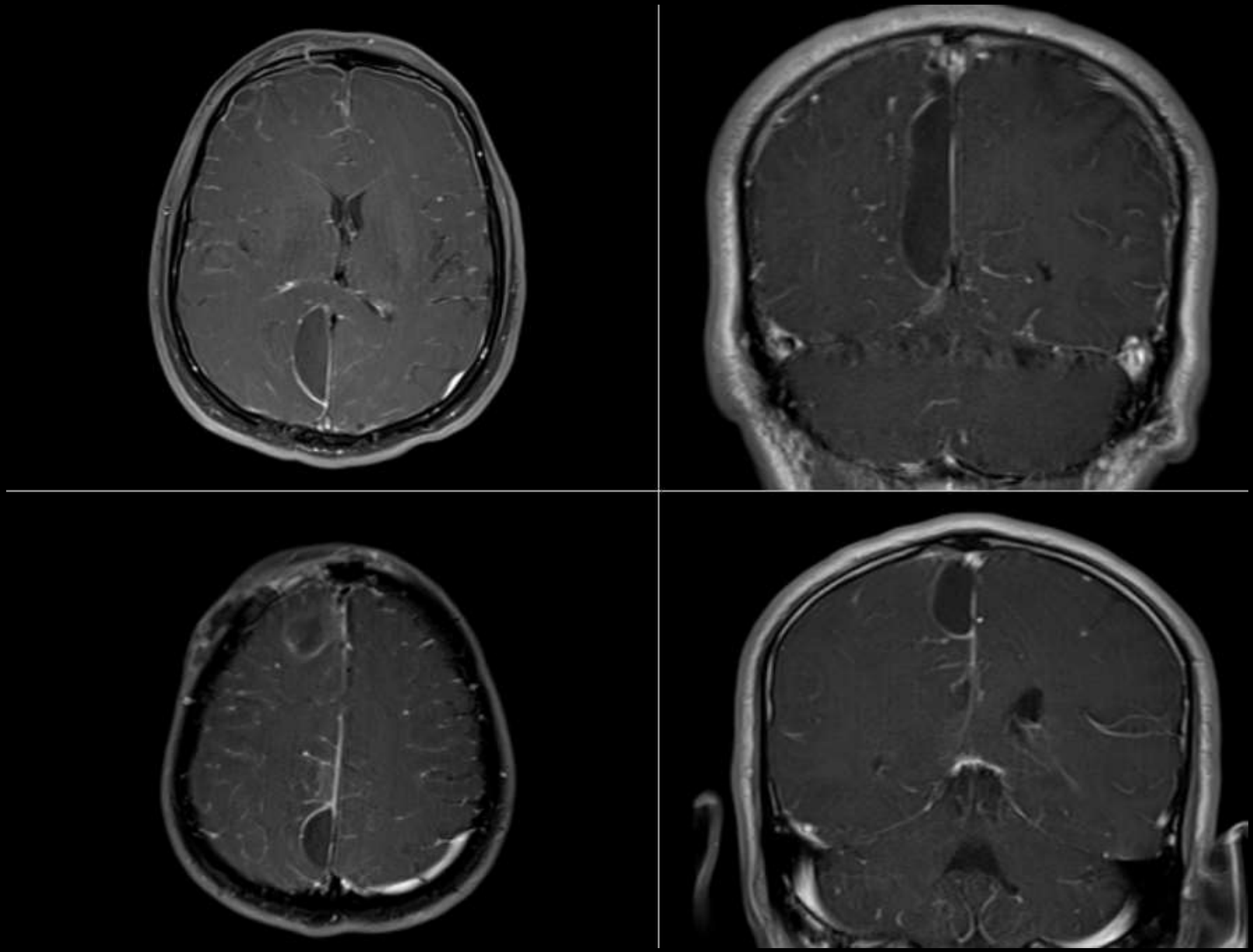


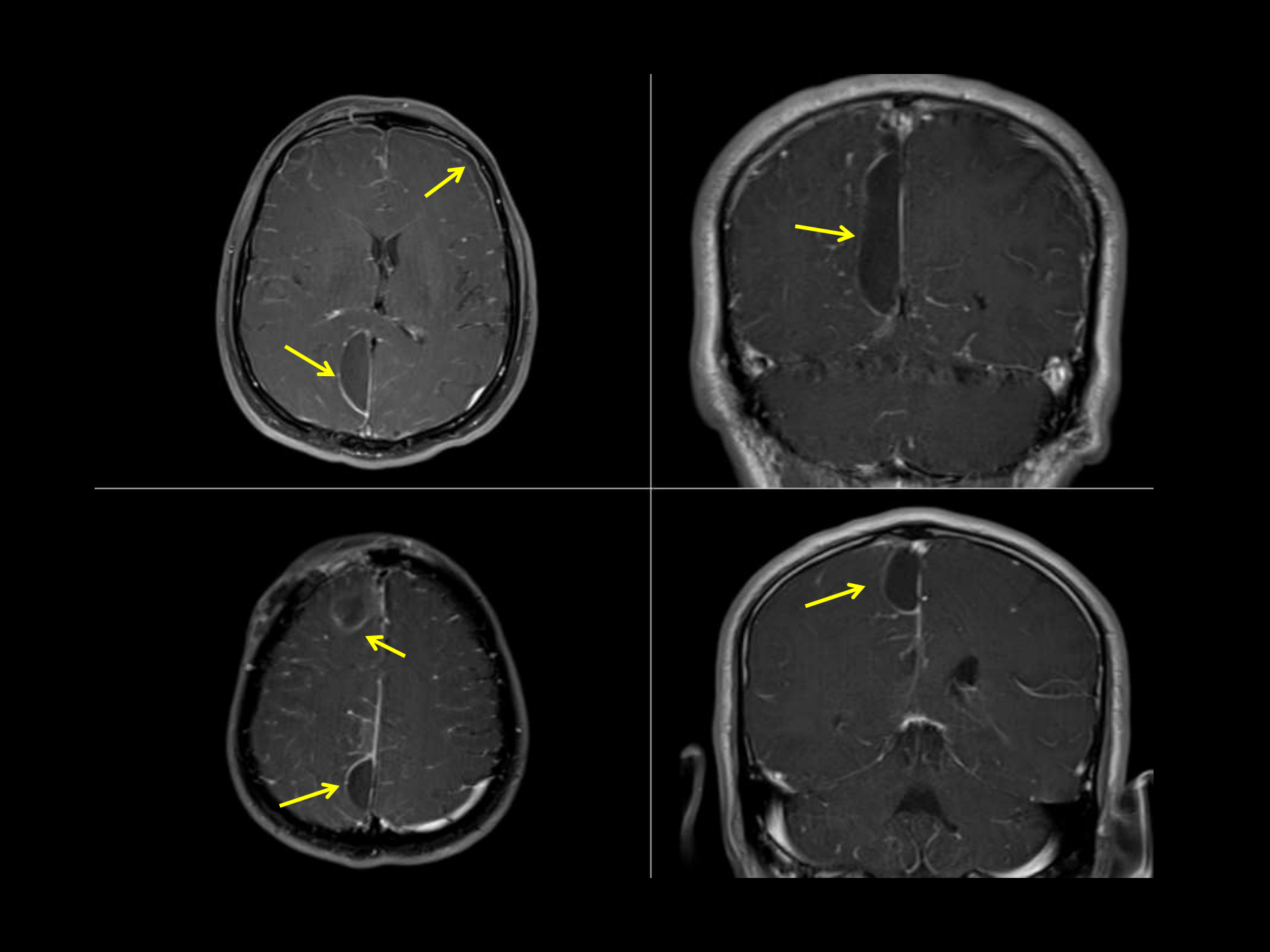
Ampiyem

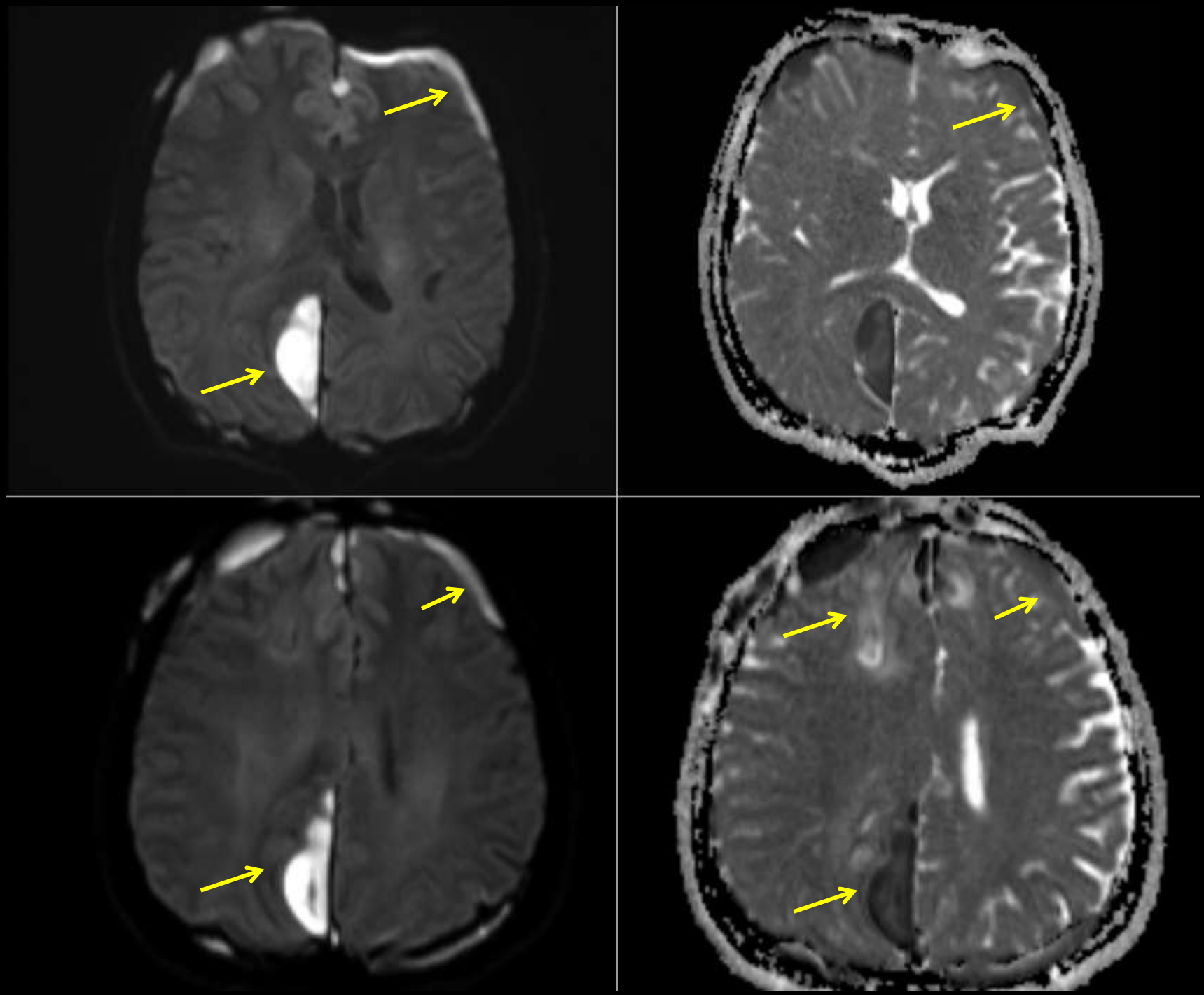
- Subdural ya da epidural mesafede olabilir
- Subdural çok daha sık
  - Sinüzit
  - Mastoid hücrelerde enfeksiyon

