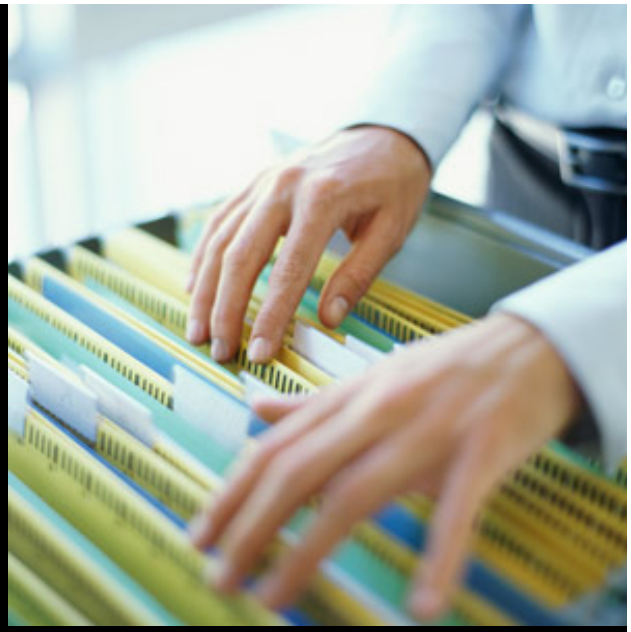
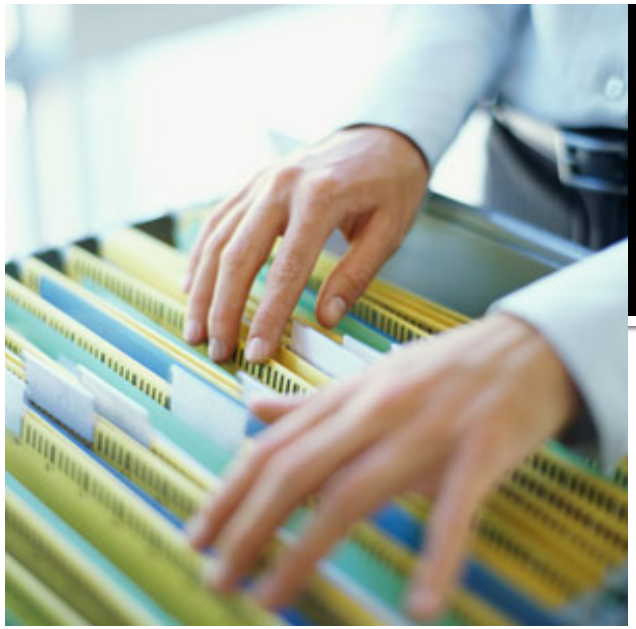


EPILEPSY CASE FILES

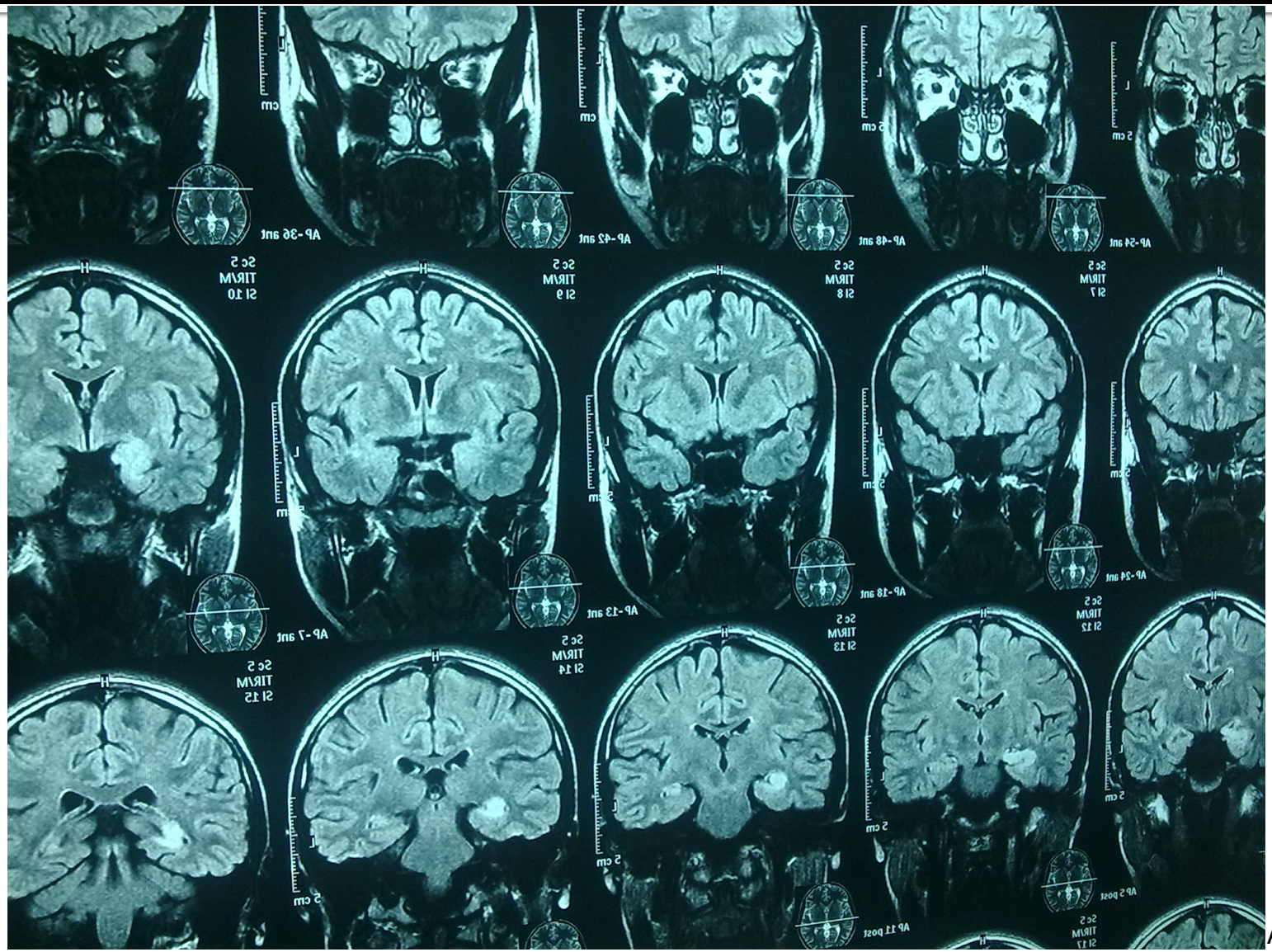
AMR HASSAN M.D.
Associate Professor of Neurology
CAIRO UNIVERSITY



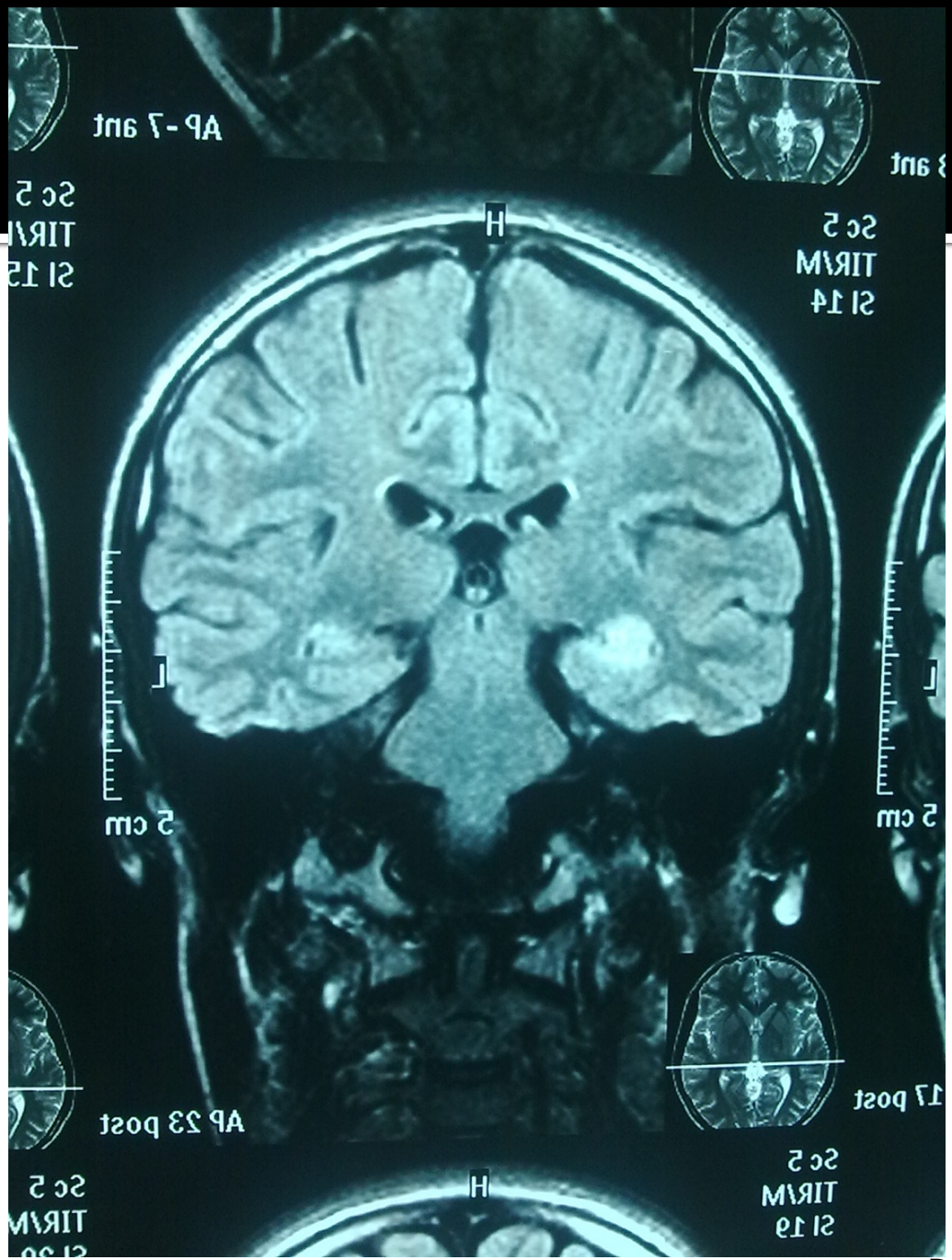
CASE 1

CASE 1

- 22 ys old,Male
- Student.
- Unremarkable past medical history.
- 4 years ago, Recurrent attacks of loss of contact with bizzare behavoiur for around 20-30 minutes.



AL HASANY



DR AMR HASAN AL HASANY

CASE 1

He is on

- CBZ 400 mg twice daily.
- VPA 500 mg twice daily.

- Still uncontrolled with frequency of seizures around 3-4 attacks per week

CASE 1

What do you think?

- Increase dose of CBZ ONLY
- Increase dose of VPA ONLY
- Increase dose of both.
- Consider Adding another AED
- Consider replacing both of them with another AED.
- Consider replacing one of them with another AED.

CASE 1

Which AED would you like to add?

- LEV
- LTG
- OXC
- CNZ
- TPM
- OTHERS

CASE 1

- CBZ was increased gradually to 800 mg twice daily

- But the patient complained of excessive somnlence.

CASE 1

What do you think?

- Increase dose of CBZ ONLY
- Increase dose of VPA ONLY
- Increase dose of both.
- Consider Adding another AED
- Consider replacing both of them with another AED.
- Consider replacing one of them with another AED.

