QUIZ 2

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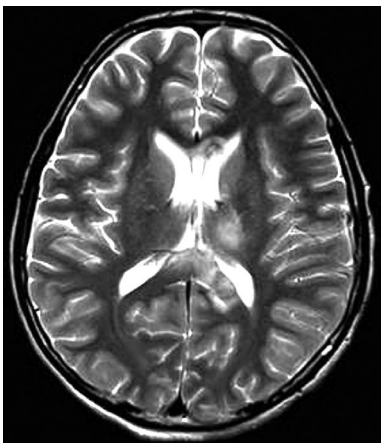
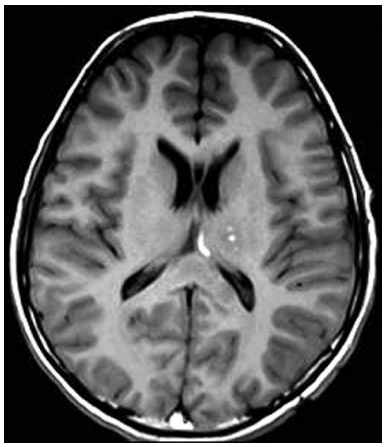
PJR January - March 2009; 19(1): 35-36

Clinical History: 14 year old male with history of road traffic accident presented to emergency room under went non CT scan and MRI brain.

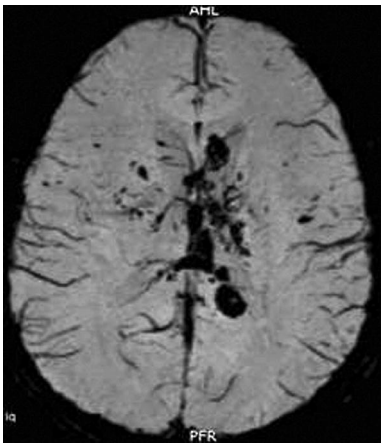
1)



2)



3)



4)

Questions

Q1. What is the most likely diagnosis?

Q2. What are the radiological staging of this condition?

Q3. What are the main MRI findings of this conditions on different sequences?

Q4. What is the differential diagnosis ?

QUIZ 2

Answers

Answer 1: Diffuse axonal injury.

Answer 2: Radiological staging include

Stage 1:
Lesion found in the parasagittal regions of the frontal lobes , the periventricular temporal lobes, the parietal and occipital lobes, internal and external capsules and cerebellum .
Stage 2:
Areas of stage 1 and involvement of corpus callosum.
Stage 3:
Areas of stage 2 and brain stem involvement.

Answer 3: MRI findings includes as following;
T1WI:
Usually normal, If > 1 cm and hemorrhagic, hyperintense (3-14 days)
T2WI:
Hyperintense foci at characteristic locations. Hypointense if hemorrhagic
FLAIR:
Hyperintense and hypointense foci at characteristic locations
SWI:
Hypointense foci 2° susceptibility from blood products at characteristic locations.
Multifocal hypointense foci may remain for years. It is the most sensitive sequence to detect microbleeds.

Answer 4: Multifocal non hemorrhagic lesions like

1. Demyelinating diseases
1. Marchiafava–Bignami syndrome
2. Cerebral amyloid angiopathy
3. Cavernous malformations

References

1. Tong KA, Ashwal S, Holshouser BA, Shutter LA, et al. Hemorrhagic Shearing Lesions in Children and Adolescents with Posttraumatic Diffuse Axonal Injury: Improved Detection and Initial Results. Radiology. 2003 May;**227(2):**332-9

2. Hurley RA, McGowan JC, Arfanakis K, Taber KH. Traumatic axonal injury: novel insights into evolution and identification J Neuropsychiatry Clin Neurosci. 2004 Winter;**16(1):**1-7.