- Epidural
  - Benzer nedenler
  - Post operatif

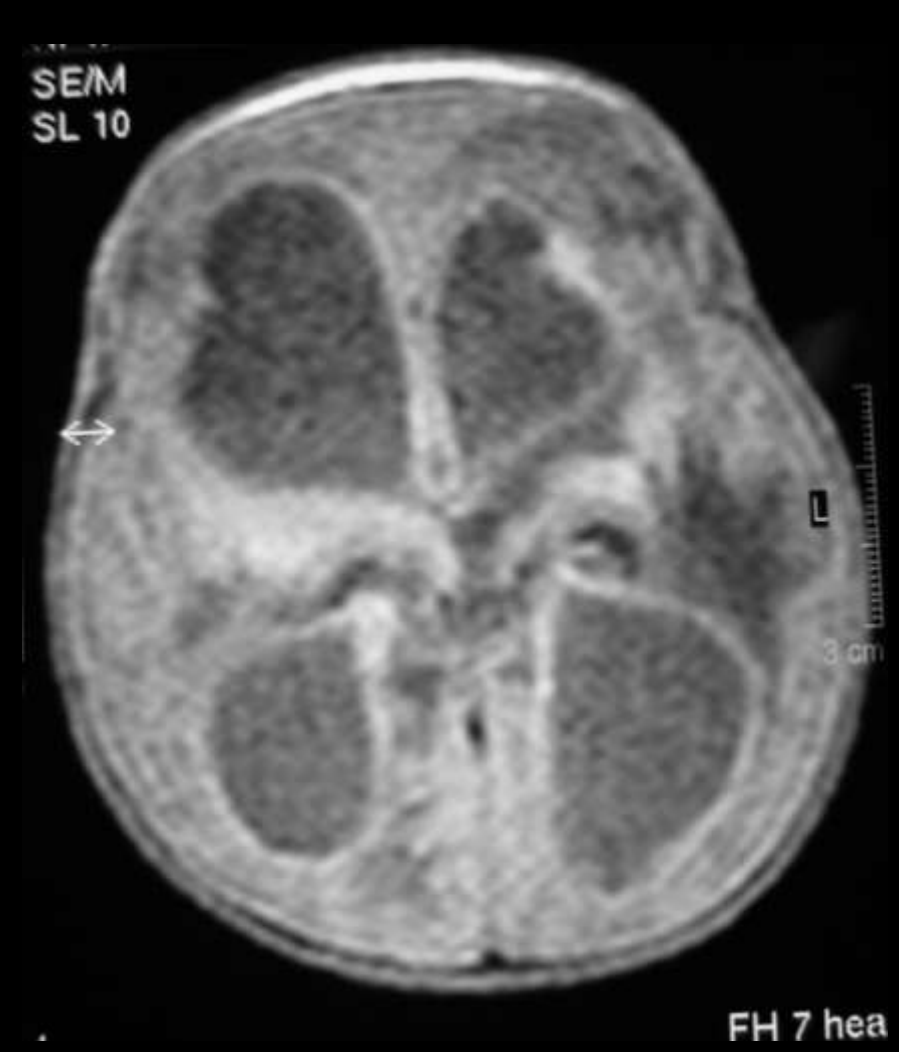
44 y, Erkek

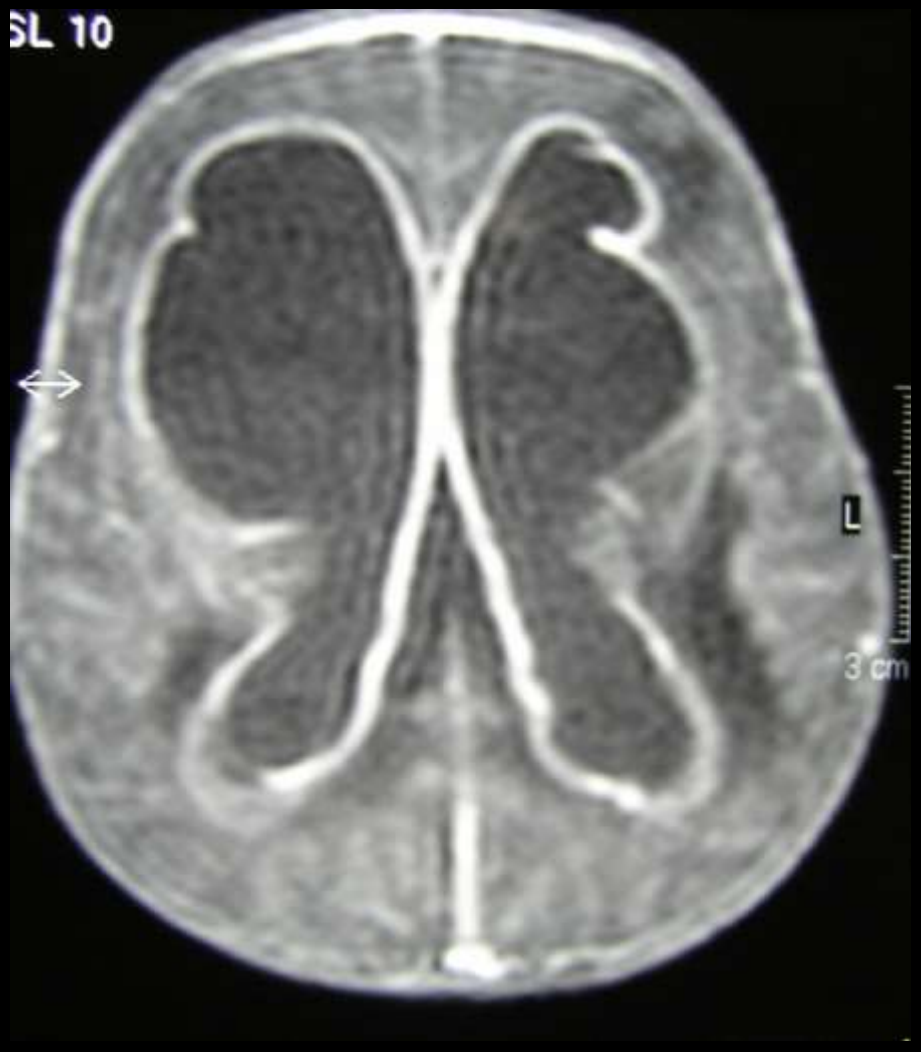




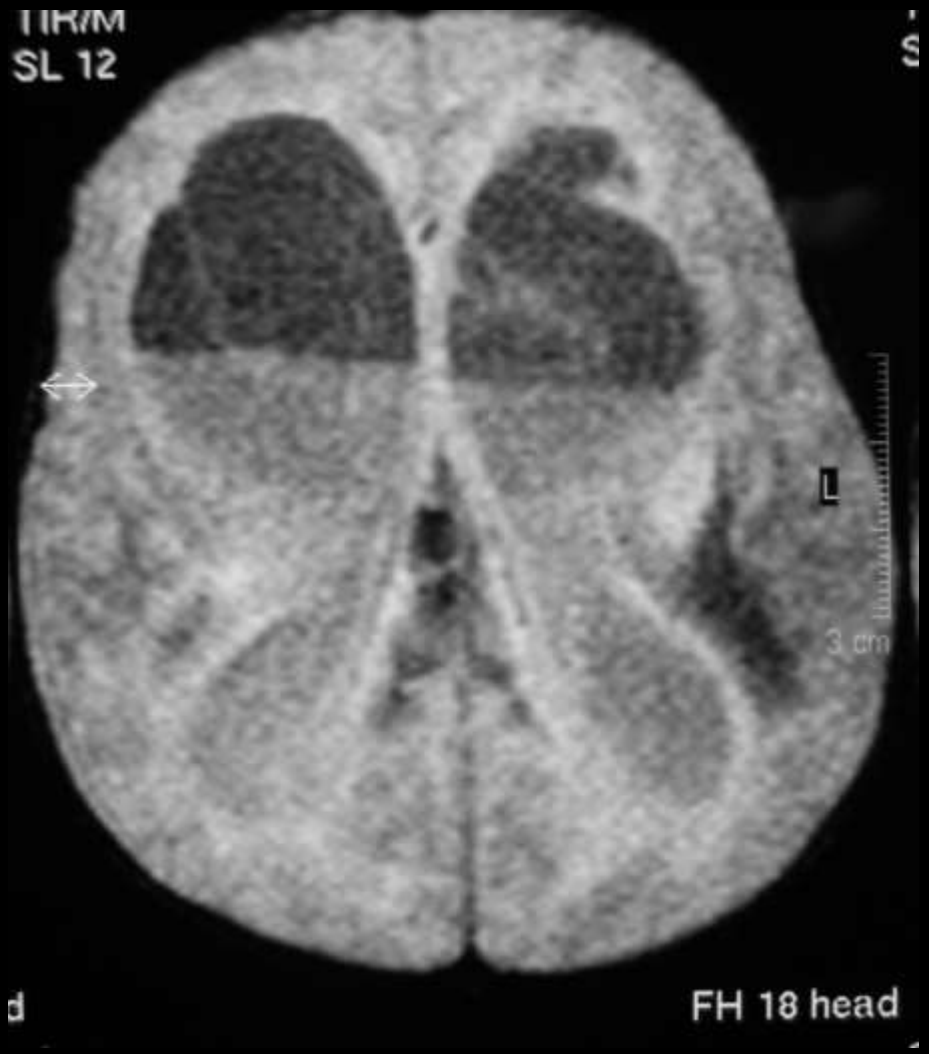


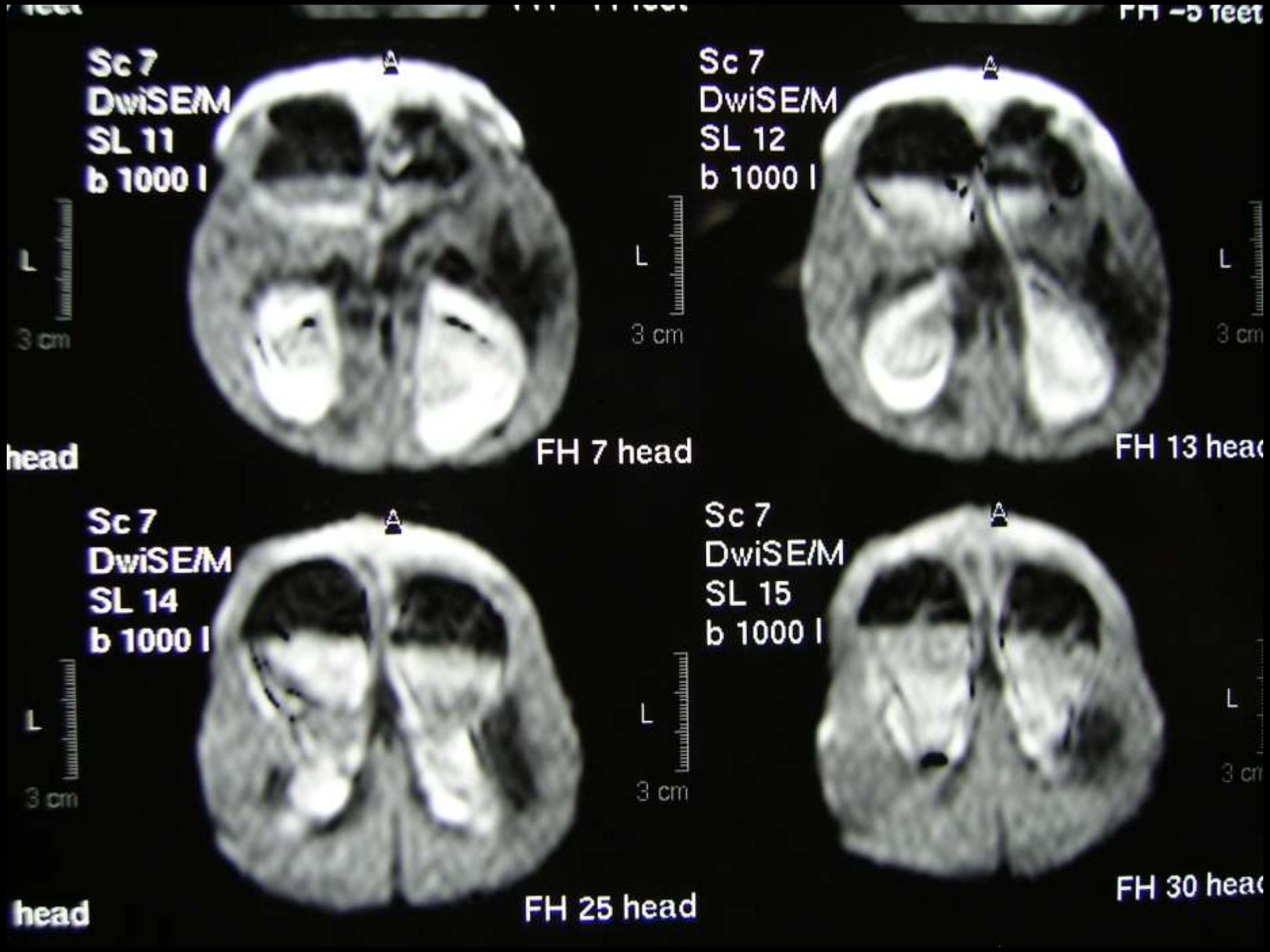
Yenidoğan, sepsis tablosu

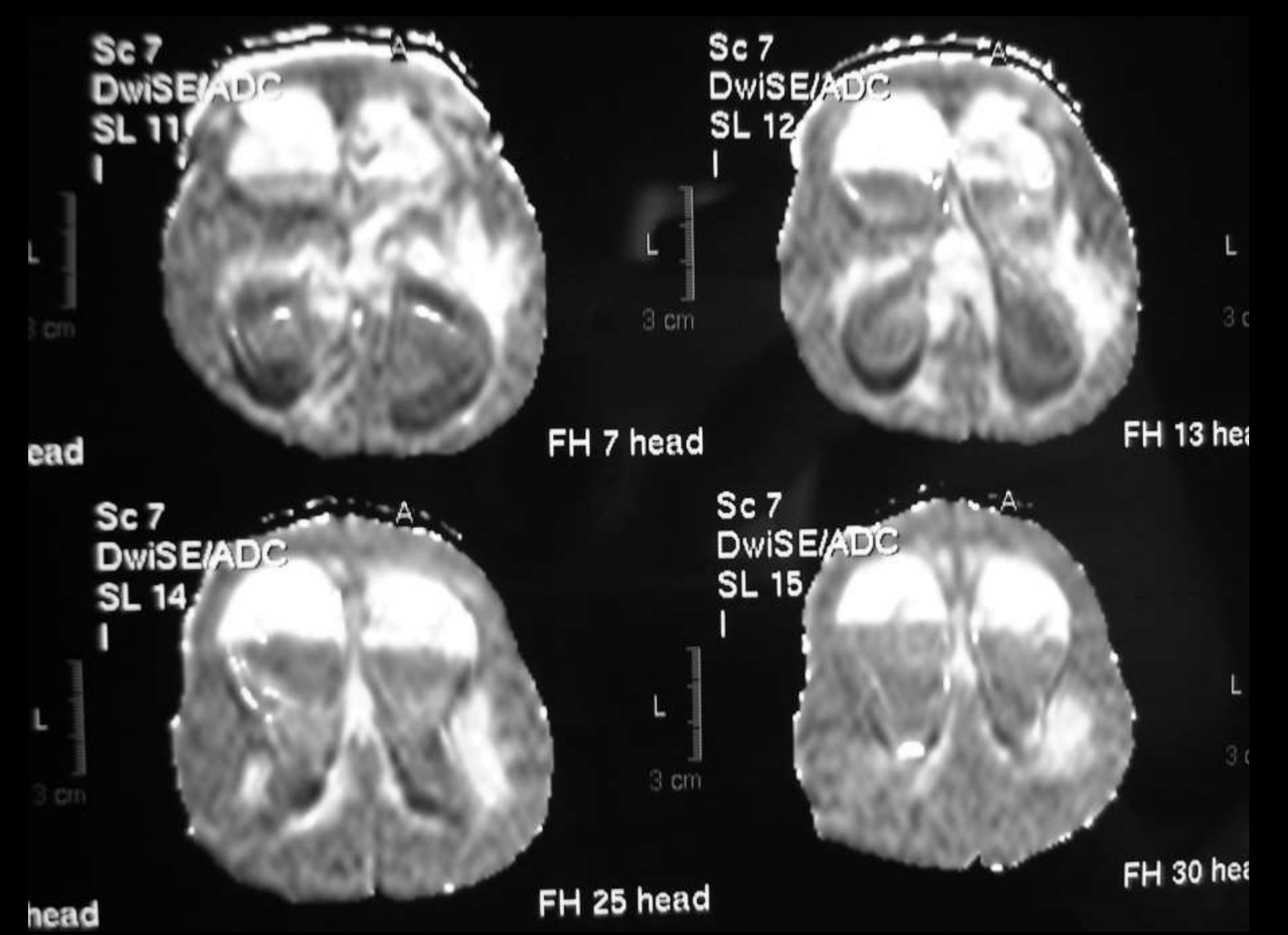




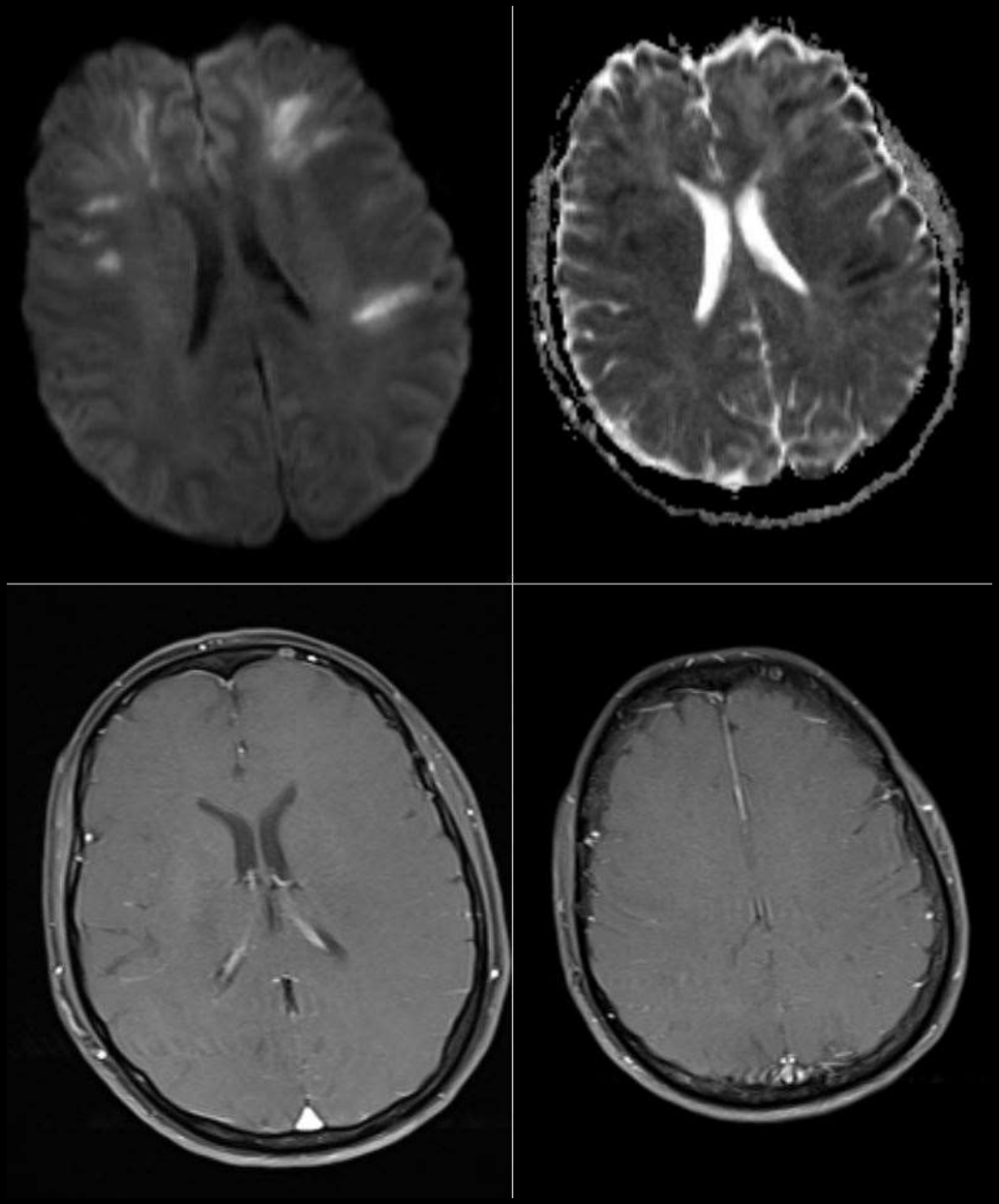
FLAIR



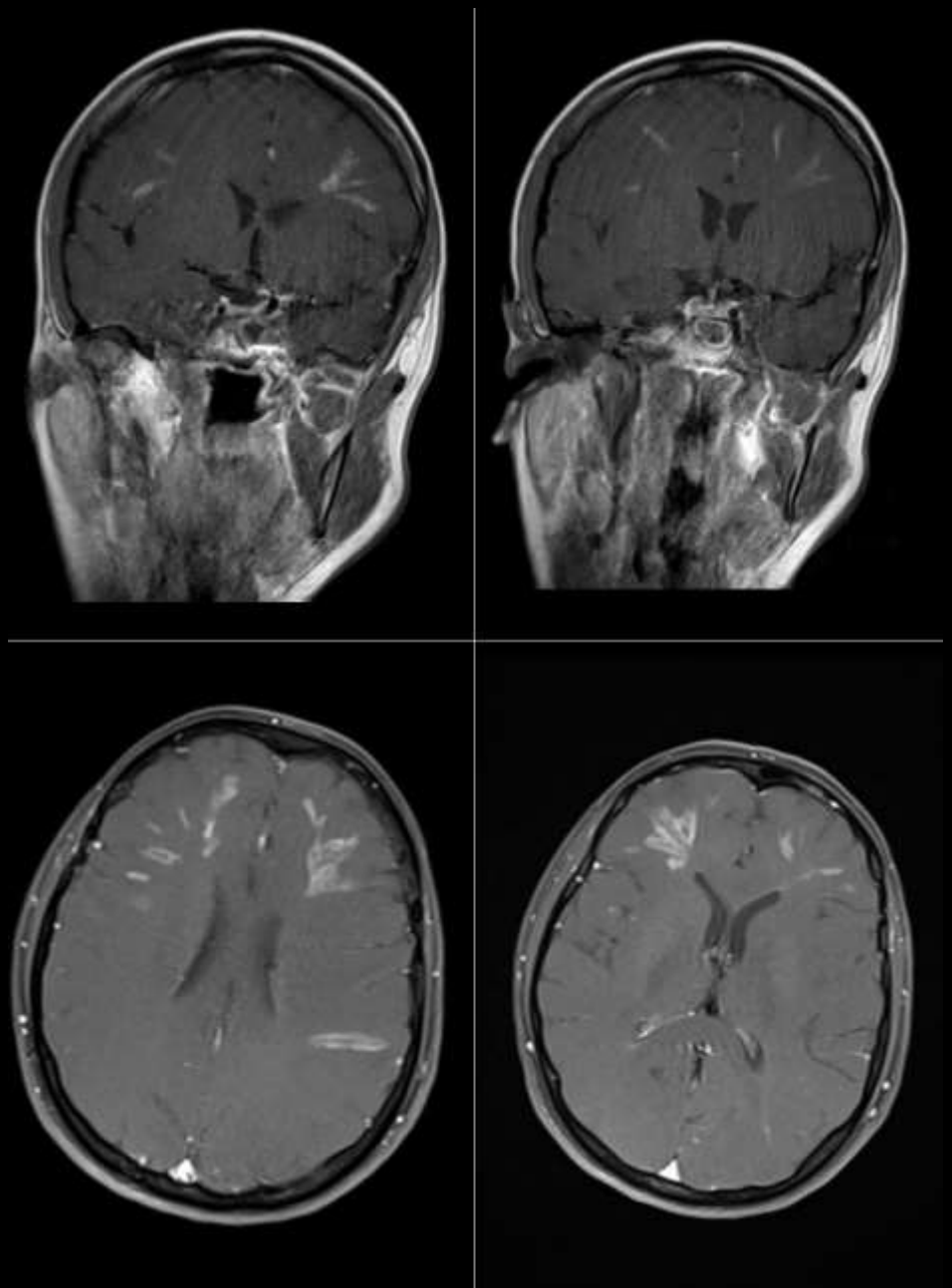

Sc 7
DwiSE/M
SL 11
b 1000 I
A
L
3 cm
head
FH 7 head
Sc 7
DwiSE/M
SL 12
b 1000 I
A