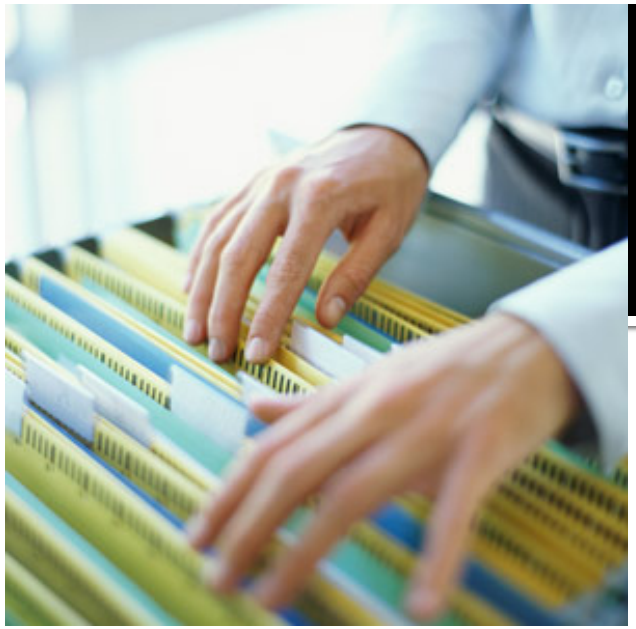
CASE 1

Which AED would you like to add?

- LEV
- LTG
- OXC
- CNZ
- TPM
- OTHERS

CASE 1

- Tiratam 1 gm twice daily was added.
  - With reduction of CBZ dose.
- And the the patient is controlled on triple therapy for 15 month till now.



CASE 2

CASE 2

- Male child, 10 years old
- Unreventful past medical history.
- His mother noticed recurrent attacks of head and eye deviation to the right side associated with clonic movements involving the right upper limb that occur frequently and lasted for few minutes (according to her own words).

CASE 2

- Neurological examination was unremarkable.
- The patient's family could not afford the requested investigations due to financial issues.

CASE 2

Which AED would you like to choose?

- CBZ
- VPA
- LEV
- OXC
- TPM
- OTHERS

CASE 2

Which AED would you like to choose?

- CBZ 200 mg CR bid
- VPA
- LEV
- OXC
- TPM
- OTHERS

CASE 2

What do you think?

- Increase dose of CBZ
- Consider Adding another AED
- Consider replacing CBZ with another AED.

CASE 2

What do you think?

- **Increase dose of CBZ 400 CR mg BID**
- Consider Adding another AED
- Consider replacing CBZ with another AED.

CASE 2

- Again, in the follow up visit, the patient's mother reported no improvement as regard the seizure frequency.

CASE 2

What do you think?

- Increase dose of CBZ
- Consider adding another AED
- Consider replacing CBZ with another AED.

CASE 2

What do you think?

- Increase dose of CBZ
- **Consider adding another AED → LEV 250**

  B I D
- Consider replacing CBZ with another AED.

CASE 2

- In the follow up visit, the patient's mother reported partial reduction in the seizure frequency.

Idiopathic generalized epilepsies with versive or circling seizures

Aguglia, U.; Gambardella, A.; Le Piane, E.; Messina, D.; Russo, C.; Oliveri, R. L.; Zappia, M.; Quattrone, A.

Author Information

Institute of Neurology, School of Medicine, University of Catanzaro, Italy
Dr Umberto Aguglia, Università degli Studi, Clinica Neurologica, Policlinico Materdomini, Via T. Campanella, 88100 Catanzaro, Italy
Accepted for publication November 2, 1998

Abstract

Objectives: To describe the electroclinical features of the idiopathic generalized epilepsies (IGEs) with versive or circling seizures.

Methods: Sixteen patients with versive or circling seizures and interictal electroclinical features of IGE were studied. Patients with insufficient clinical or imaging data, with a follow-up period less than 1 year or with partial seizures in addition to the versive or circling ones were excluded from the study. All patients underwent full interictal clinical and neurophysiological studies. The EEG patterns of 13 versive or circling seizures from 4 patients were also analyzed.

Results: A specific IGE syndrome was recognized in 9 out of the 16 patients (56%). More specific, 1 patient had childhood absence epilepsy (CAE), 4 had juvenile absence epilepsy (JAE), and 4 had juvenile myoclonic epilepsy (JME). No specific IGE syndrome was recognizable in the remaining 7 patients (44%). These 7 patients had a juvenile epileptic syndrome (mean age at onset of seizures was 15.7 years) characterized by versive or circling seizures followed or not by generalized tonic-clonic fits. Three main EEG patterns were identified during versive or circling seizures: 1) generalized spike-and-wave discharges at 3-4 cps; 2) generalized polyspike-and-wave discharges at 1 to 2.5 cps beginning with generalized fast activity at 12-14 cps, and 3) generalized spike-and-wave discharges at 3-4 cps intermingled with fast activity at 12-14 cps. Most patients had good response to treatment on a single drug regimen

Dev Med Child Neurol. 2008 Nov;50(11):850-3. doi: 10.1111/j.1469-8749.2008.03099.x. Epub 2008 Sep 19.

Levetiracetam in absence epilepsy.

Verrotti A[1], Cerminara C, Domizio S, Mohn A, Franzoni E, Coppola G, Zamponi N, Parisi P, Iannetti P, Curatolo P.

Author information

Abstract

The aim of the study was to assess the efficacy, tolerability, and safety of levetiracetam therapy in children and adolescents with absence epilepsy. Twenty-one participants (11 male, 10 female) with typical absence seizures were enrolled in this prospective study from seven centres in Italy. The mean age and age range at time of enrollment into the study were 8 years 9 months (SD 0.9) and 5 years 1 month to 13 years respectively. All patients were carefully evaluated at 6 months from baseline, and 12 patients were also re-evaluated at 12 months after the beginning of therapy with levetiracetam. At the 6-month evaluation, out of 21 patients studied, 11 were seizure free and one showed 'decreased' seizures (more than 50% reduction in seizures). A less than 50% reduction in seizures was observed in nine patients. At the 12-month evaluation, 10 patients were completely seizure free and two were seizure free with some anomalies in electroencephalograms. Two patients who had shown no improvement at 6 months had decreased seizures at the second follow-up. Our results suggest that monotherapy with levetiracetam could be effective and well tolerated in patients with childhood absence epilepsy and juvenile absence epilepsy. Prospective, large, long-term double-blind studies are needed to confirm these findings.

A multicenter, randomized, placebo-controlled trial of levetiracetam in children and adolescents with newly diagnosed absence epilepsy.

Fattore C[1], Boniver C, Capovilla G, Cerminara C, Citterio A, Coppola G, Costa P, Darra F, Vecchi M, Perucca E.

⊕ Author information

Abstract

PURPOSE: To evaluate the potential efficacy of levetiracetam as an antiabsence agent in children and adolescents with newly diagnosed childhood or juvenile absence epilepsy.

METHODS: Patients were randomized in a 2:1 ratio to receive de novo monotherapy with levetiracetam (up to 30 mg/kg/day) or placebo for 2 weeks under double-blind conditions. Responder status (primary end point) was defined as freedom from clinical seizures on days 13 and 14 and from electroencephalographic (EEG) seizures during a standard EEG recording with hyperventilation and intermittent photic stimulation on day 14. The double-blind phase was followed by an open-label follow-up.

KEY FINDINGS: Nine of 38 patients (23.7%) were responders in the levetiracetam group, compared with one of 21 (4.8%) in the placebo group ($p = 0.08$). Seven of 38 patients (18.4%) were free from clinical and EEG seizures during the last 4 days of the trial (including 24-h EEG monitoring on day 14) compared with none of the patients treated with placebo ($p = 0.04$). Seventeen patients remained seizure-free on levetiracetam after 1 year follow-up. Of the 41 patients who discontinued levetiracetam due to lack of efficacy (n = 39) or adverse events (n = 2), 34 became seizure-free on other treatments.

SIGNIFICANCE: Although superiority to placebo just failed to reach statistical significance for the primary end point, the overall findings are consistent with levetiracetam having modest efficacy against absence seizures. Further controlled trials exploring larger doses and an active comparator are required to determine the role of levetiracetam in the treatment of absence epilepsy.

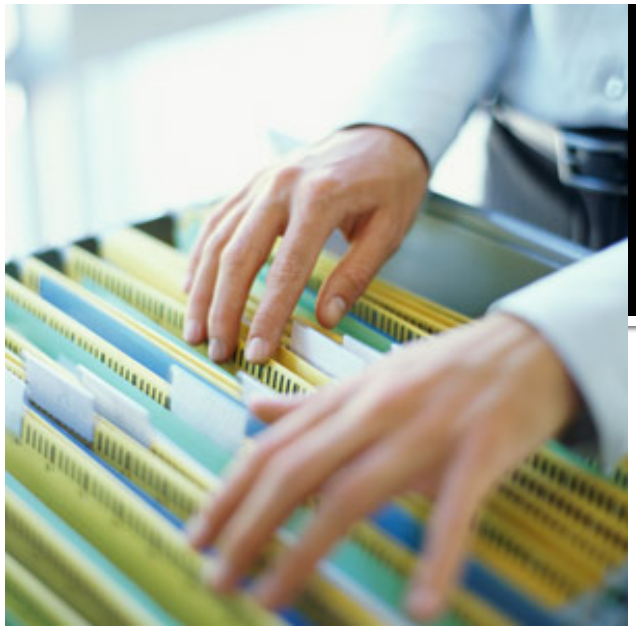
BMJ Best Practice 2014

- A review has found it to be as effective as adjunctive therapy in insufficiently controlled juvenile absence epilepsy (JAE) and JME. [62]

- Another study of 21 patients with absence seizures in the setting of either childhood absence epilepsy (CAE) or JAE did demonstrate efficacy as monotherapy for controlling absence seizures. [63]

BMJ Best Practice 2014

- A syndrome with only typical absence seizures is likely to respond to ethosuximide, valproic acid, or lamotrigine as first-line treatments. Recent evidence suggests that ethosuximide and valproate have significantly greater efficacy than lamotrigine. [40]
- Ethosuximide had a small but significantly lower rate of attentional difficulties than valproate, suggesting that ethosuximide should be considered first-line treatment for CAE. [40]
- **Second-line agents include topiramate, zonisamide, and levetiracetam.**