L
3 cm
FH 13 head
Sc 7
DwiSE/M
SL 14
b 1000 I
A
L
3 cm
head
FH 25 head
Sc 7
DwiSE/M
SL 15
b 1000 I
A
L
3 cm
FH 30 head

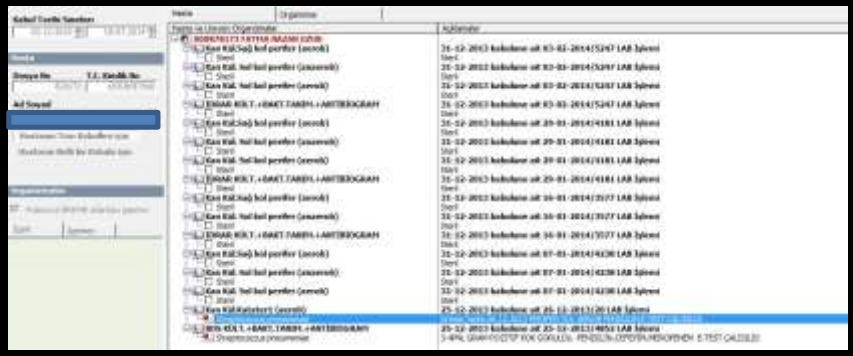

Sc 7
DwiSE/ADC
SL 11
I
A
L
3 cm
ead
FH 7 head
Sc 7
DwiSE/ADC
SL 12
I
A
L
3 cm
FH 13 hea
Sc 7
DwiSE/ADC
SL 14
I
A
L
3 cm
head
FH 25 head
Sc 7
DwiSE/ADC
SL 15
I
A
L
3 cm
FH 30 hea

37 y, K, septik tabloda



Bir hafta sonraki MRG

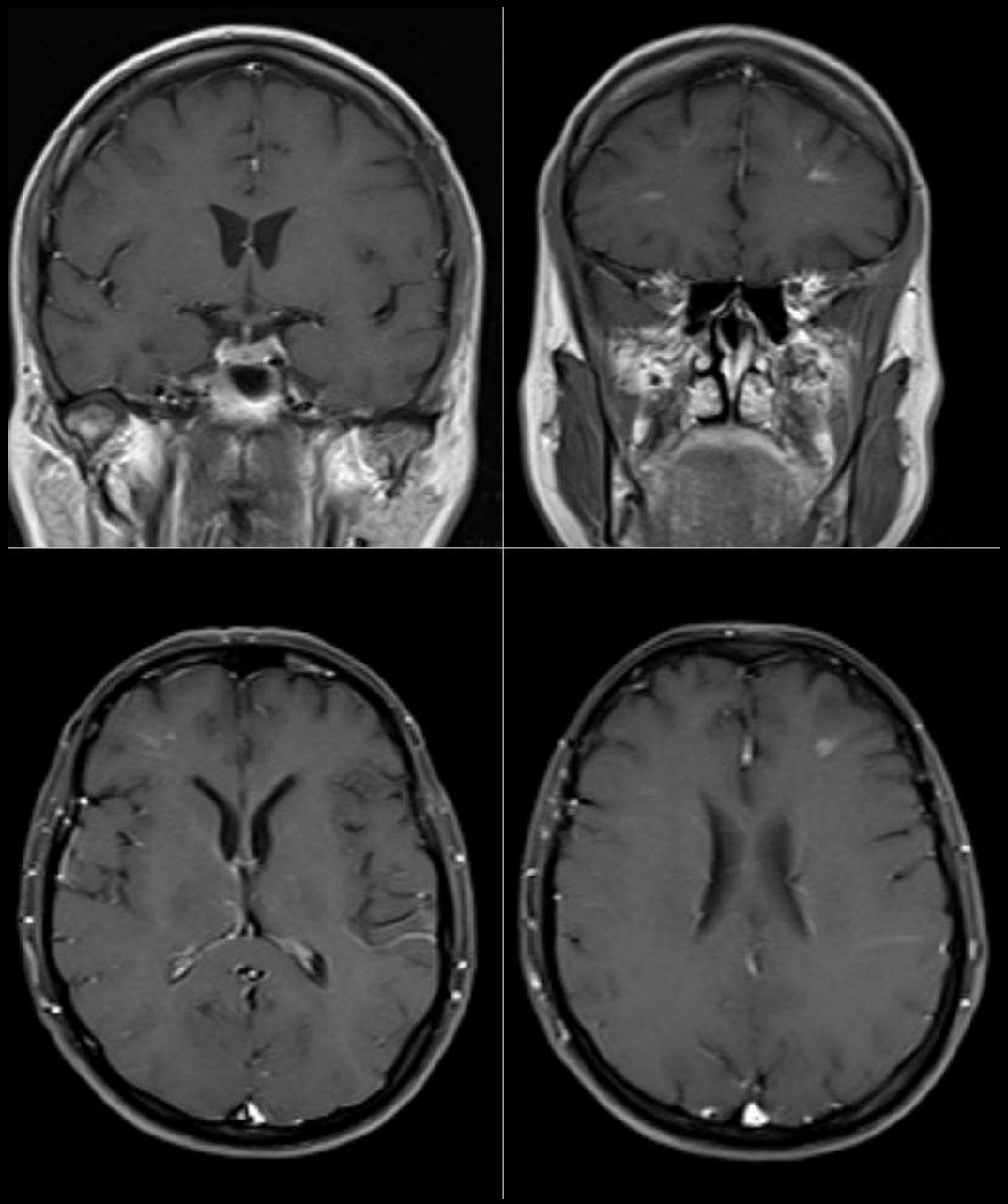




Kan kültürleri: Pnömokok

Septik emboli !!

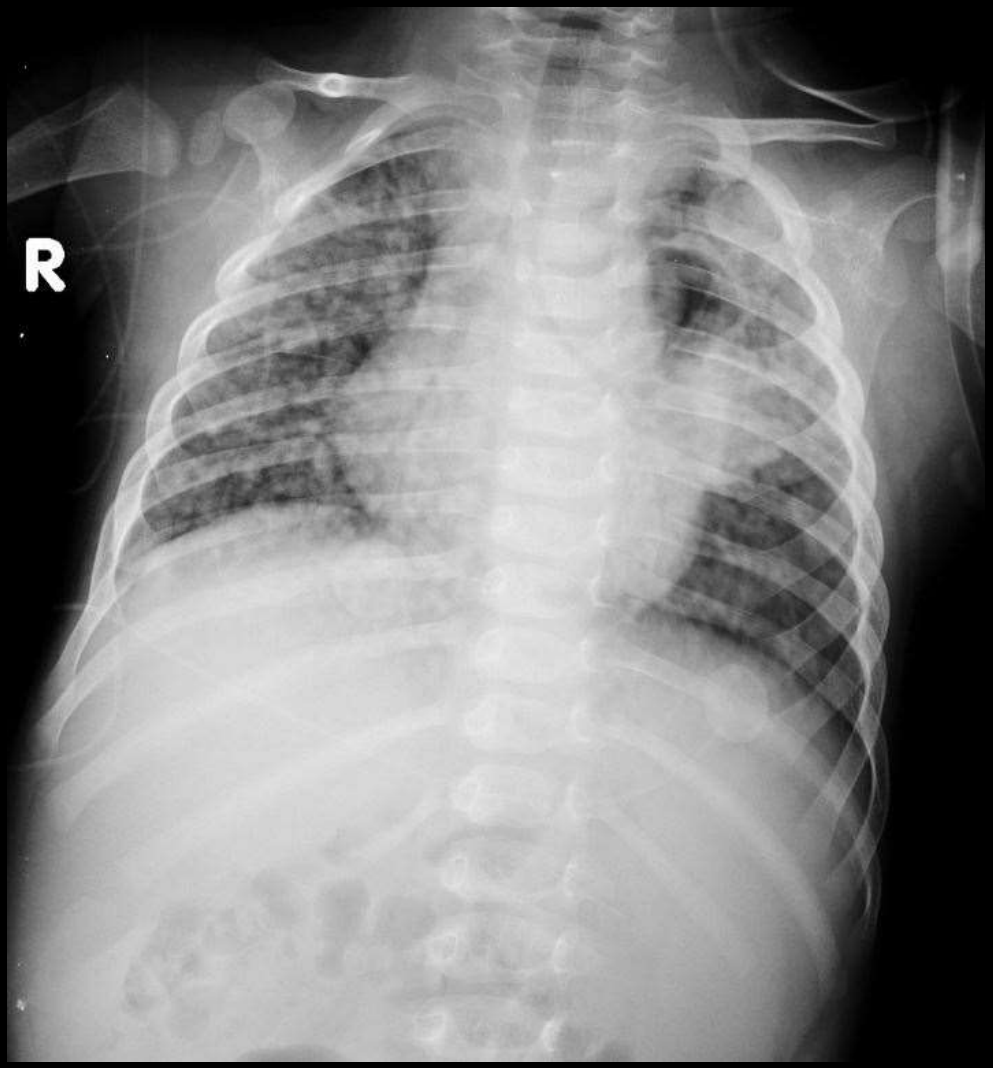
Üç hafta sonraki MRG



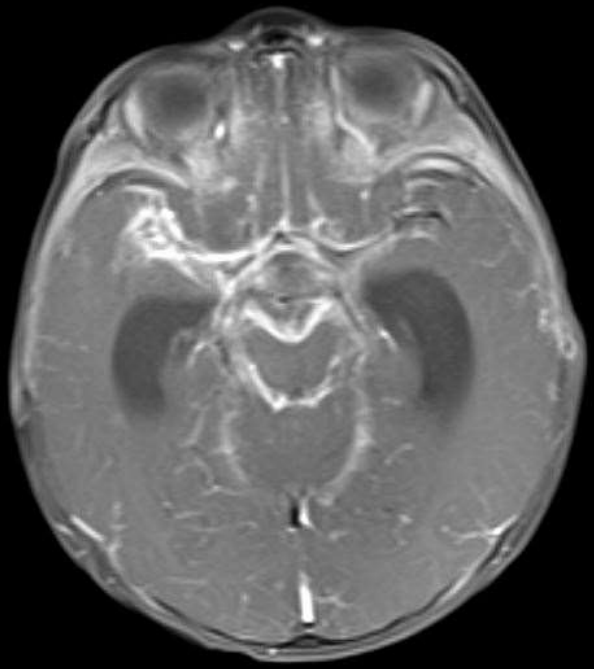
Tüberküloz menenjiti

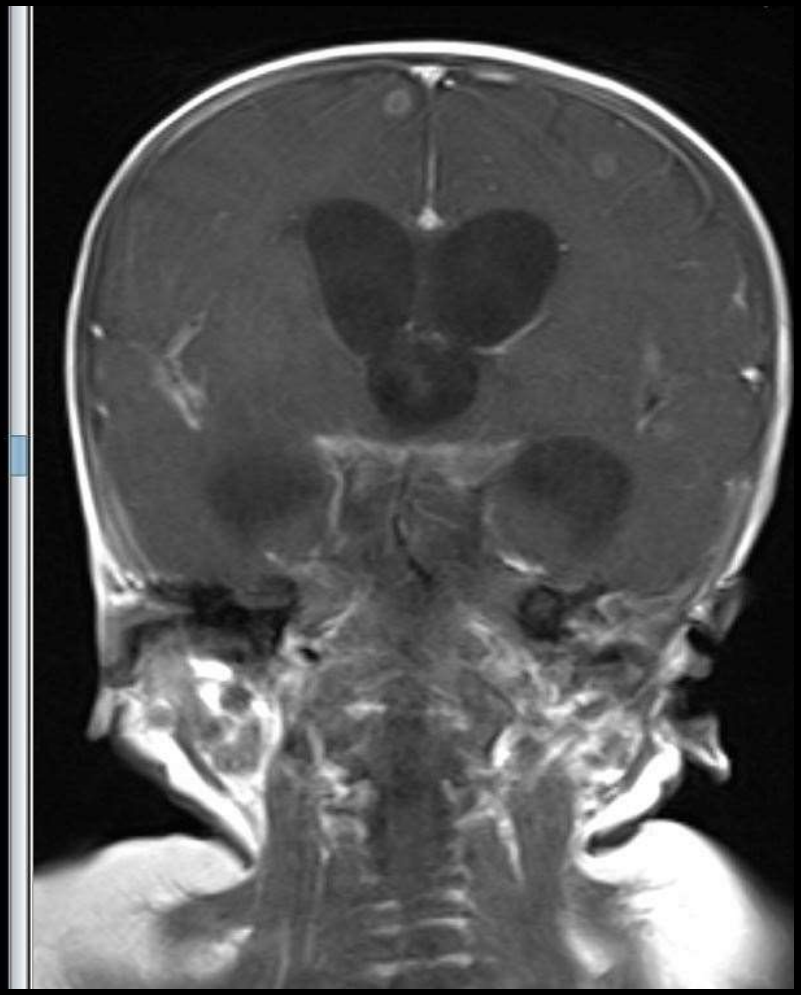
- Tüm TB olgularında % 5'lere varan SSS yayılımı
- HIV, immün sistem yetmezliğinde sıklığı artar
- Bazal menenjit
- Tüberkülomlar
- Apse formasyonu
- Kronikleşebilir

8 aylık erkek, ateş, genel durum bozuk

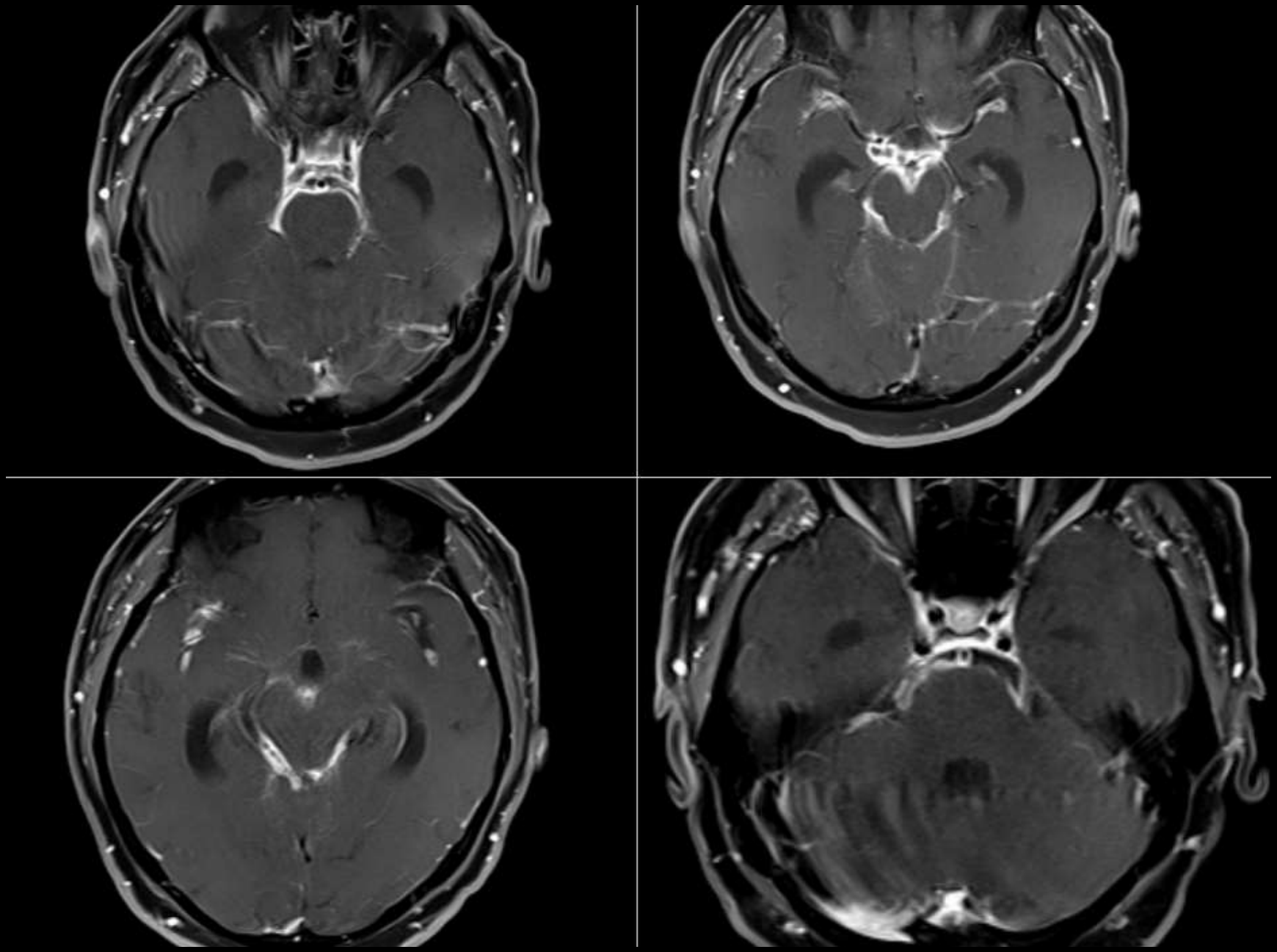


Aynı olgu





47 yaş, erkek; Tbc menenjit / BAZAL MENENJİT



Serebrit ve Apseler

- Büyük kısmı bakteriyel
- Sinüsler, mastoid hücreler, diş köklerinden direkt yayılım
- Hematojen yayılım (endokardit, pnömoni, karın içi enfeksiyonlar …)
- Travma & cerrahi sonrası

Serebrit → Apse

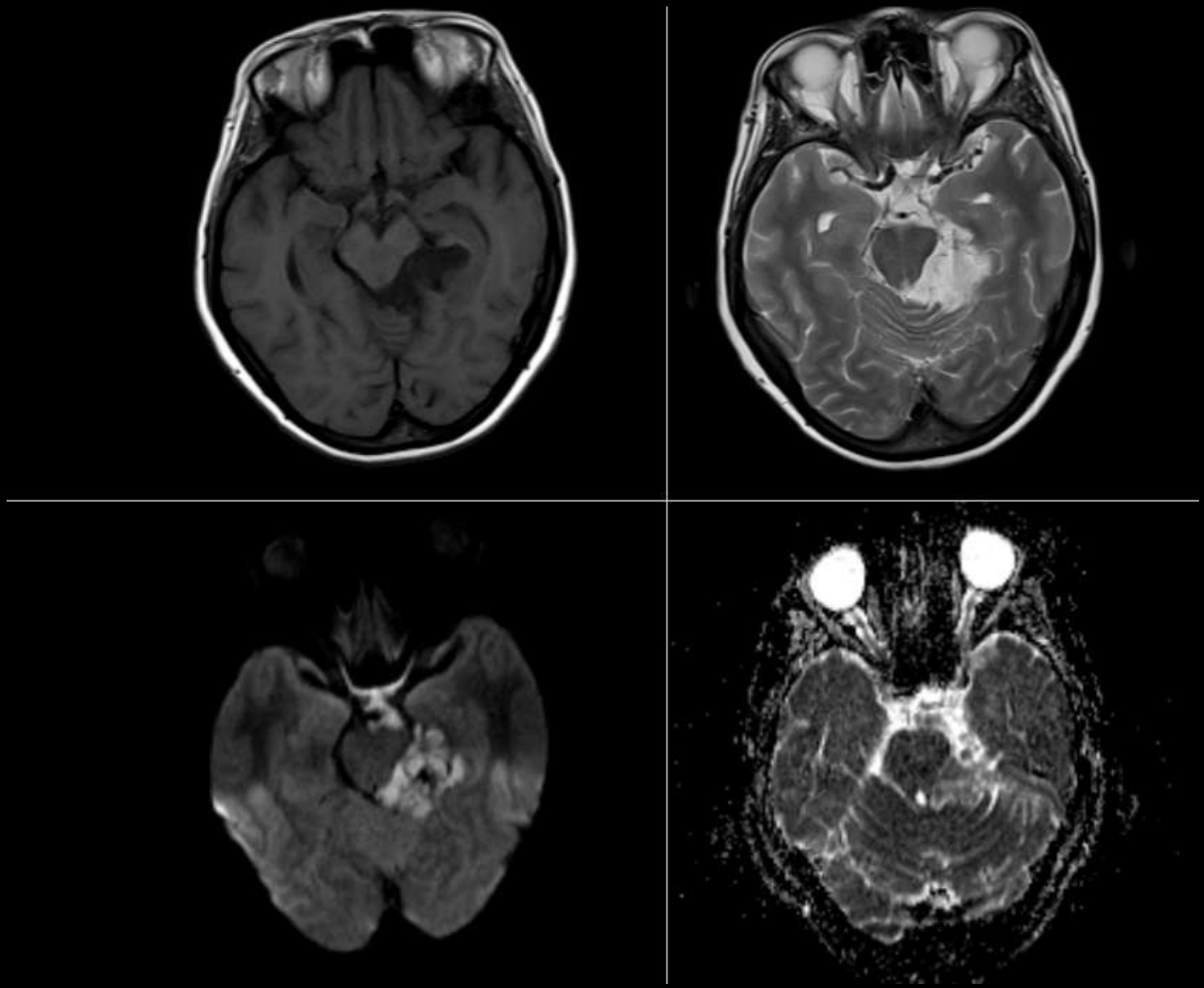
- İlk 7 gün: Erken serebrit
  - T2 ve difüzyonda intensite artışı
- 7- 10 gün: Geç serebrit
  - Vazojenik ödem oluşumu
  - Kontrast tutulumu (heterojen/çevresel)