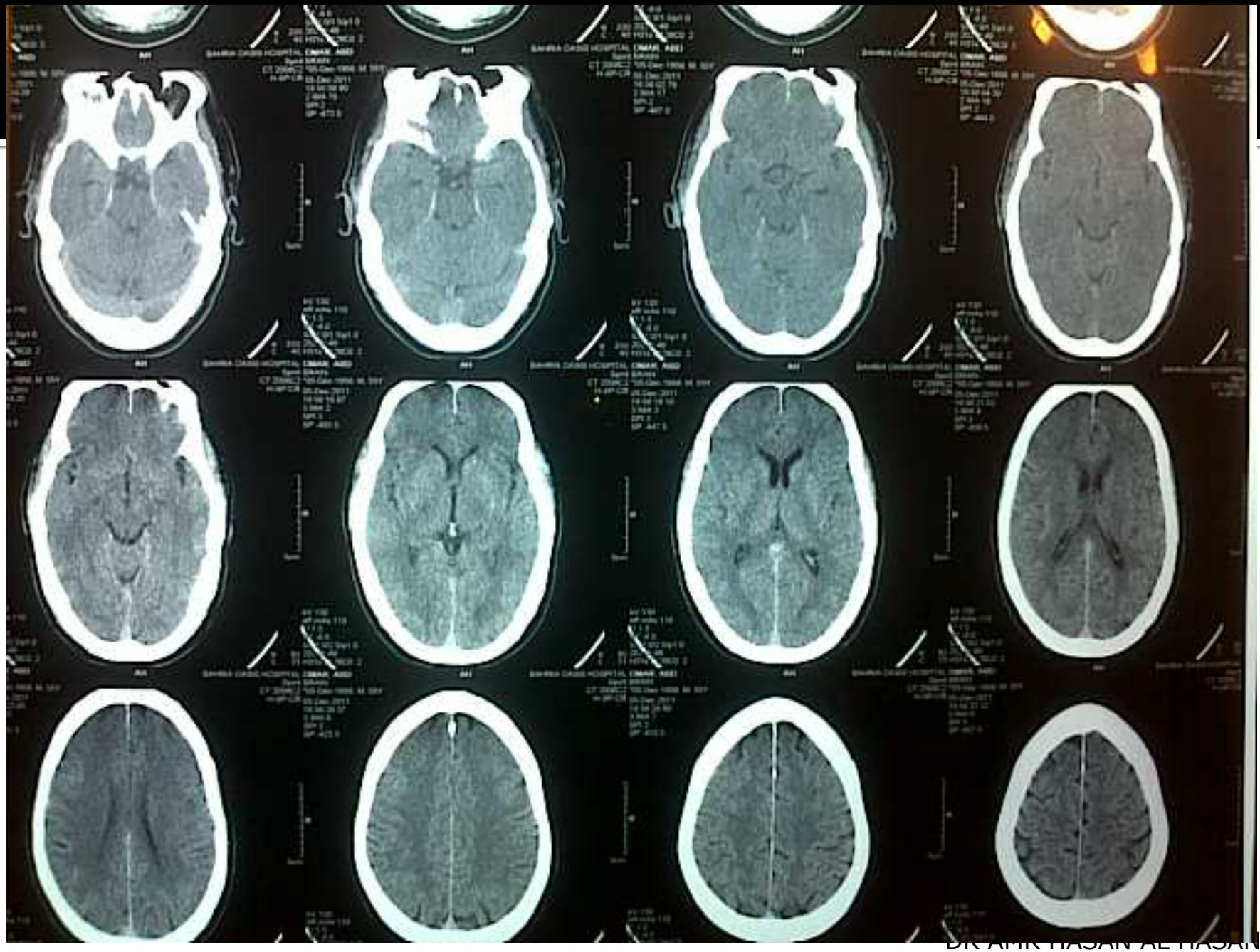
CASE 2

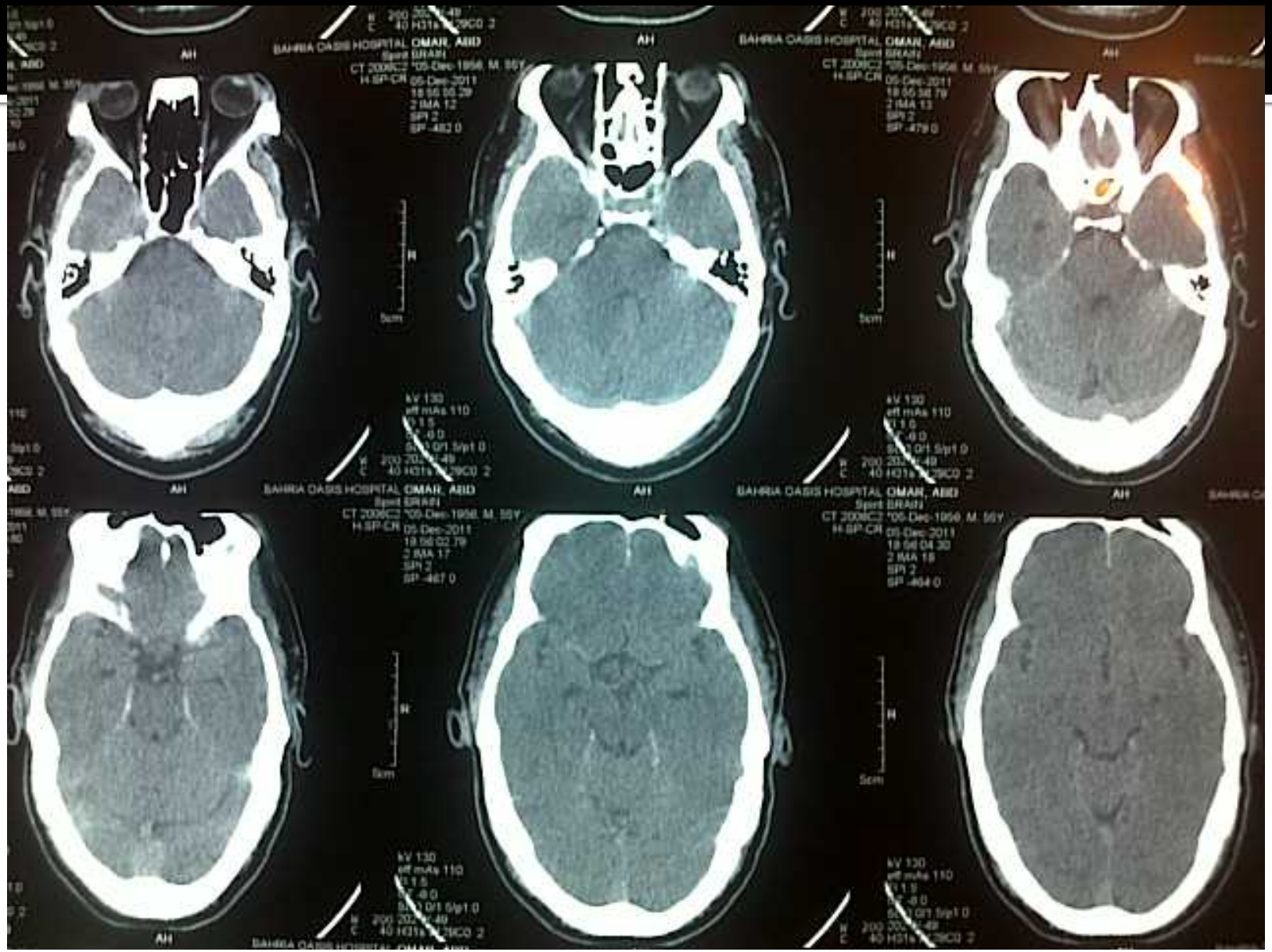
CASE 3

- Male, 61 ysold.
- Was a footballer.
- Not known to be diabetic or hypertensive.
- Presented to the ER in the local hospital with DCL, GTC for the first time.
- Loading epanutin was given after which patient regain consciouness with post-ictal confusion.

CASE 3

- CT Brain was done : normal
- EEG: generalized slowing





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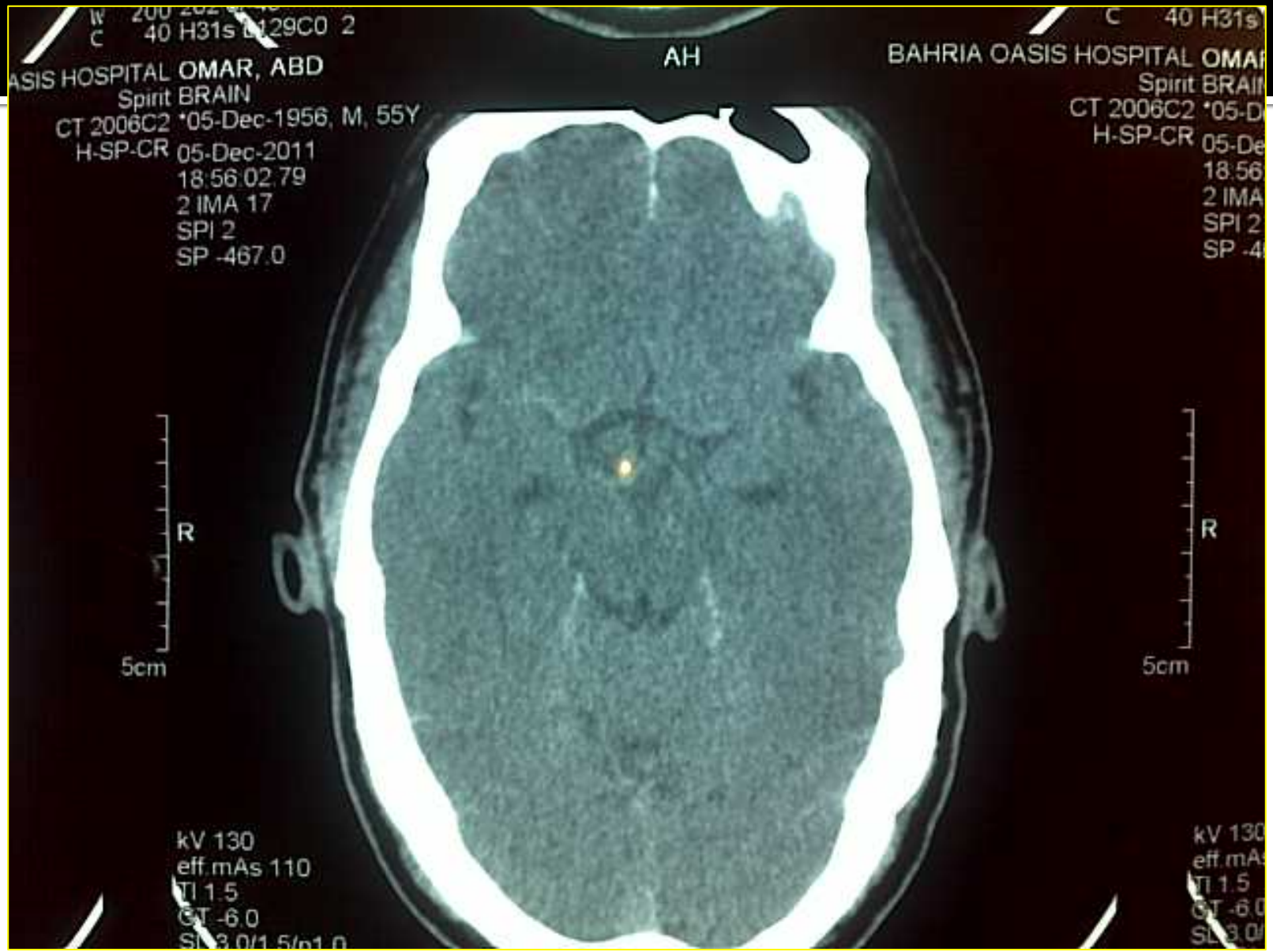
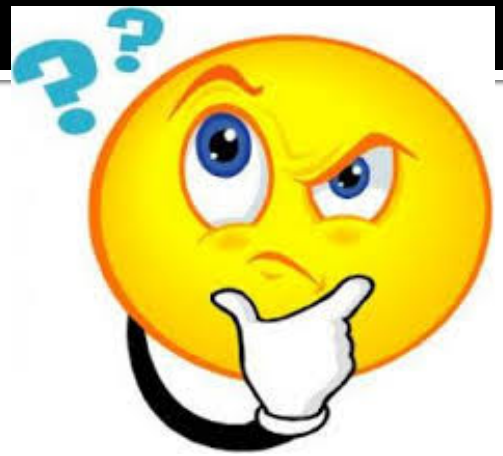