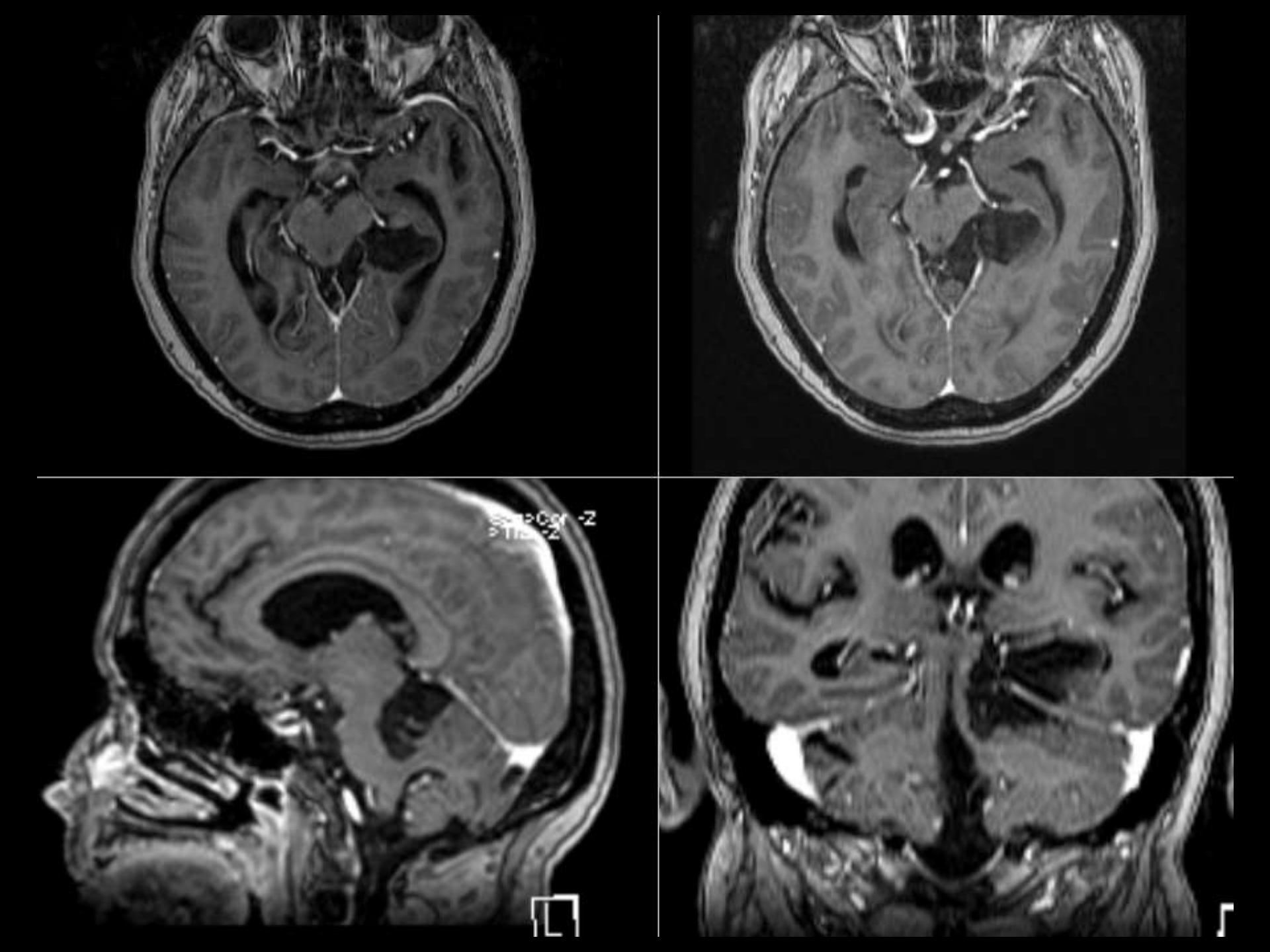
Serebrit → Apse

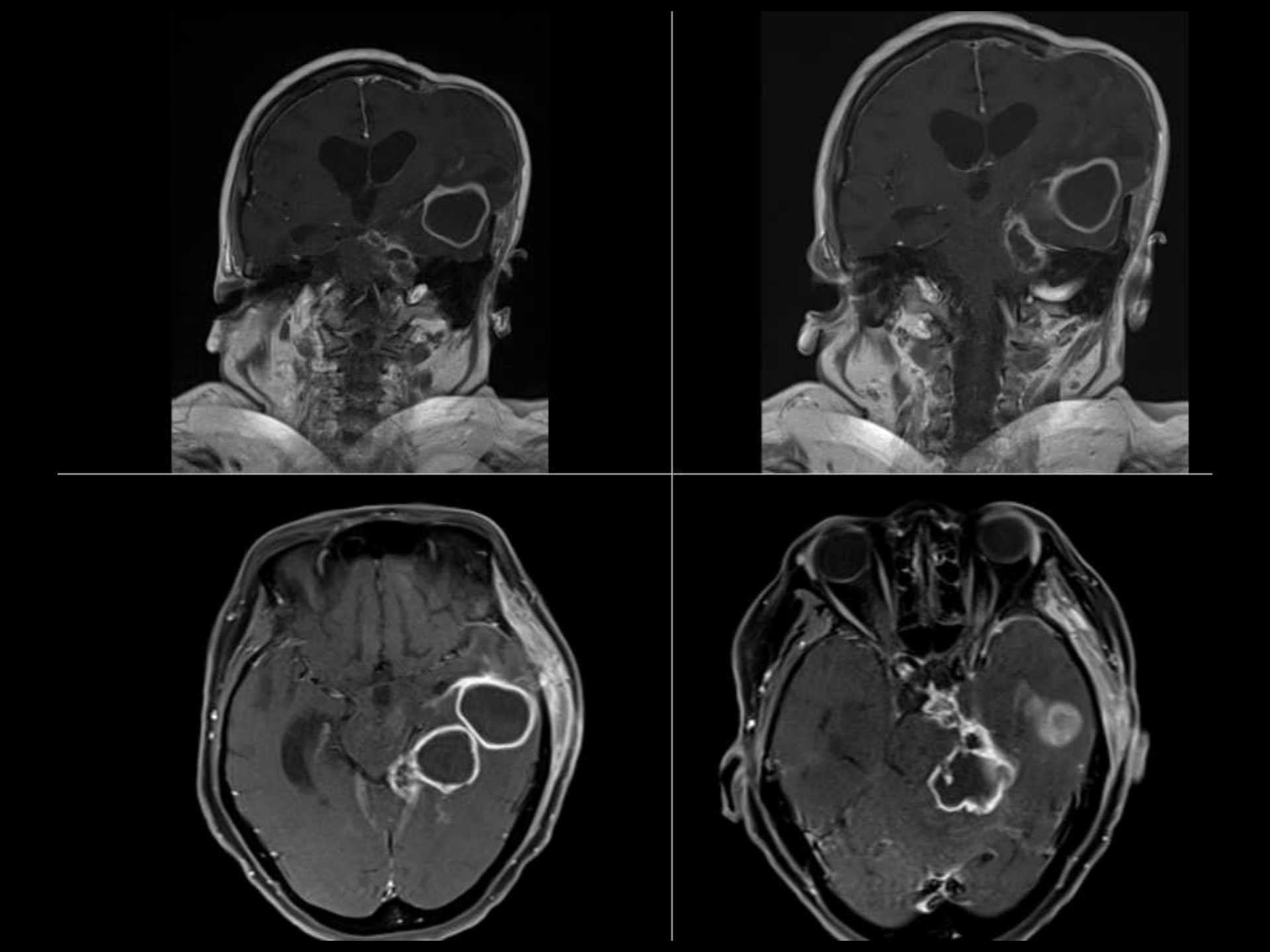
- 10-14 gün: Erken apse formasyonu
  - Kapsül enhansmanı
  - Pürülan materyal birkimi (difüzyonu kısıtlı !!)

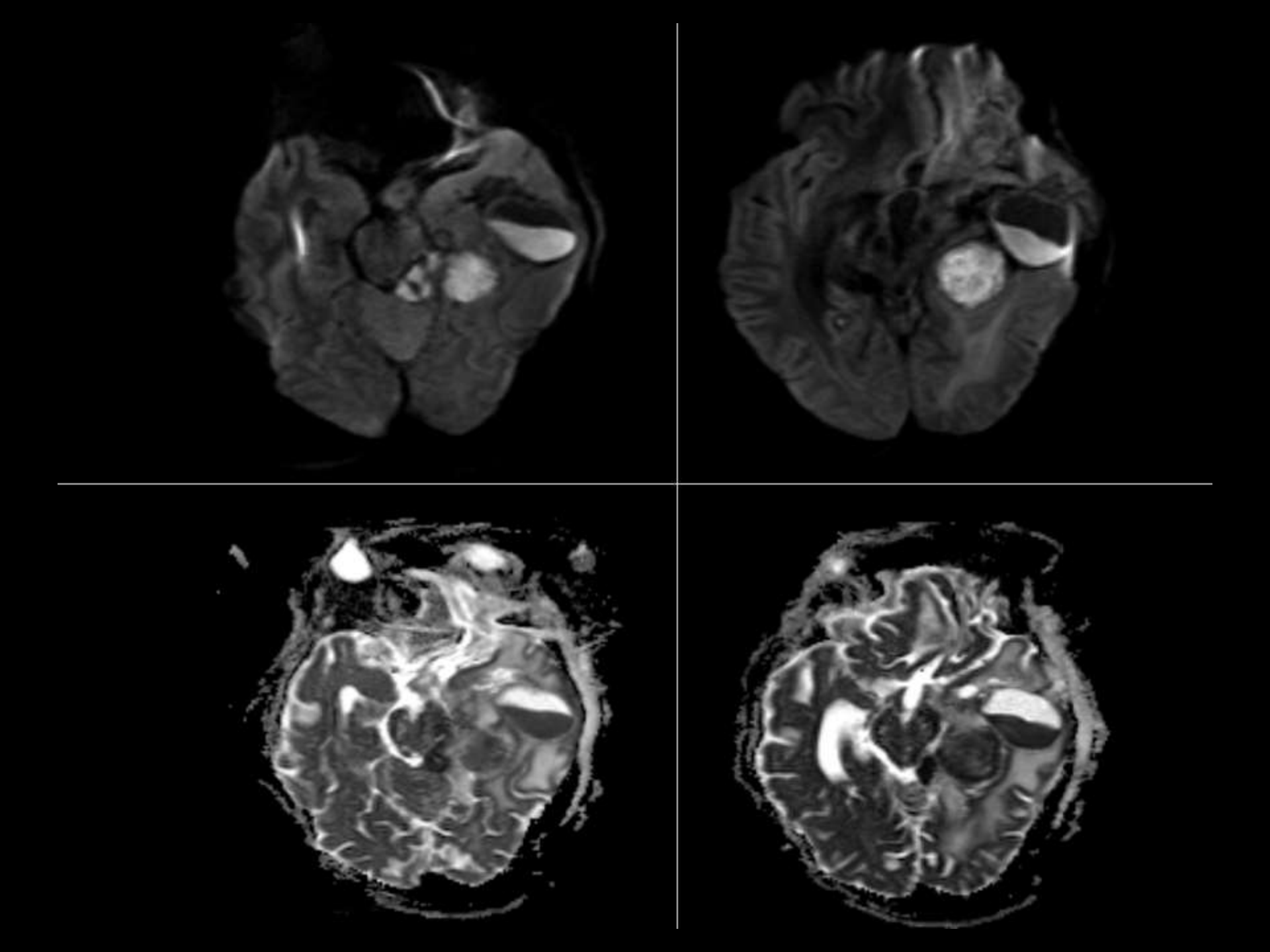
- Olgun apse: Kapsül belirgin
  - T2 düşük; T1 hafif parlak
  - Homojen çevresel enhansman

57 y, K, ??









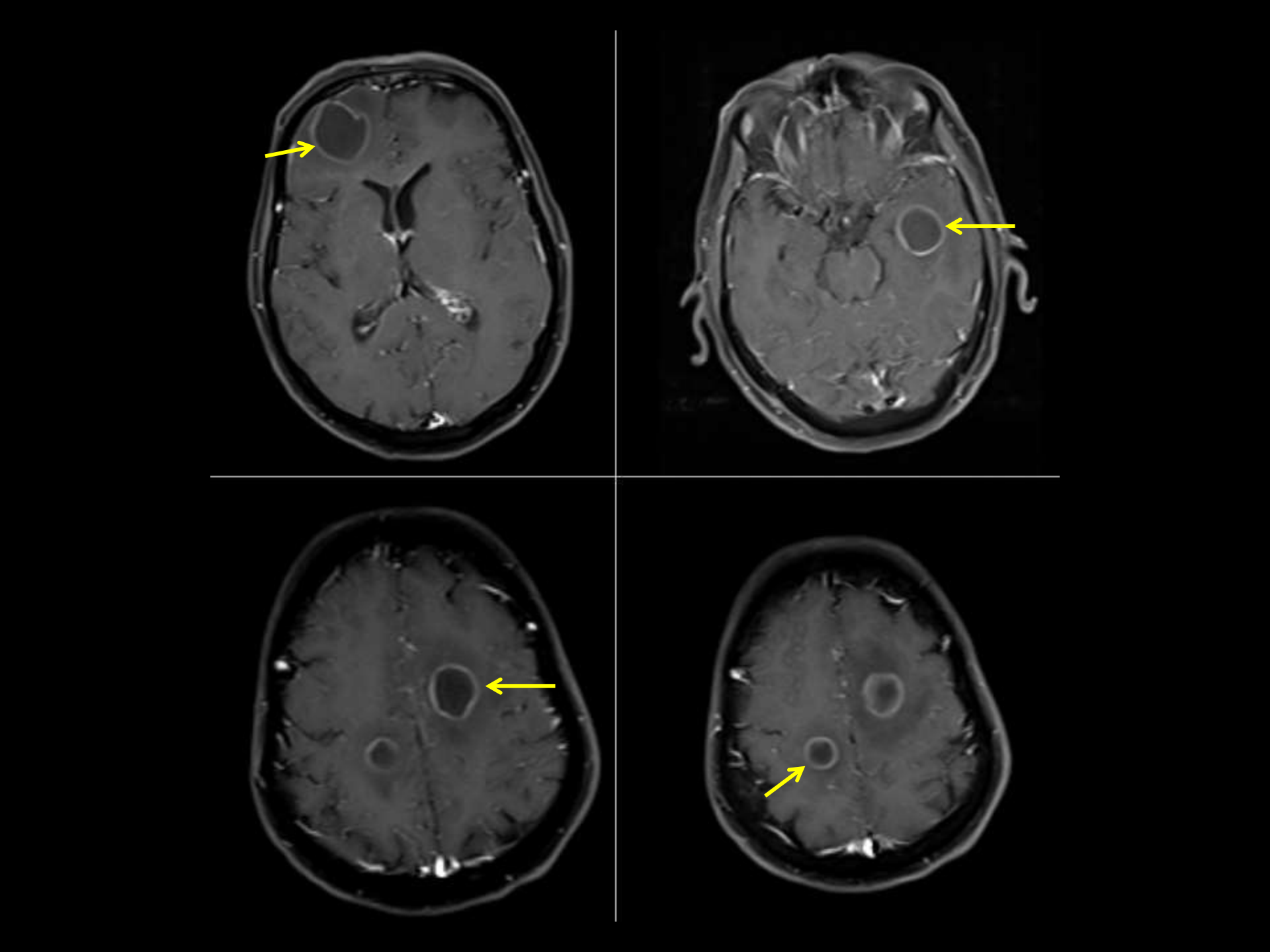
Apse mi tümör mü??