DR AMR HASAN AL HASANY

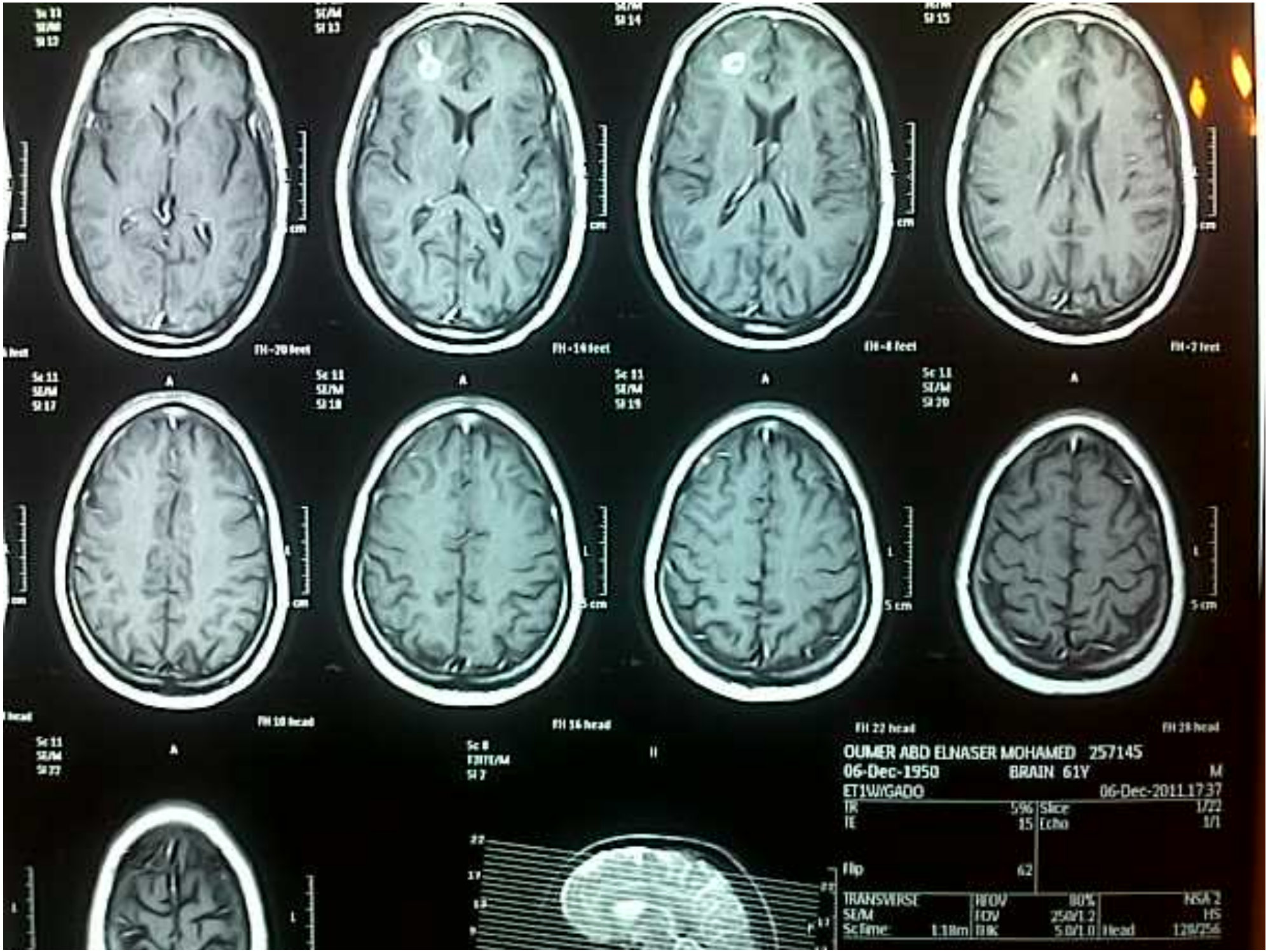


Treat or not to treat?

CASE 3

Which AED would you like to choose?

- CBZ
- VPA
- LEV
- OXC
- TPM
- OTHERS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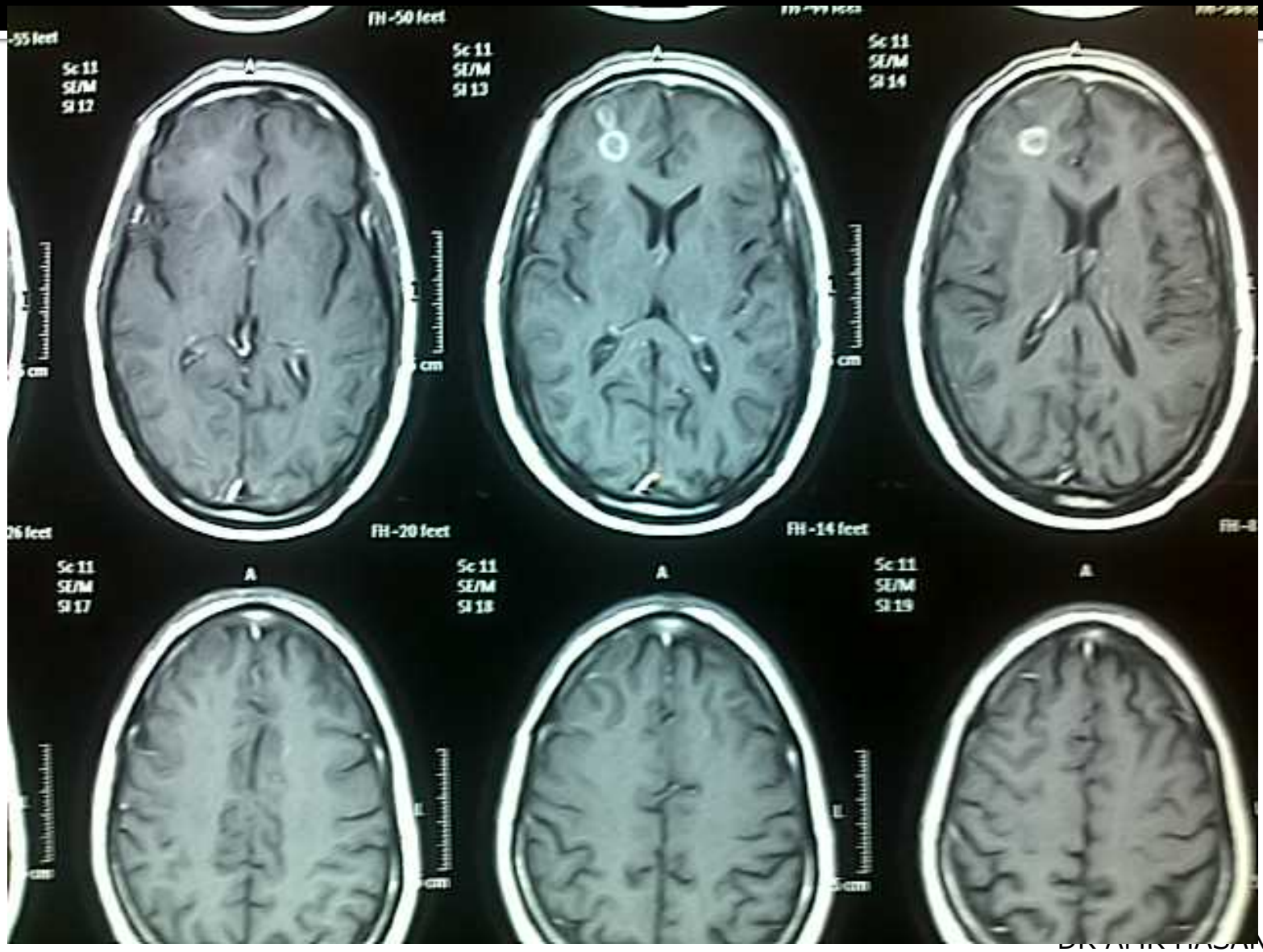
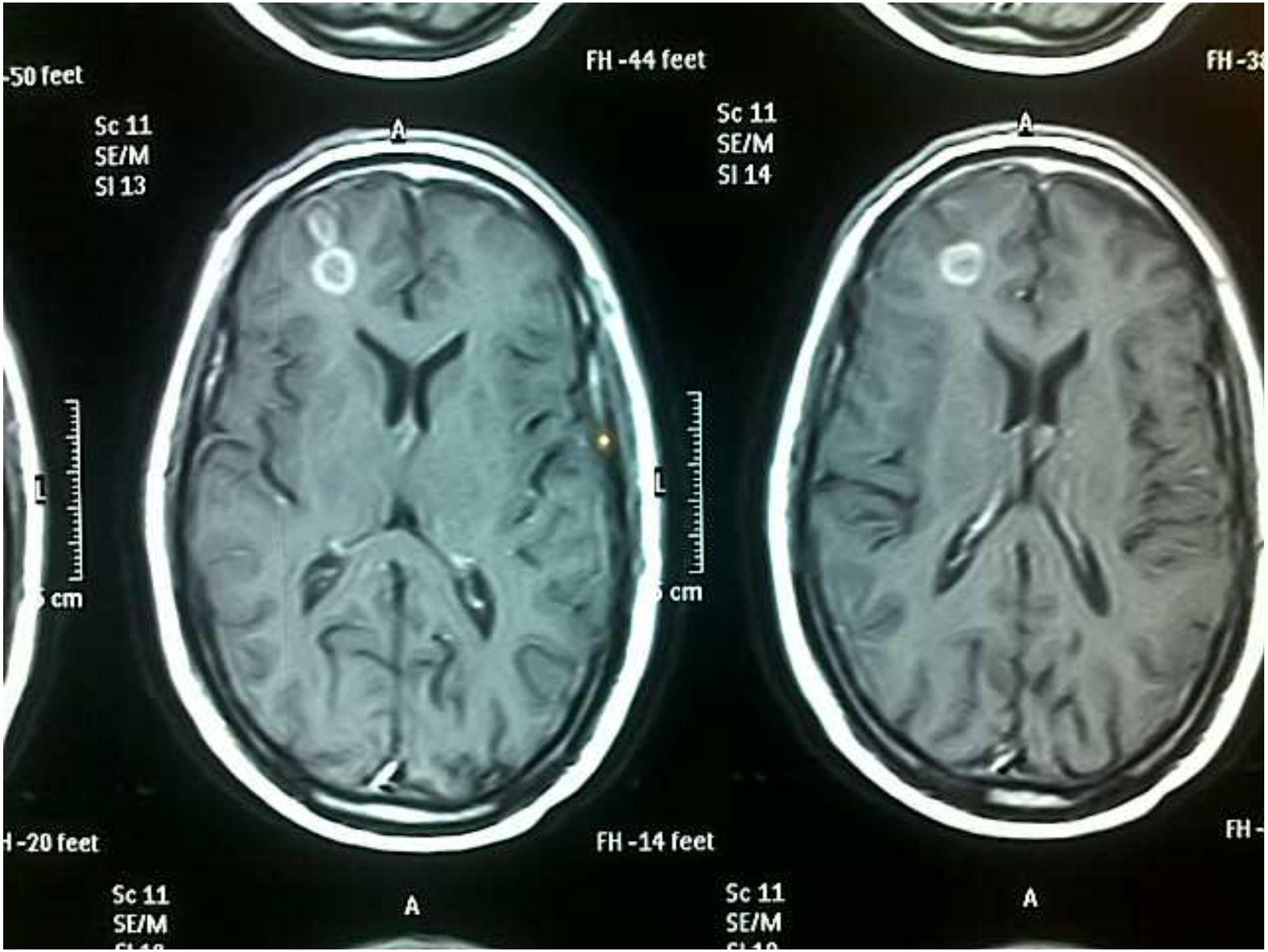
06-Dec-1950 BRAIN 61Y M
ET1WGADO 06-Dec-2011 17:37
TR 596 Slice 1/22
TE 15 Echo 1/1
Flip 62
TRANSVERSE NOV 80%
SE/M FOV 250/1.2
Sc Time 1.18m BW 50/1.0 Head 128/256
NSA 2
HS