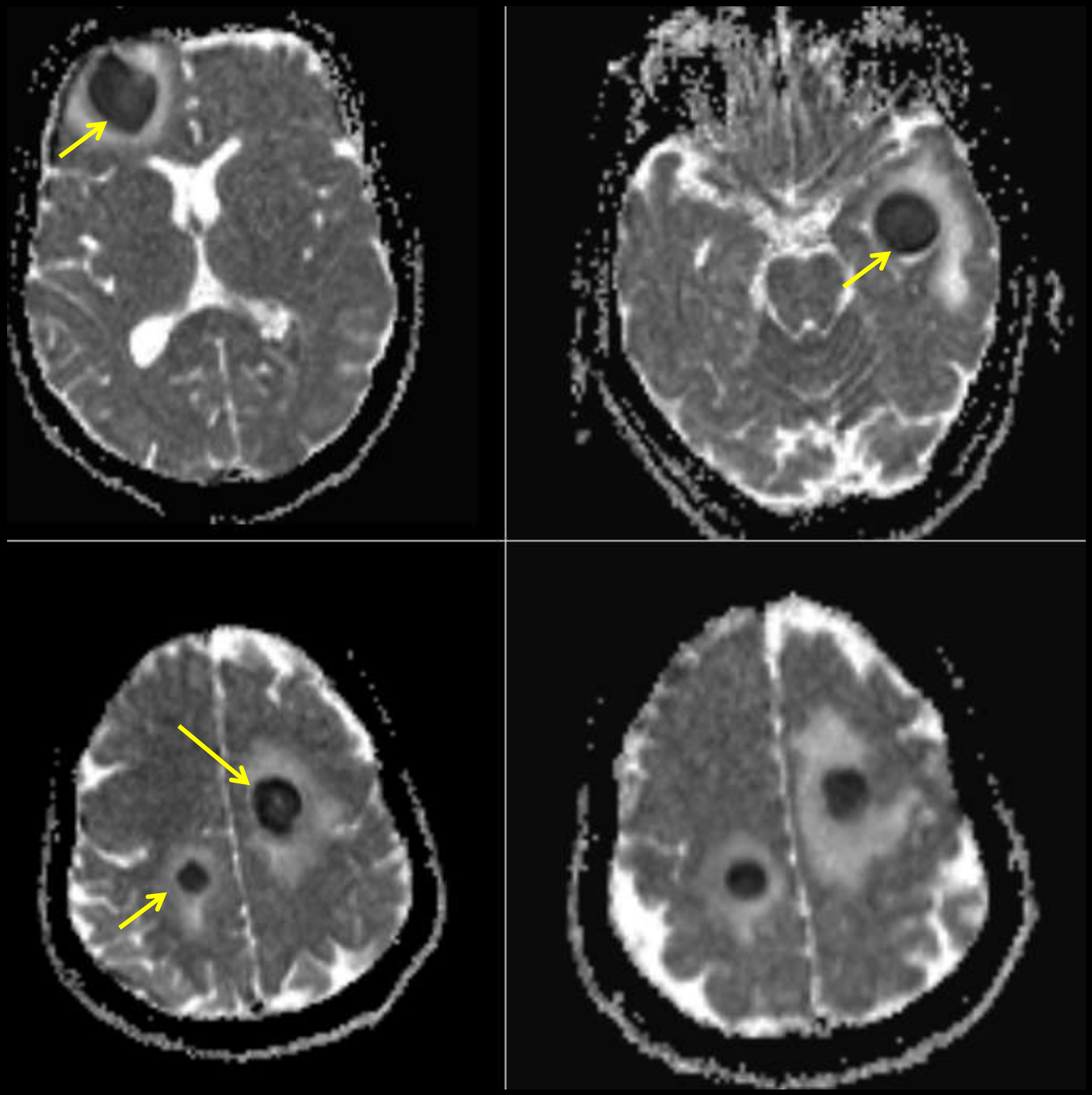
- Duvar: Apsede düzgün, tümörde düzensiz

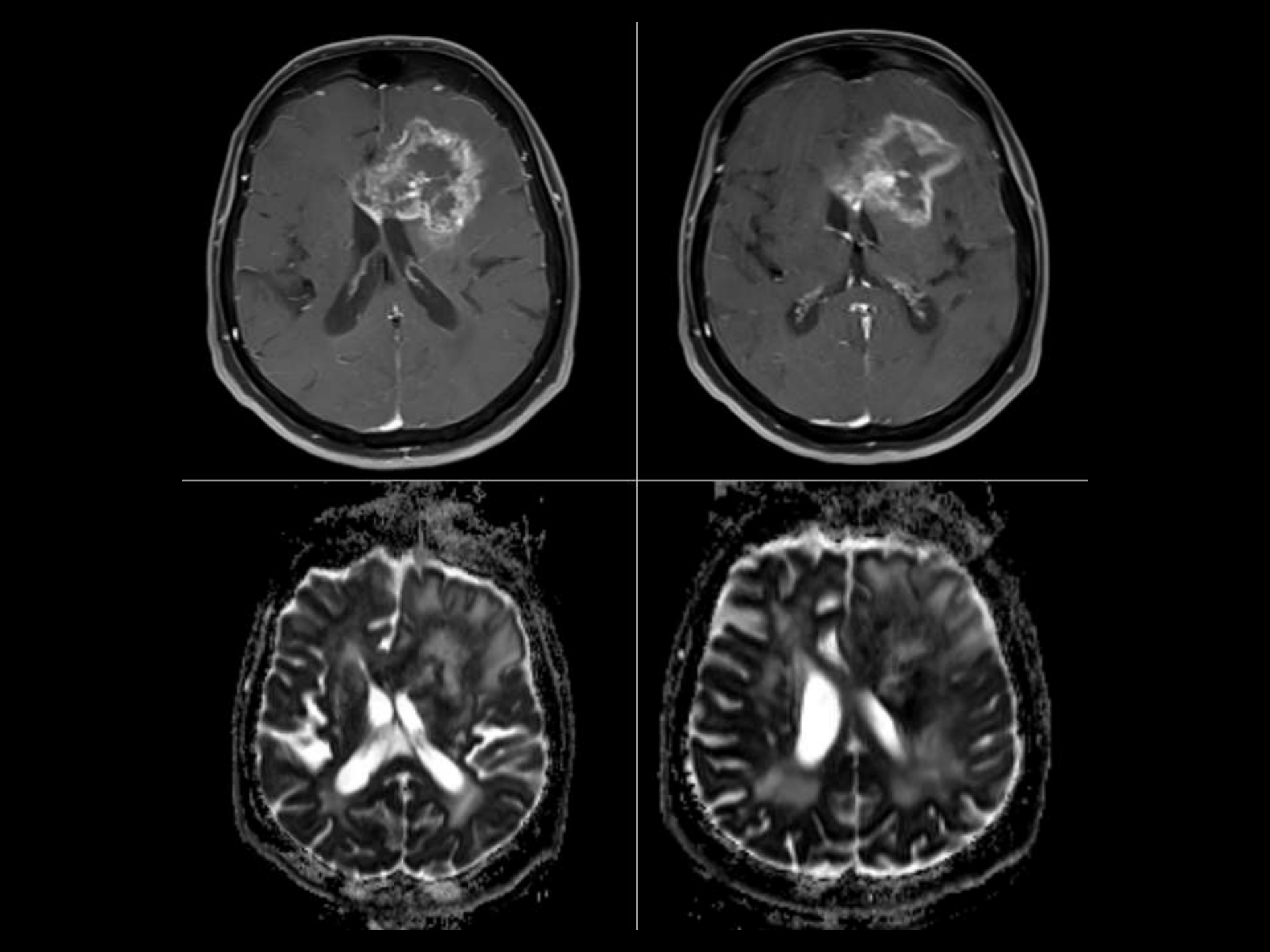
- Difüzyon: Pürülan materyalde kısıtlı (apse)
- Difüzyon: Kapsülde kısıtlı (tümör)

- Perfüzyon: Apsede kapsülde rCBV artmaz,
  Tümörde artar

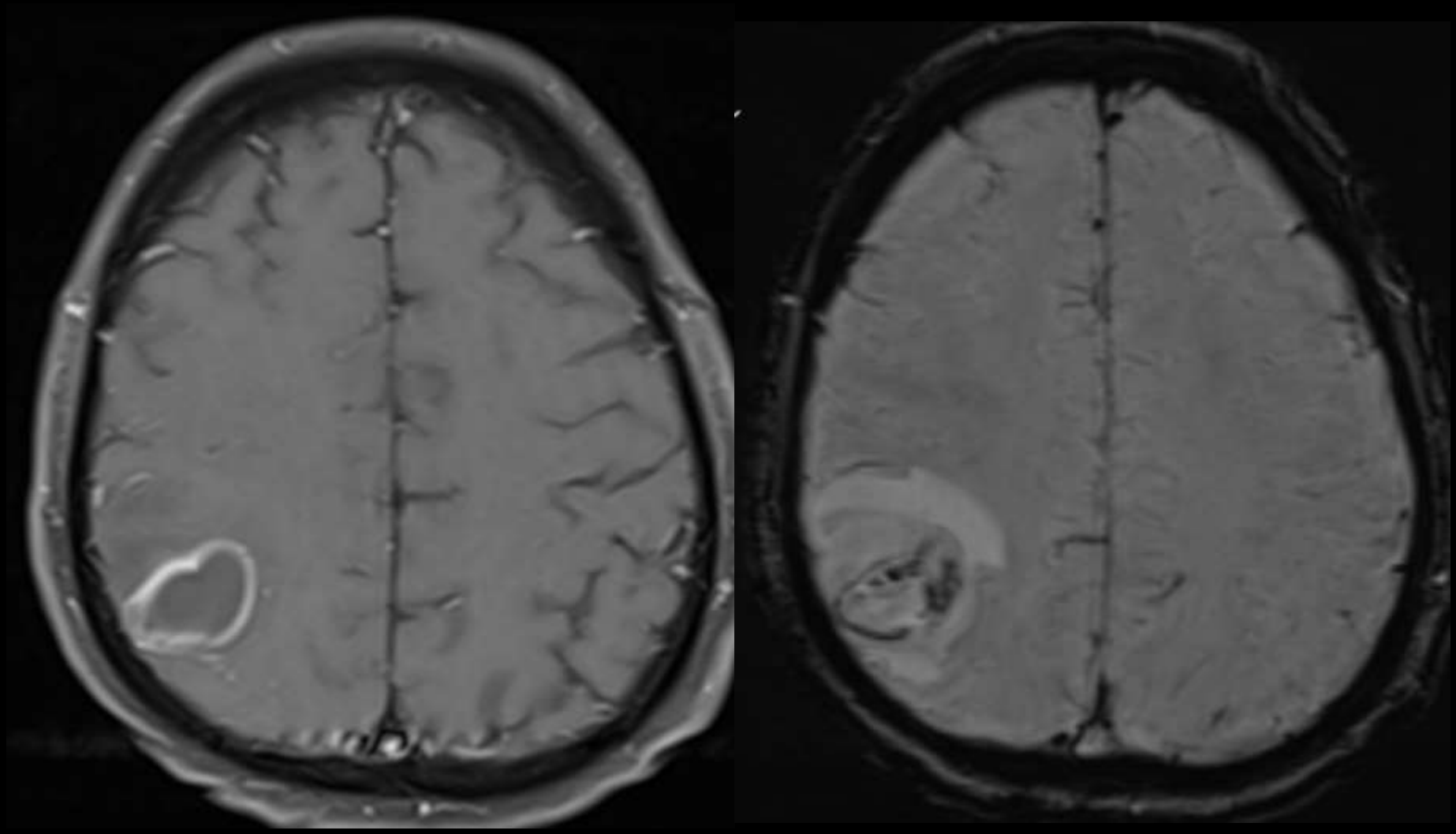
- Spektroskopi: Apsede aminoasitler artar







SWI ‘double rim’ işareti



SWI ‘double rim’ işareti

Ensefalitler

- Serebral parankimde enfeksiyöz süreç
- En sık viral (HSV tip 1 ve 2)
- Postenfeksiyöz (ADEM)
- Subakut ensefalitler/yavaş virüs enfeksiyonları (CJD, prion …)