FH -50 feet
Sc 11
SE/M
SI 12
Sc 11
SE/M
SI 13
Sc 11
SE/M
SI 14
FH -20 feet
FH -14 feet
Sc 11
SE/M
SI 17
Sc 11
SE/M
SI 18
Sc 11
SE/M
SI 19


-50 feet
FH -44 feet
Sc 11
SE/M
SI 13
A
Sc 11
SE/M
SI 14
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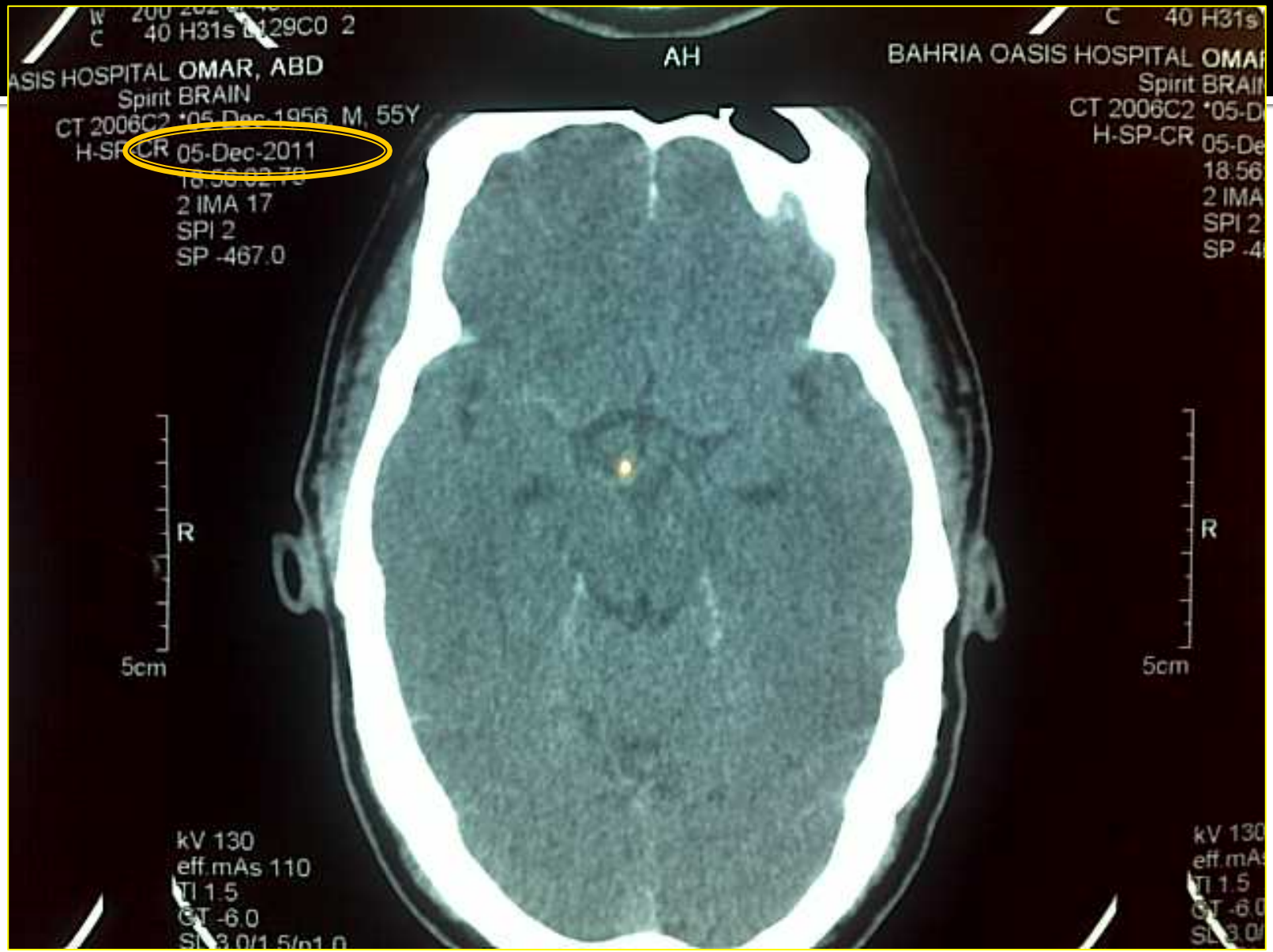
cm
cm
-20 feet
FH -14 feet
Sc 11
SE/M
A
Sc 11
SE/M
A



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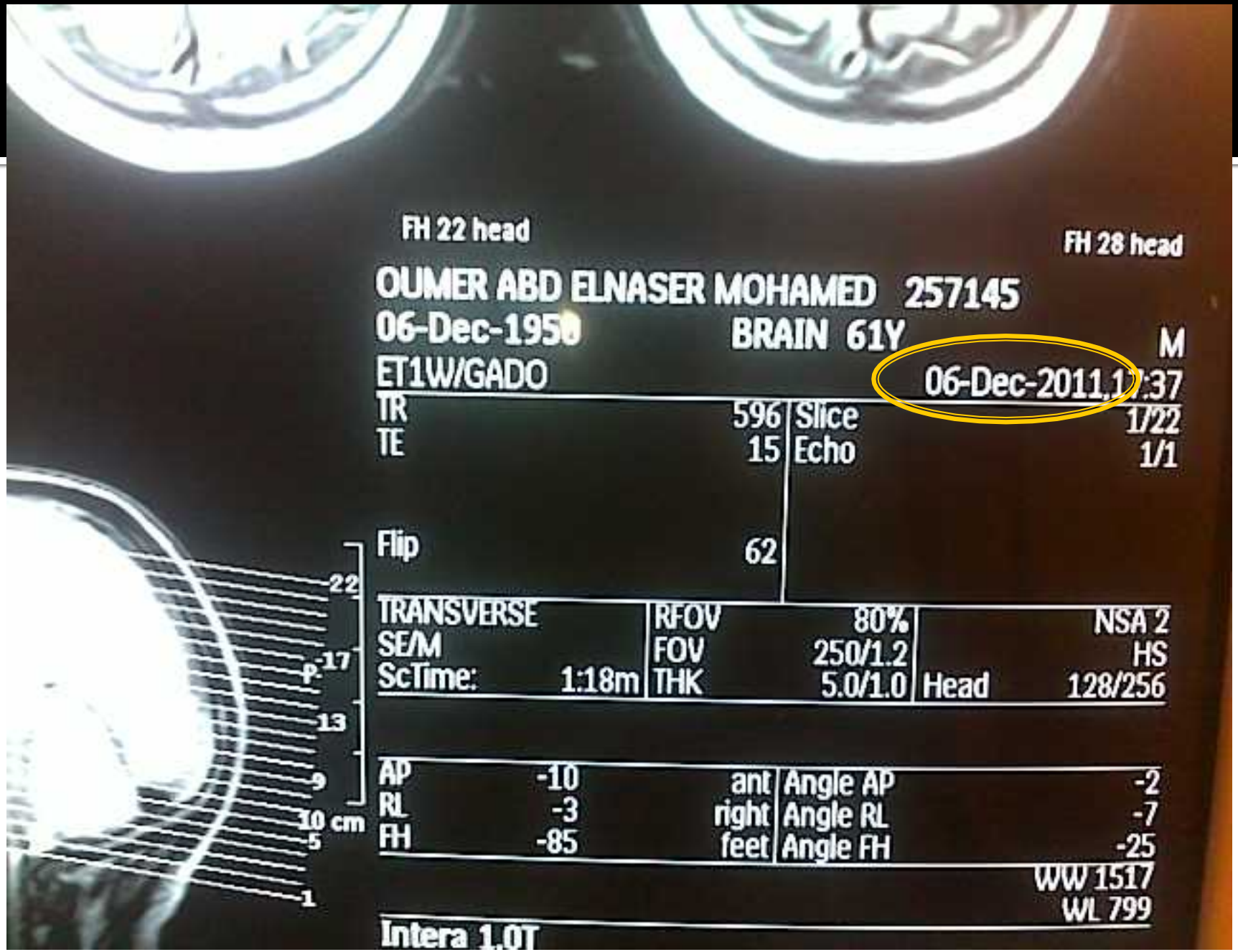


DR AMR HASAN AL HASANY

What do you think?

Granuloma

Tuberculoma

Abcess

Metastasis

Lymphoma

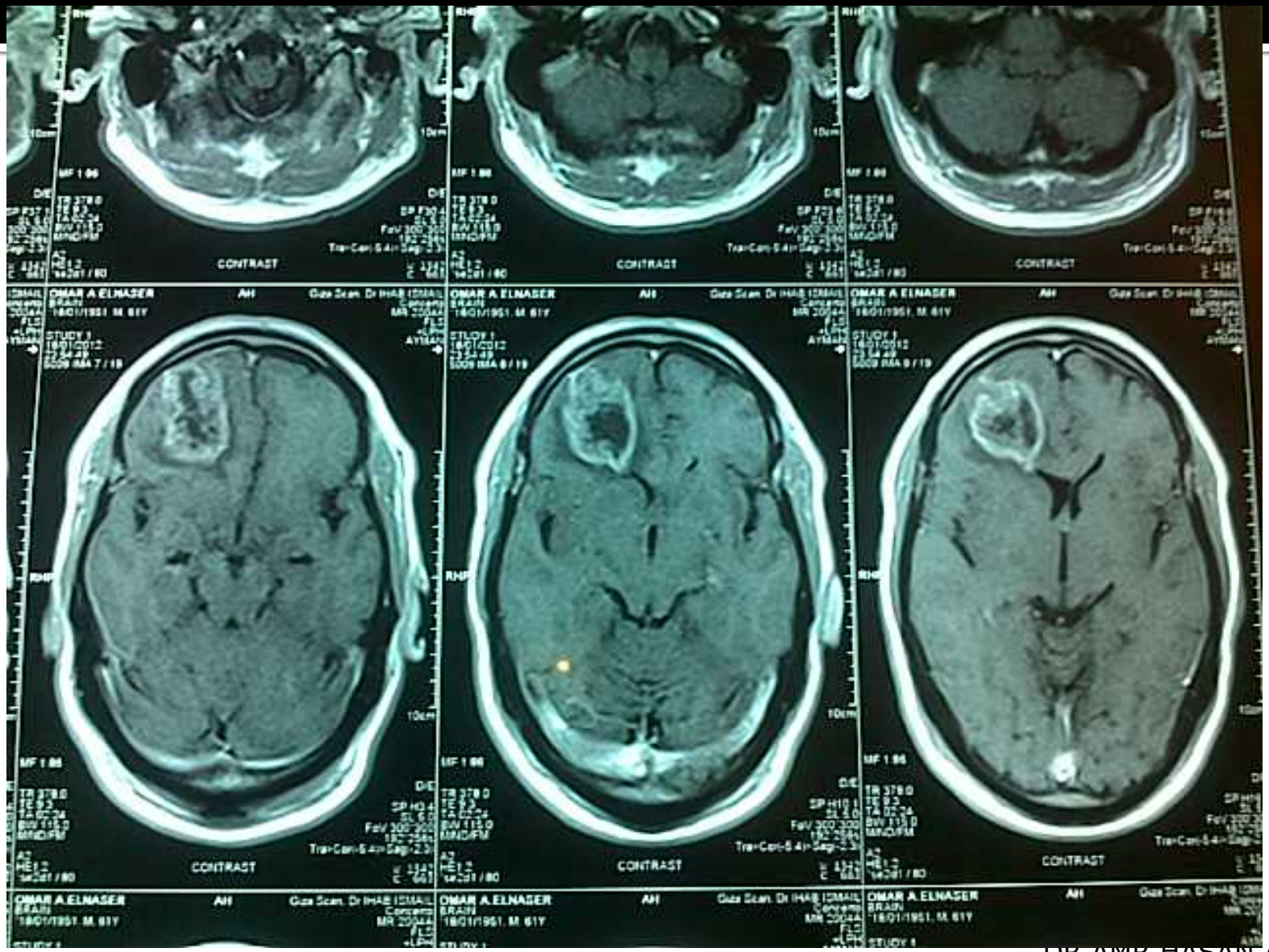
CASE 3

- Metastatic work up was done and it was unrevealing.
- Antituberculous treatment was given.
- LEV 1000 mg twice daily.
- Patient was asked to come after 1 month for follow up.