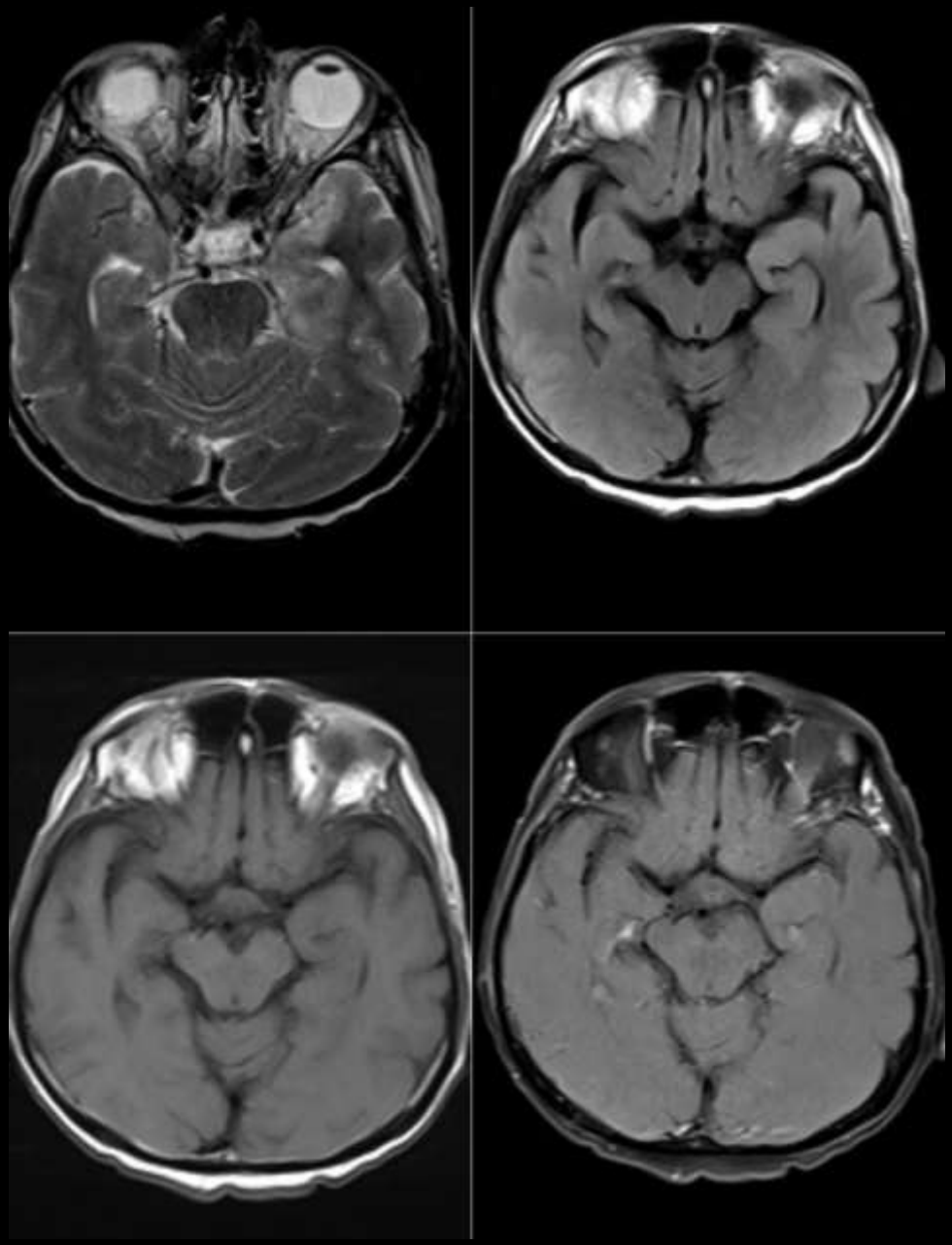
Herpes ensefaliti

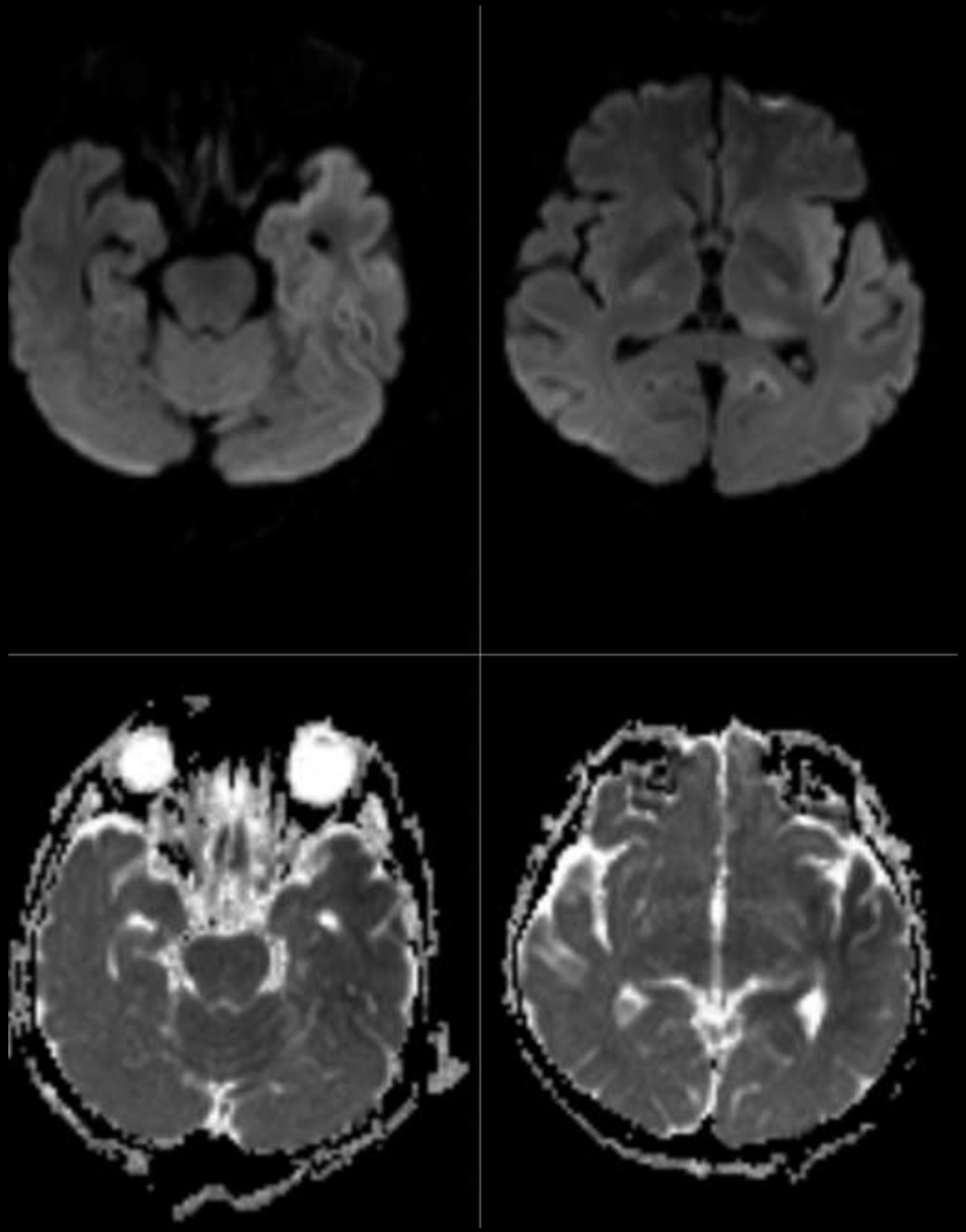
- Temporal lob / hipokampal bölge
  - Asimetrik tutulum / Bilateral asimetrik
- İnferior frontal (orbital giruslar, girus rektus)
- İnsula
- Singulat girus

Herpes ensefaliti

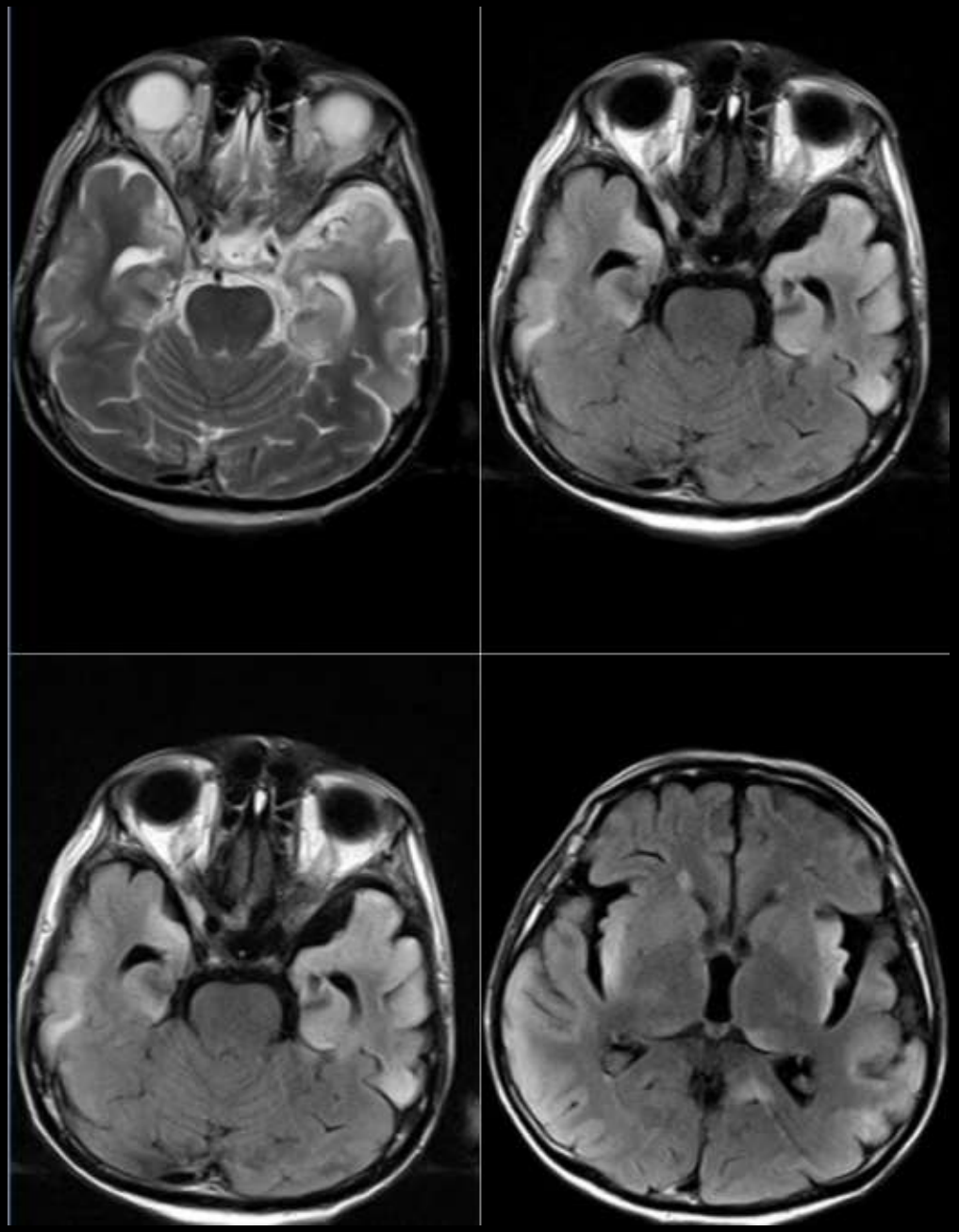
- Bazal ganglia tutulumu yoktur
- Takipte peteşial hemorajik odaklar
- Difüzyon !!
  - Sitotoksik (ADC düşük) kötü prognoz?
  - Vazojenik (ADC yüksek) iyi prognoz?

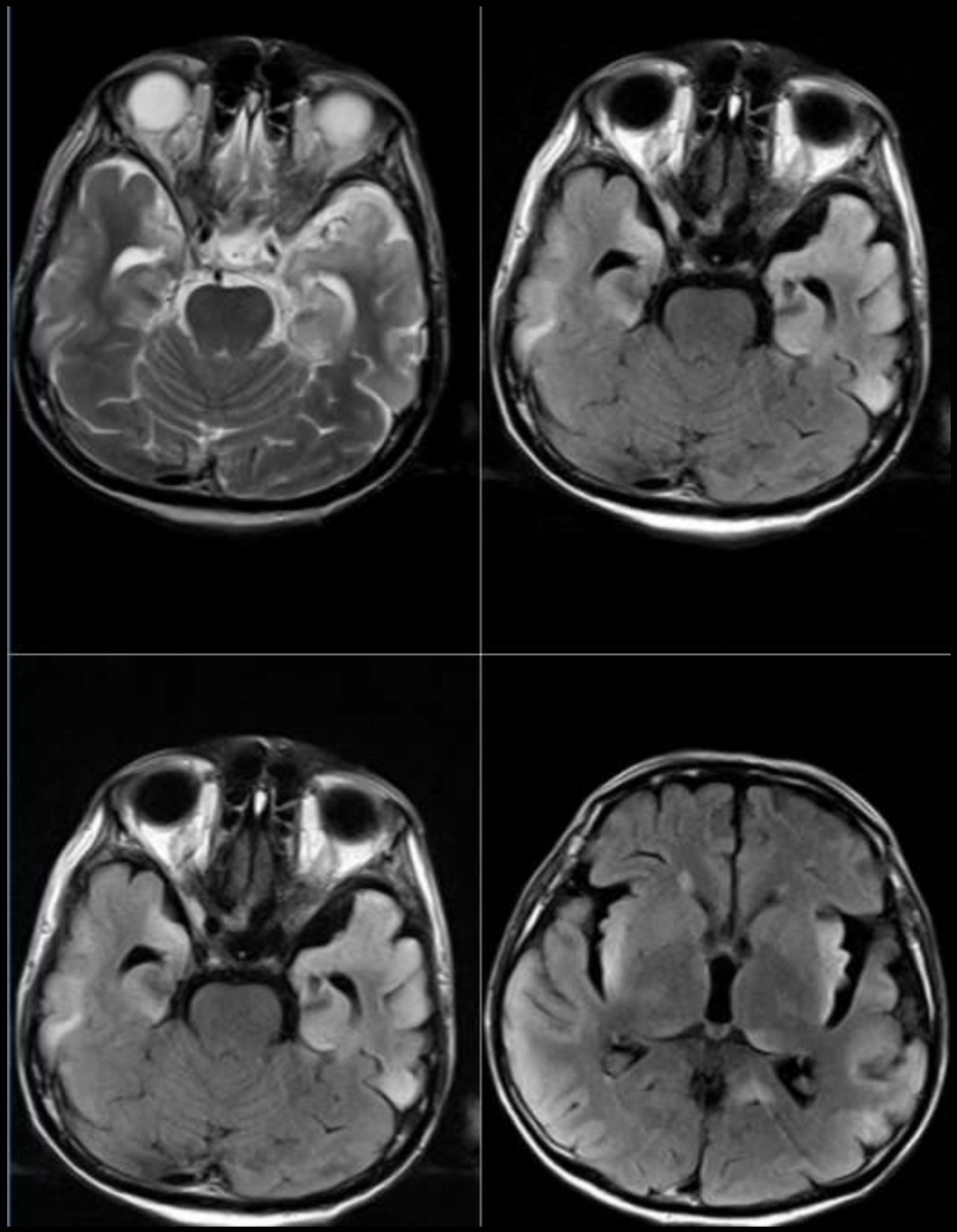
66 y, E, Mide Ca, Konfüzyon, Metastaz??



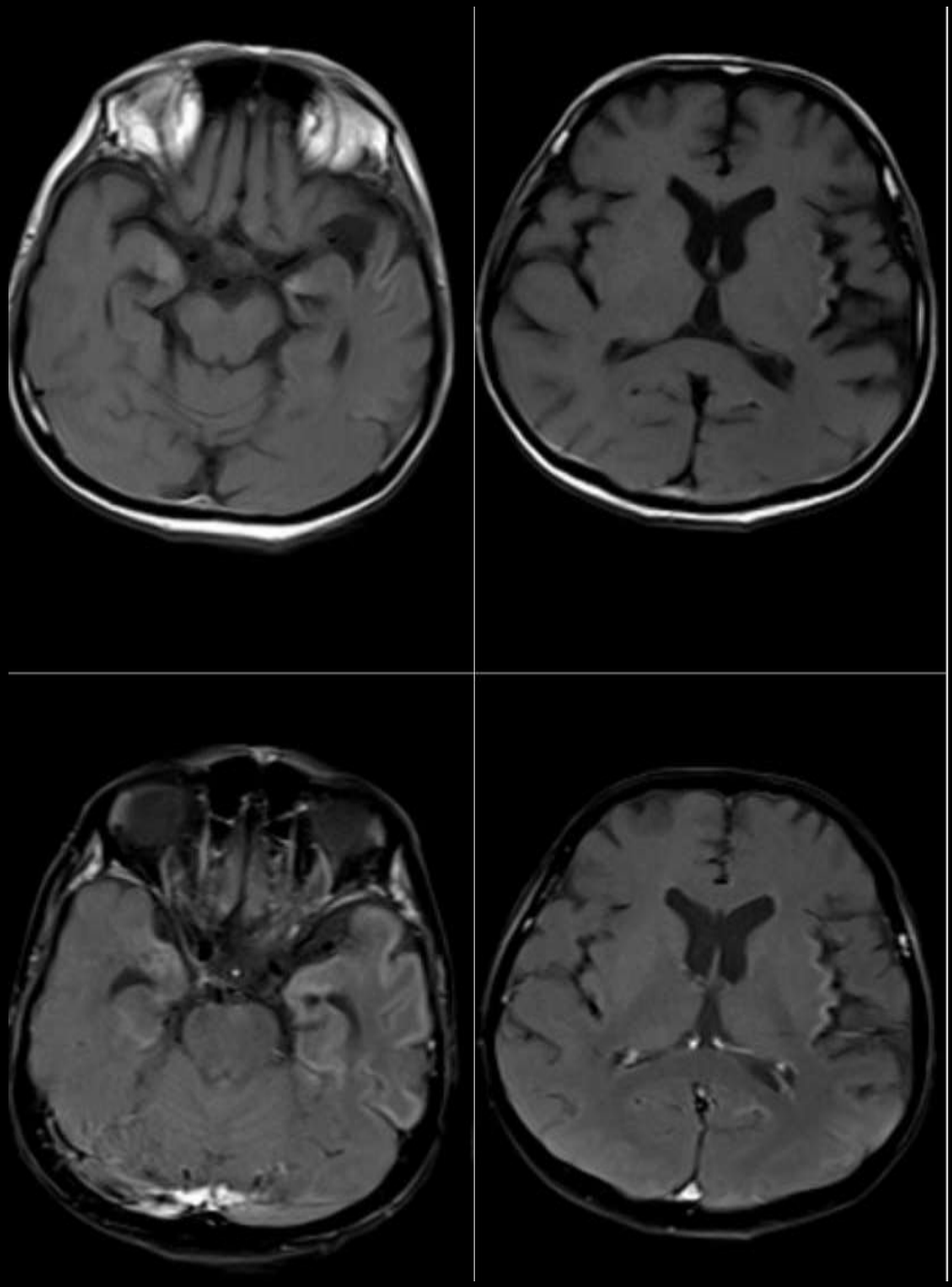


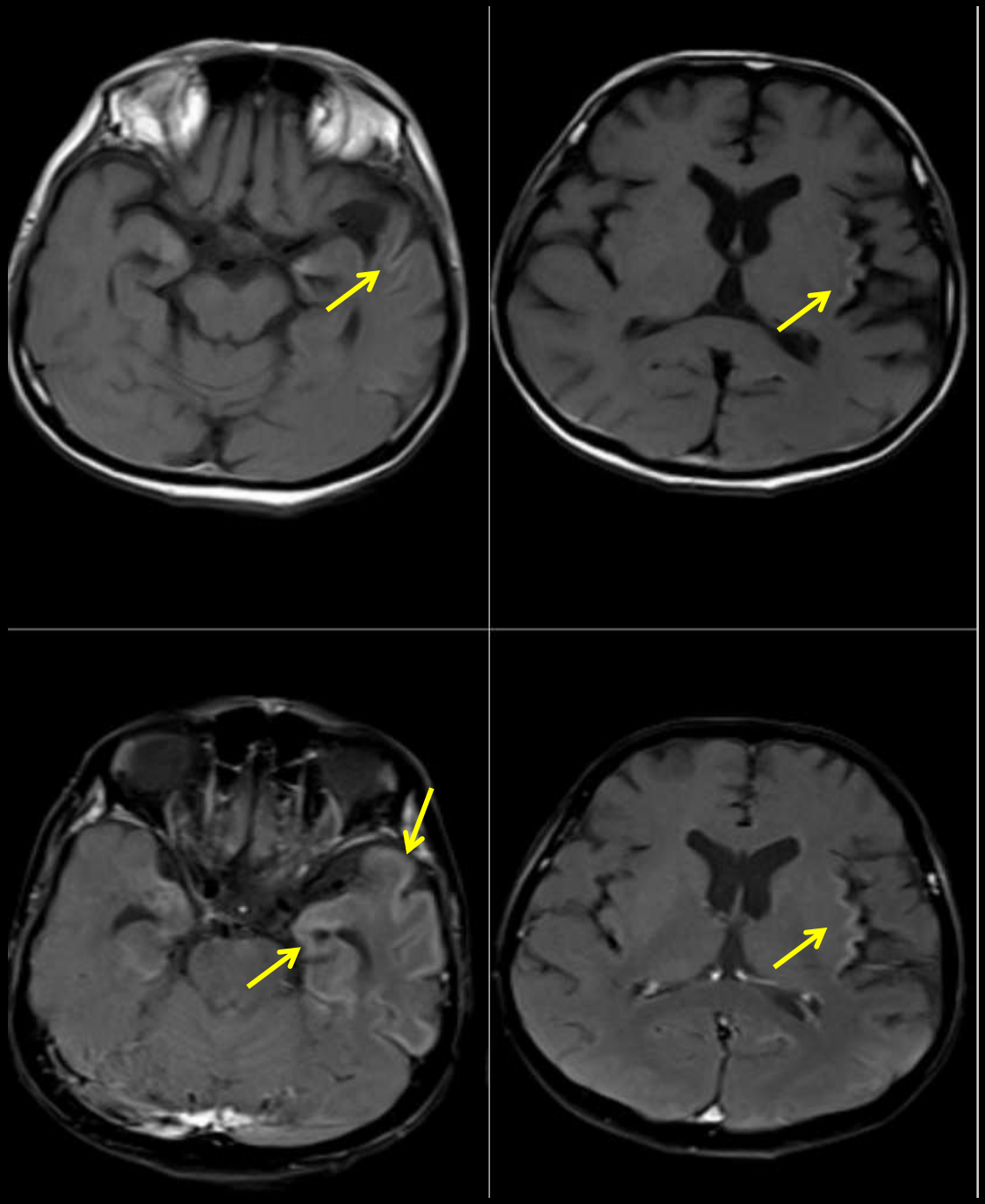
3 hafta
sonraki
izlem MRG



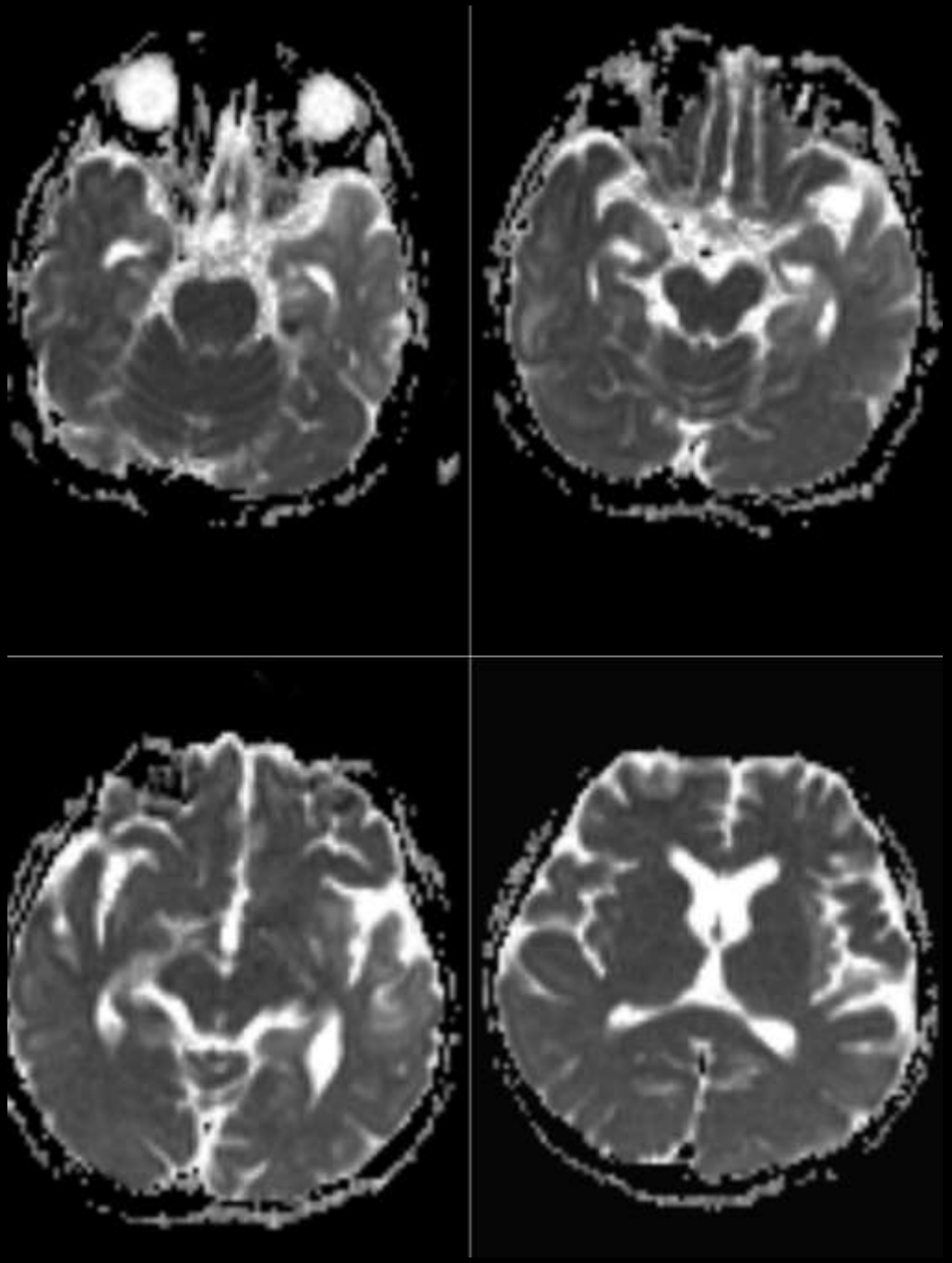


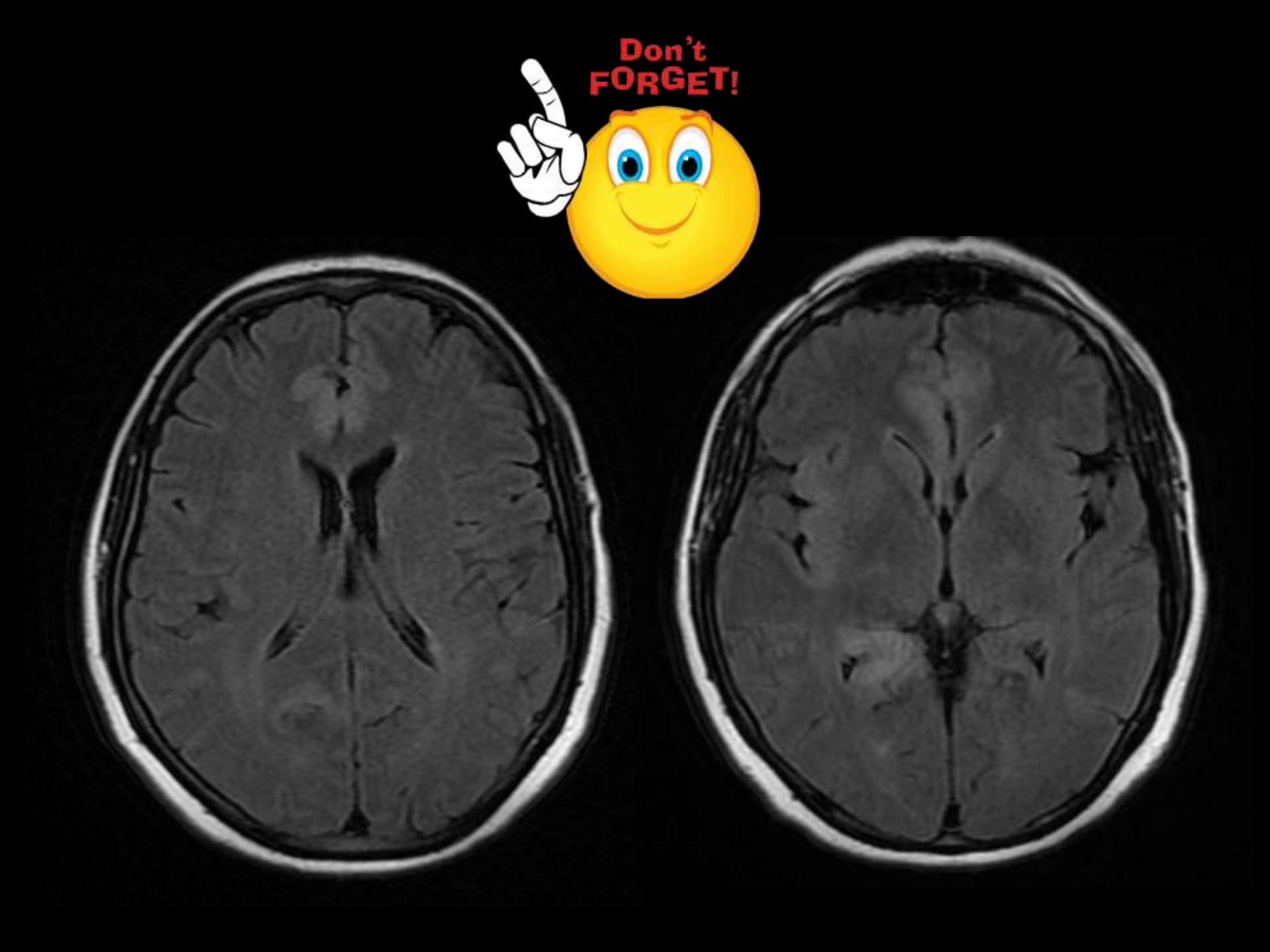
3 hafta
sonraki
izlem MRG





3 hafta
sonraki
izlem MRG




Don't
FORGET!

105. Yıl dönümü