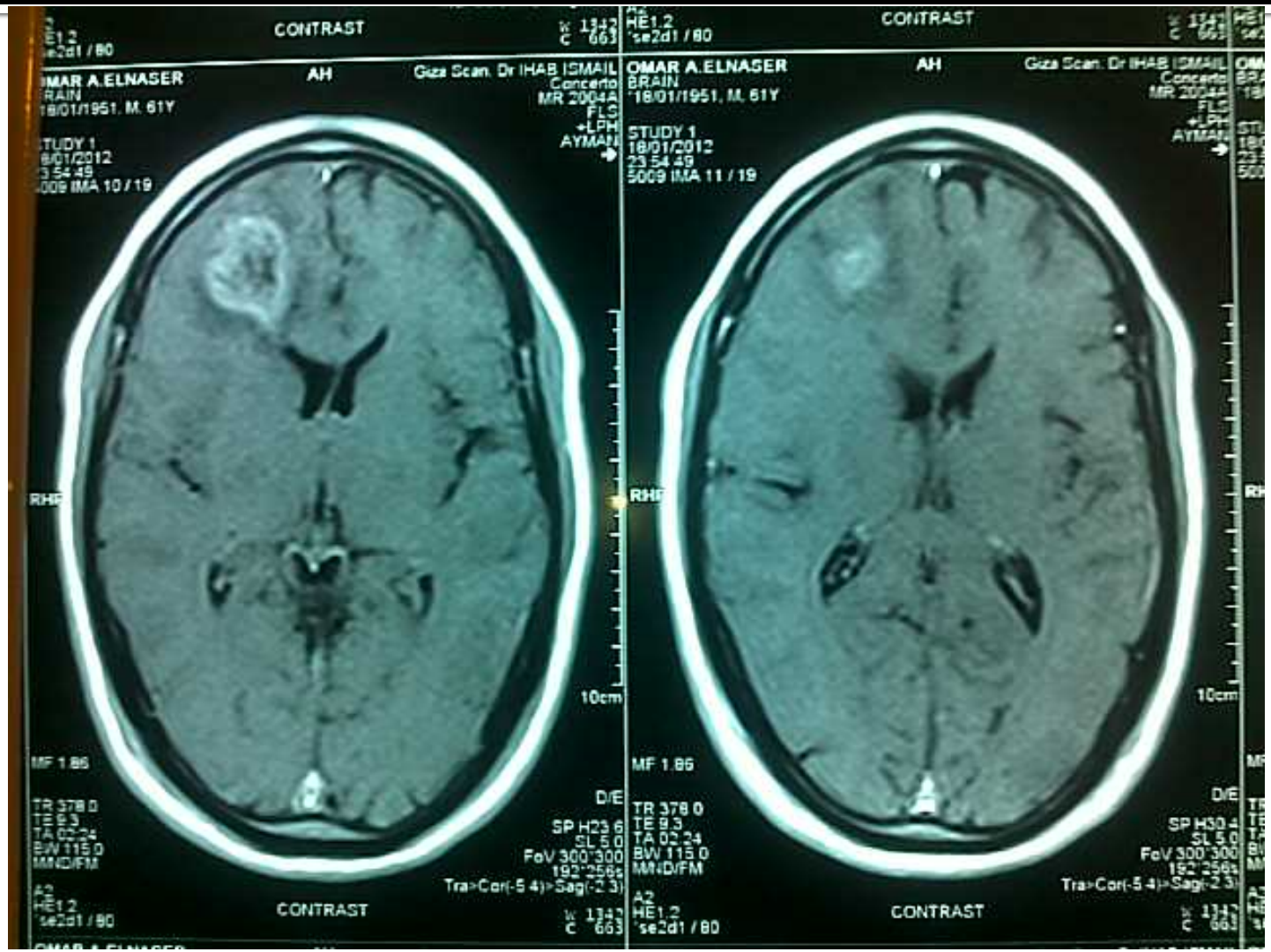
CASE 3

- Patient came in the follow up visit.
  - He looked healthy.
    - He was fit free.

CASE 3



CASE 3



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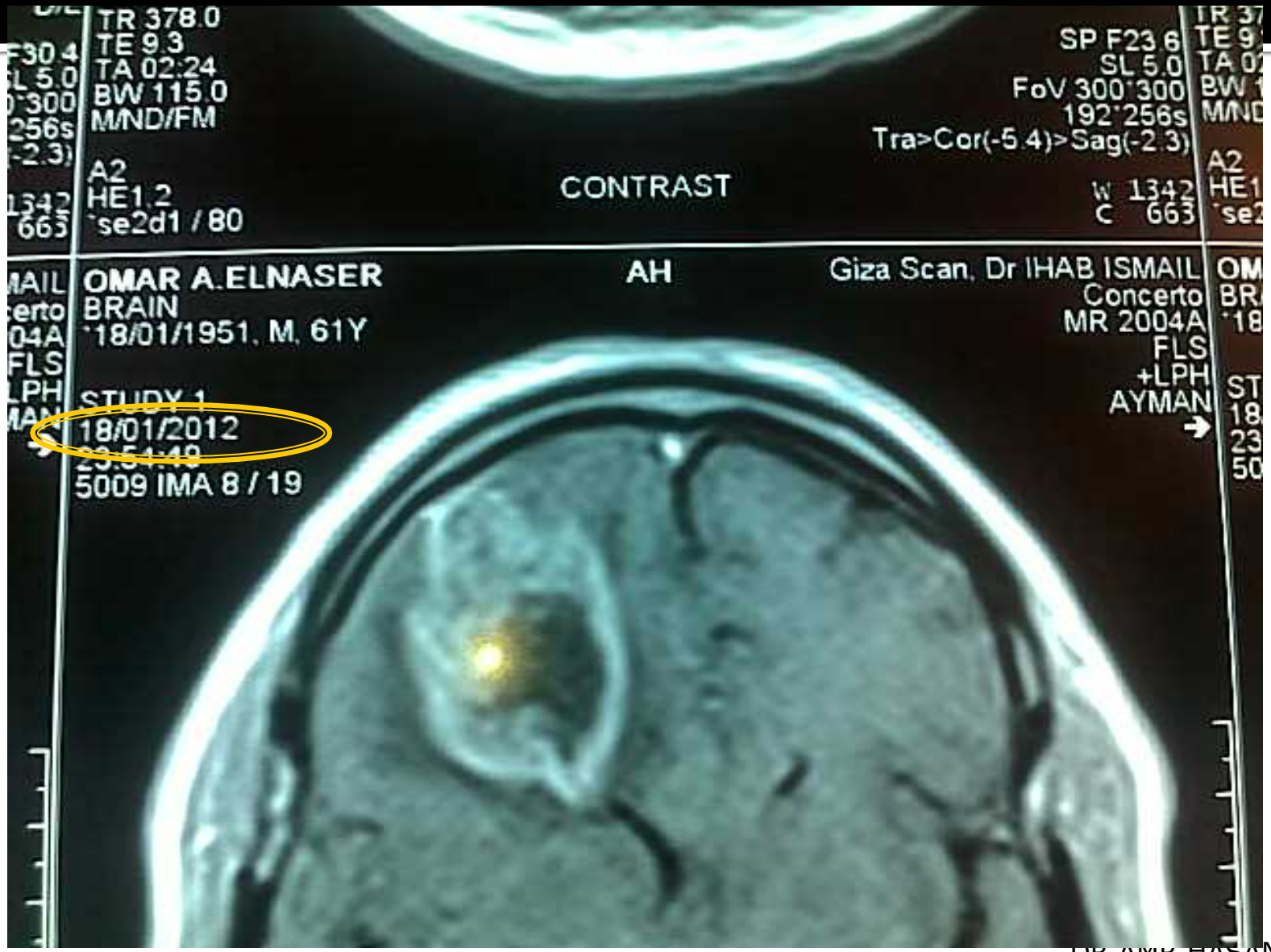
CASE 3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TA 02:24
BW 115.0
M/ND/FM
A2
HE1.2
*se2d1 / 80
CONTRAST
SP F23.6
SL 5.0
FoV 300*300
192*256s
Tra>Cor(-5.4)>Sag(-2.3)
W 1342
C 663
OMAR A.ELNASER
BRAIN
*18/01/1951, M, 61Y
AH
Giza Scan, Dr IHAB ISMAIL
Concerto
MR 2004A
FLS
+LPH
AYMAN
18/01/2012
5009 IMA 8 / 19

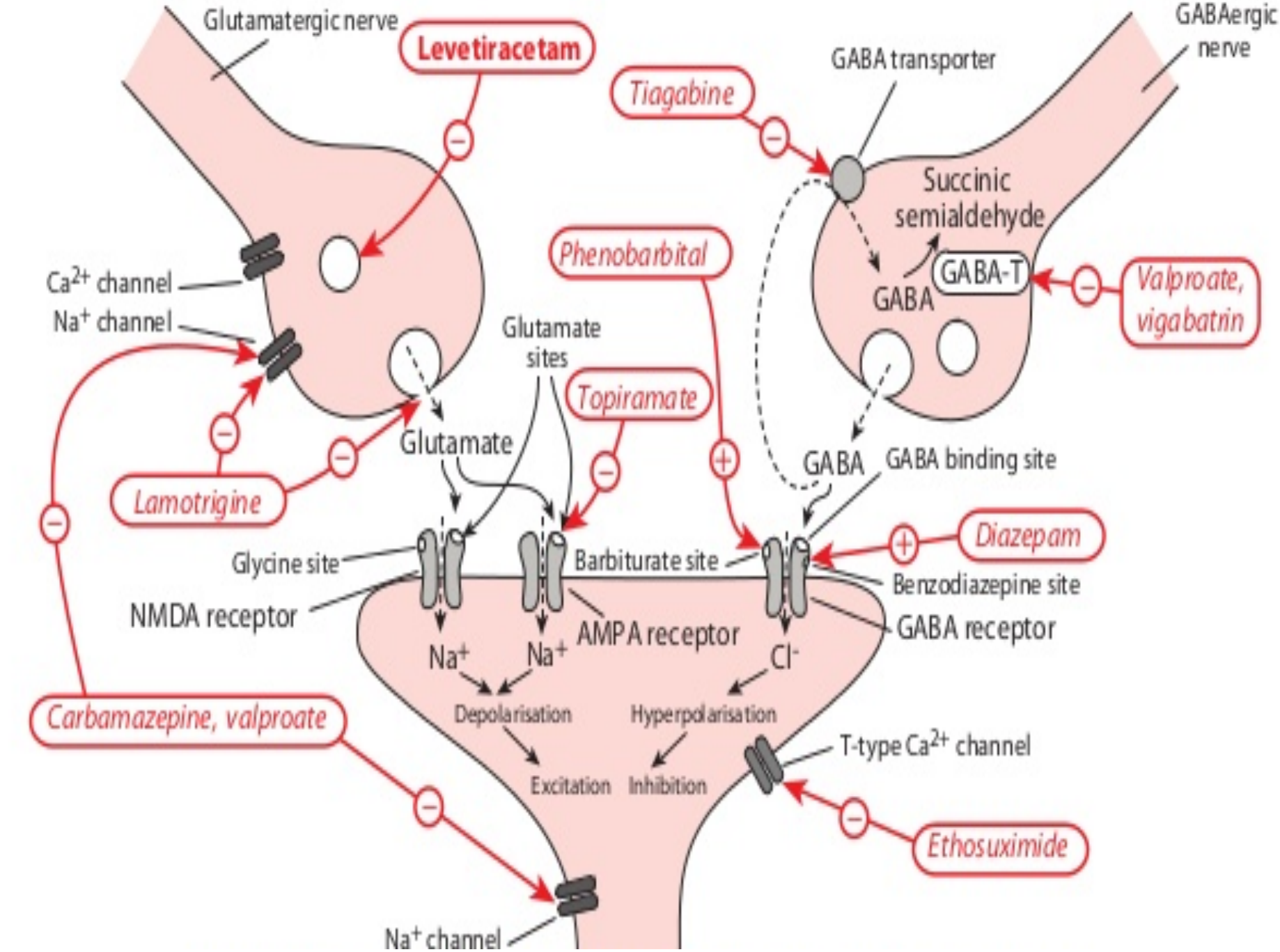
CASE 3

- Biopsy was done and revealed

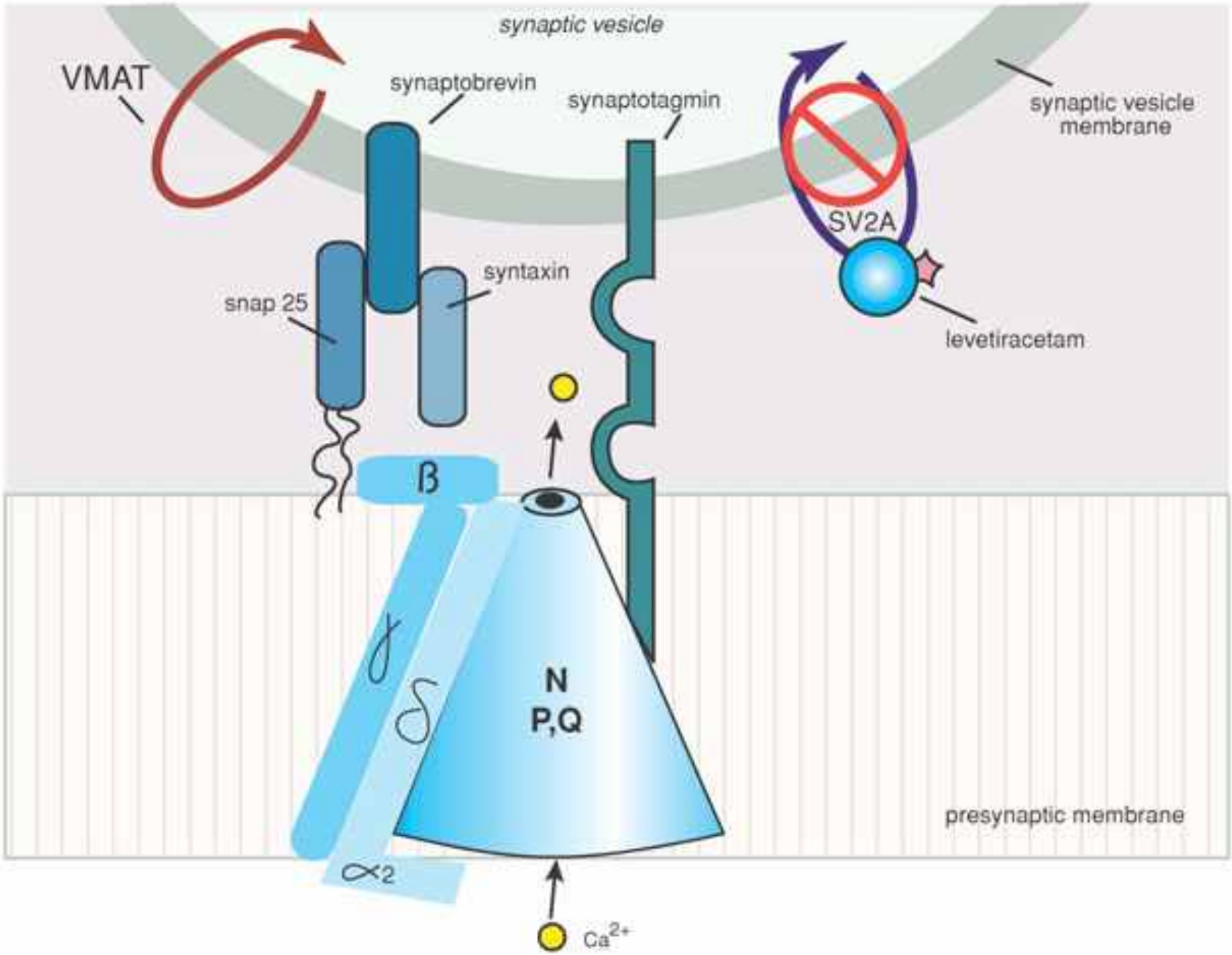
Glioblastoma multifom

levetiracetam	Approval	Formulation	Indication	Population
FDA	1999	Tablet	Partial Onset seizure	Adults with epilepsy
	2003	Solution		Adults
	2005	Tablet & Soln.		Adults; children > 4 years of age
	2006	Tablet & Soln.	Myoclonic seizures	Adults and Pediatric Patients 12 Years and Older with juvenile myoclonic epilepsy
	2007	Tablet & Soln.	Primary Generalized Tonic-Clonic Seizures primary generalized tonic-clonic seizures in	Adults and children 6 years of age and older with idiopathic generalized epilepsy.
EMA	2009	Tablet & Soln.	Partial Onset seizure	Adults And Adolescents 16 years or older in newly diagnosed patients
FDA & EMA	2011	Tablet & Soln.	Partial Onset seizure	Pediatric patients 1 month to 4 years of age

Potential sites of action of antiepileptic drugs

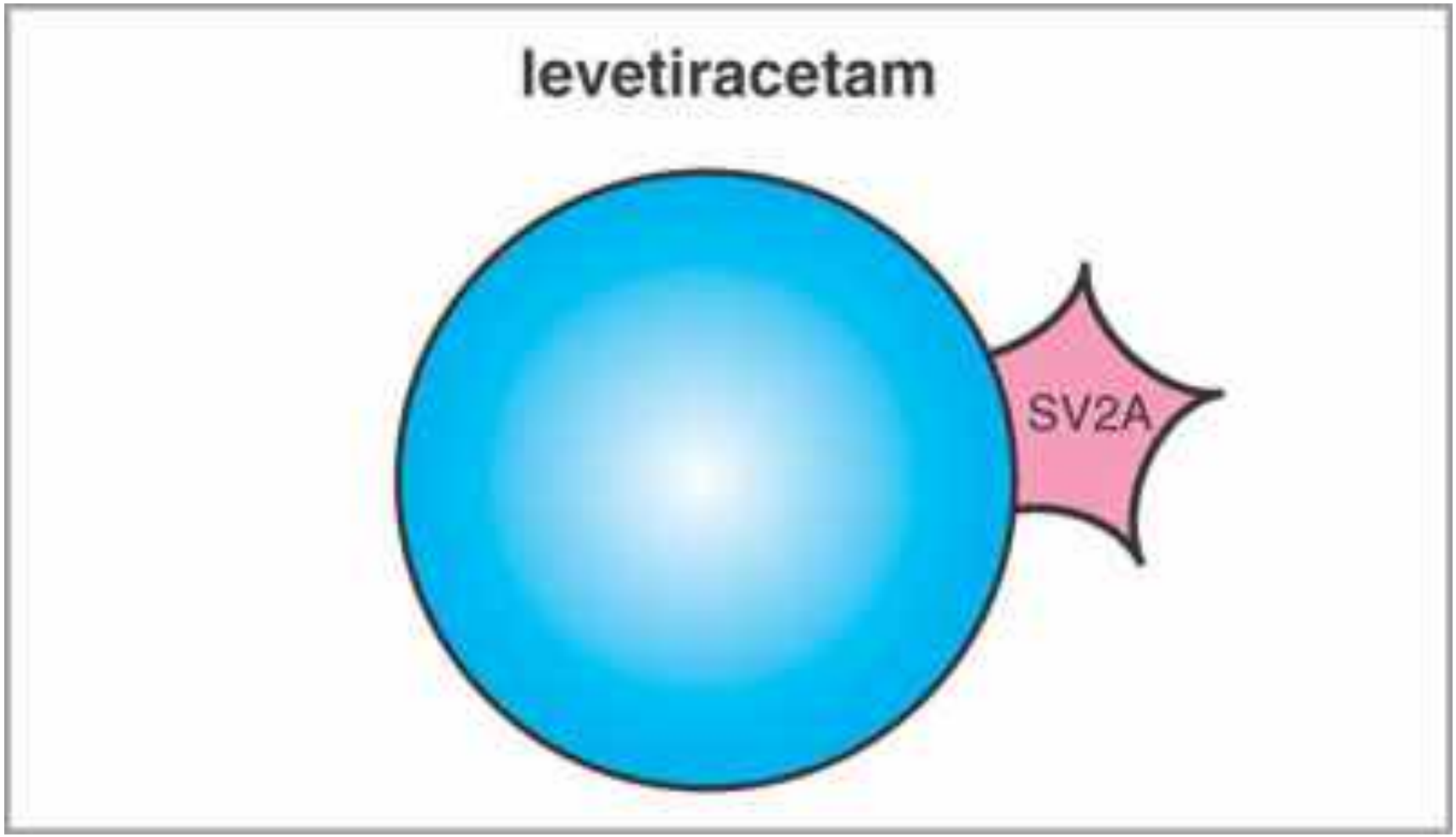


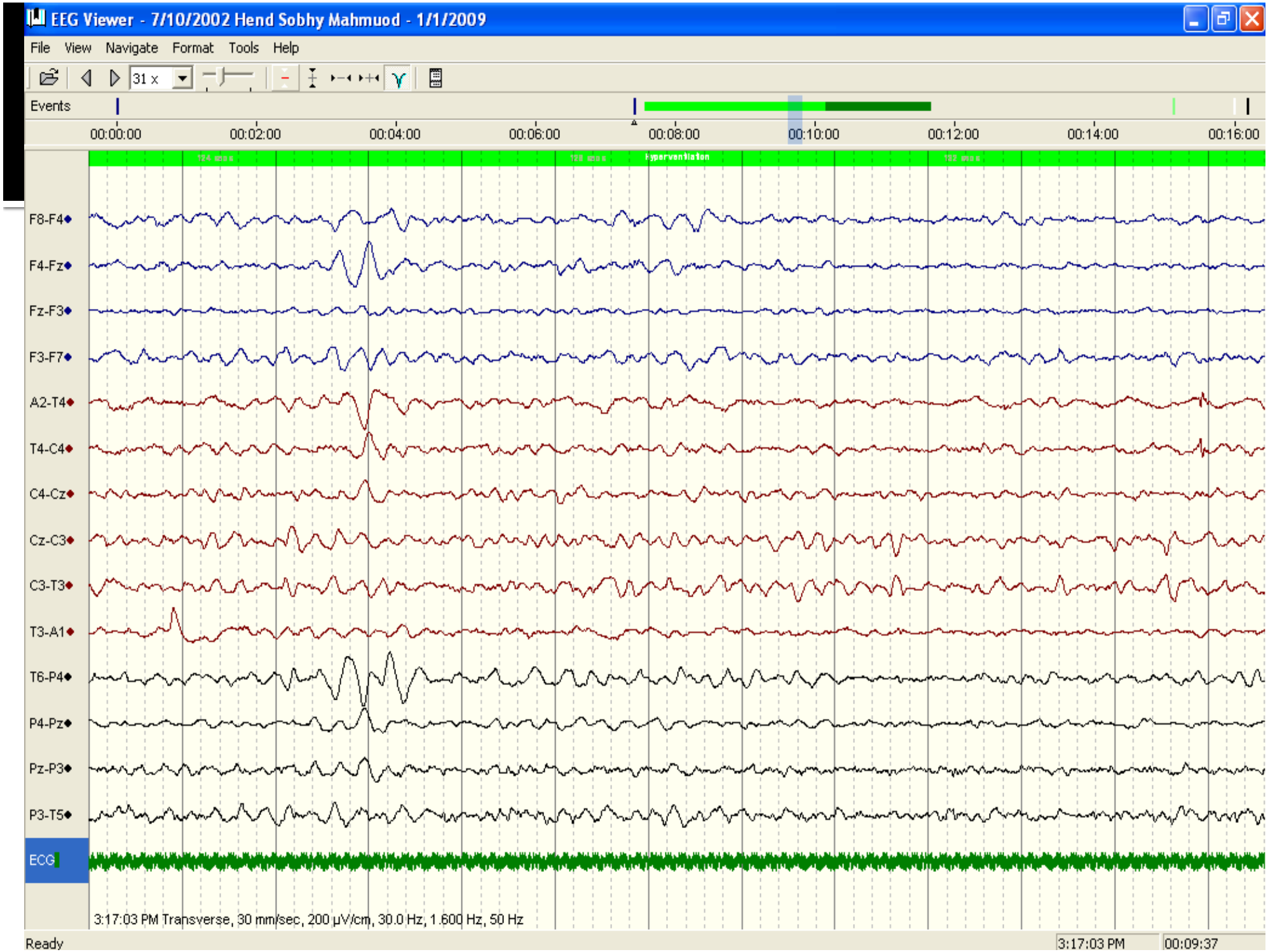
Mechanism of Levetiracetam at SV2A Synaptic Vesicle Sites



mechanism of action

- inhibits a specific high-voltage activated calcium channel, the N-type
- inhibit the release of calcium from intracellular stores .
- oppose the inhibitory action of zinc and beta-carbolines on GABAA- and glycine-gated currents
- inhibits burst firing without affecting normal neuronal excitability
- inhibit hypersynchronization of epileptiform activity, which distinguishes levetiracetam from other AEDs
- stereoselective, saturable and reversible binding site specific for levetiracetam in the CNS,**SV2A**


levetiracetam
SV2A


EEG Viewer - 7/10/2002 Hend Sobhy Mahmuod - 1/1/2009
File View Navigate Format Tools Help
31 x
Events
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00:08:00
00:10:00
00:12:00
00:14:00
00:16:00
Hyperventilation
F8-F4
F4-Fz
Fz-F3
F3-F7
A2-T4
T4-C4
C4-Cz
Cz-C3
C3-T3
T3-A1
T6-P4
P4-Pz
Pz-P3
P3-T5
ECG
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Ready
3:17:03 PM
00:09:37

Epilepsia. 2005 Oct;46(10):1668-76.

Focal semiologic and electroencephalographic features in patients with juvenile myoclonic epilepsy.

Usui N[1], Kotagal P, Matsumoto R, Kellinghaus C, Lüders HO.

Author information

Abstract

PURPOSE: A few reports have described focal electroencephalographic or clinical features or both of juvenile myoclonic epilepsy (JME), but without video-EEG documentation. We examined focal clinical and EEG features in patients with JME who underwent video-EEG monitoring.

METHODS: Twenty-six patients (nine males and 17 females) who had seizures recorded during video-EEG monitoring were included. Age at seizure onset was 0 to 22 years (mean, 12.3 years), and age at monitoring was 12 to 44 years (mean, 26.5 years). In one patient with left parietooccipital epilepsy, primary generalized tonic-clonic seizures developed after resection of the parietal tumor. Two patients had both temporal lobe epilepsy and JME. Videotaped seizures in each patient were analyzed. Interictal and ictal EEG also were analyzed for any focal features.

RESULTS: Focal semiologic features were observed in 12 (46%) of 26 patients. Six patients had focal myoclonic seizures, and two had Figure 4 sign: one with version to the left, and another had left version followed by Figure 4 sign, and left arm clonic seizure. Their ictal EEGs were generalized at onset but with a lateralized evolution over the right hemisphere. The patient who had both JME and left parietooccipital epilepsy, right arm clonic seizure, and Figure 4 sign was seen during a generalized EEG seizure. Interictally, one patient had temporal sharp waves, and another had run of spikes in the right frontal region.

CONCLUSIONS: Fourteen (54%) of 26 patients with JME exhibited focal semiologic or electroencephalographic features or both. Video-EEG was essential in reaching a correct diagnosis and choosing an appropriate antiepileptic drug regimen.

Dr.
Abdalla M. Khalil
Professor of Pathology
Faculty of Medicine
Kasr El-Aini

دكتور
عبدالله محمود خليل
استاذ الباثولوجي – كلية طب قصر العيني
مستشار الباثولوجيا بمعهد السرطان القومي
عضو الاكاديمية الباثولوجيا الدولية

Patient Name: احلام عادل صالح

Referred by Prof. Dr.: W. ABBAS

Nature of the Specimen: REFERRED SLIDE

Clinical Diagnosis: S.O.L.

Receiving Date: May. / 2014 Code Number: L 79

PATHOLOGY REPORT
FIRST REPORT

GROSS PATHOLOGY:
Referred slide labelled with patient's name in Arabic for histological *examination . The slide* was examined reported and re-enclosed.

HISTOLOGY:
Sections revealed neuropil made up of proliferating astrocytes with mild to moderate cellular atypia within fibrillary background, focally exhibiting microcys changes. Vascular or necrotic changes are absent.

DIAGNOSIS:
ASTROCYTOMA (G2) WITH EARLY MICROCYSTIC CHANGES.
THE REFERRED SLIDE RE-ENCLOSED.

COMMENT:
Please correlate with the clinical and radiological findings.

HASAN AL HASANY

Dr.
Abdalla M. Khalil
Professor of Pathology
Faculty of Medicine
Kasr El-Aini

دكتور
عبدالله محمود خليل
استاذ الباثولوجي - كلية طب قصر العيني
مستشار الباثولوجيا بمعهد السرطان القومي
عضو اكاديمية الباثولوجيا الدولية

Patient Name: احلام عادل صالح احمد

Referred by Prof. Dr.: A. HASSAN

Nature of the Specimen: REFERRED SLIDES

Clinical Diagnosis: BRAIN LESION

Receiving Date: May. / 2014 Code Number: M 27

PATHOLOGY REPORT
SECOND REPORT

GROSS PATHOLOGY:
Two referred slides, labelled by patient's name in Arabic and one of them is sublabelled as (PAS). They are reported and re enclosed back.

HISTOLOGY:
Sections examined revealed multiple tumour tissue fragments, of proliferating astroglial cells, with mild to moderate nuclear pleomorphism, exhibiting focal vacuolization displayed upon fibrillary background with microcystic changes. Focal devitalization was noted. The vascularity was increased with no evident endothelial vascular proliferation. No brisk mitosis seen. The PAS stained slide was inconclusive.

DIAGNOSIS:
FEATURE KEEPING WITH ASTROCYTOMA GRADE II
(REFERRED TWO SLIDES RE ENCLOSED)

COMMENT:
1- The lesion is identical for the pathology of the local recurrence reported in the previously issued report with the code number L 79
2- Please correlate with the clinical, radiologic, operative findings and all data available.

HASAN AL HASANY

Dr.

ELIA ANIS ISHAK

M. Sc. Ph. D. Pathology - Prof. of Pathology
Fellow, Armed Forces Institute of Pathology
Member, United States Canadian Academy of Pathology

دكتور

ايليا انيس اسحق

استاذ الباثولوجيا - كلية طب القصر العيني
زميل معهد الباثولوجيا للقوات المسلحة الأمريكية
عضو الأكاديمية الباثولوجيا للولايات المتحدة و كندا

Receiving Date: 22/05/2014

Patient Name : احلام عادل صالح

Age: 16Y **Sex:** female

Referred By Prof. Dr. :

Clinical Diagnosis: Brain SOL

Nature Of The Specimen: Biopsy

Delivery Date: 24/05/2014

PATHOLOGY REPORT

Gross :

Pieces of soft greyish pink tissue measured 0.5x0.5 cm, totally submitted.

Microscopic:

Sections examined from the specimen received revealed pieces of tumour tissue moderate cellular formed of astrocytes showing moderate nuclear pleomorphism and moderate hyperchromasia scattered within eosinophilic fibrillary matrix. There are pieces of oedemat tissue.
No vascular changes.
No necrosis.

Diagnosis:

Brain SOL, Biopsy, ASTROCYTOMA, WHO GRADE II.

HASAN AL HASANY

Dr.
Abdalla M. Khalil
Professor of Pathology
Faculty of Medicine
Kasr El-Aini

دكتور
عبدالله محمود خليل
استاذ الباثولوجي - كلية طب قصر العيني
مستشار الباثولوجيا بمعهد السرطان القومي
عضو اكاديمية الباثولوجيا الدولية

Patient Name: احلام عادل صالح احمد

Referred by Prof. Dr.: A. HASSAN

Nature of the Specimen: REFERRED SLIDES

Clinical Diagnosis: BRAIN LESION

Receiving Date: May. / 2014 Code Number: M 27

PATHOLOGY REPORT
SECOND REPORT

GROSS PATHOLOGY:
Two referred slides, labelled by patient's name in Arabic and one of them is sublabelled as (PAS). They are reported and re enclosed back.

HISTOLOGY:
Sections examined revealed multiple tumour tissue fragments, of proliferating astroglial cells, with mild to moderate nuclear pleomorphism, exhibiting focal vacuolization displayed upon fibrillary background with microcystic changes. Focal devitalization was noted. The vascularity was increased with no evident endothelial vascular proliferation. No brisk mitosis seen. The PAS stained slide was inconclusive.

DIAGNOSIS:
FEATURE KEEPING WITH ASTROCYTOMA GRADE II
(REFERRED TWO SLIDES RE ENCLOSED)

COMMENT:
1- The lesion is identical for the pathology of the local recurrence reported in the previously issued report with the code number L 79
2- Please correlate with the clinical, radiologic, operative findings and all data available.

HASAN AL HASANY

Dr. Ali EL Hindawi
Professor Of Pathology
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EX- President Of The Arab Division Of The
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Member Of The European Society Of Pathology

Dr. Maha Akl
Professor Of Pathology
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دكتور/ على الهنداوى
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دكتورة/ مها عقل
استاذ الباثولوجيا
رئيس الاقسام العملية الاكلينيكية (معهد تيودور بلهارس)
عضو الجمعية الاوربية للباثولوجي
عضو الجمعية الدولية للباثولوجي (الفرع العربي)

Name: احلام عادل صالح
Referred by:
Clinical data: Brain SOL
Specimen: Slides

Age:16 Y
Date:11/6/2014

Code: F-4890

PATHOLOGY REPORT

GROSS:
Three slides examined and re- enclosed.

MICROSCOPY:
The examined slides show cerebral tissue portions exhibiting perivascular cuffing with lymphocytes as well as degenerative foci showing aggregates of foam histiocytes (lipophages) .Areas of gliosis are seen. No evidence of necrosis, cell anaplasia or infection.

CONCLUSION: Brain SOL , referred slides, consistent with:
Demyelinating inflammatory pseudotumor.

Prof. Ali El Hindawi
Prof. Maha Akl

HASAN AL HASANY