Case conference

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Patient Profile

86 y/o ♀
E4V5M6
T/P/R=35/72/16; BP = 209/70mmHg
SpO2 = 99%
檢傷主訴：病人主訴為踩空後跌倒頭部鈍傷、
左手無名指撕裂傷。
Triage = Ⅱ

Present Illness

C.C: 上樓梯3~4階時踩空滑倒；
contusion of occipital area
amensia (+, 不記得怎麼跌的，
也不記得中午吃東西了沒）;
no headache, chest pain, or pain at abd., pelvis, or four ext.;
vomiting (+);
no dizziness or blurred vision;
denied use of anticoagulants;

Past History

DM
HTN
Cataract s/p OP (o.u.)

Physical Examination

Consciousness: clear, E4V5M6;
HENNT: No tenderness @ midline of neck;
Chest: RHBs; BS: bil. Clear; no focal tenderness;
Abd.: soft; no focal tenderness;
Pelvis: no focal tenderness;
Ext.: no focal tenderness; freely movable;
N.E.:
EOM: intact
Pupil & LR (4+, 4+);
No deviation of mouth angle;

Impression

head injury, r/o ICH
L/W ~0.3cm @ L't ring finger

Initial order (day 1, 17:51)

brain CT w/o contrast
F/s (217)
Promeran 1amp im st
Toxoid 0.5mL im st
Wound CD
Winacort oint local use
Tinten 1# po qid prn
HI sheet
Ice packing
Recheck BP (192/95mmHg)

Brain CT

day 1

17:51 consult NS
19:05
- CBC ----
- Panel I
- PT/aPTT
- IVF D5S run 60mL/hr
- EKG
- CXR
- GCS q4h
- 轉EC-22

day 2

18:51
- 有時L't thigh pain;
- PE: no tenderness, but can't walk
- 大腳張開才能站（不穩）
- → pelvic AP + Frog、L't femoral x-ray

20:01 x-ray: no obv. displaced fx
- CVA? SAH, progress?
- → consult Neuro.
- → Brain CT (2nd)

day 3

09:08
- S: 走路已跟平時一樣；吃飯中；沒有不舒服
- O: cons. Clear
- A: SAH, minimal
- P: 等吃完飯下床走
- → if as baseline → discharge

10:00 p't can walk；請family 來接
11:00 family來接；病人突然不講話

day 3, 11:20

drooling, r/o seizure, r/o stroke
- brain CT
- F/S (382)
- EEG
- VBG6
- Mg, P, iCa
- NH3, TSH, fT4, cortisol
- Reconsult Neuro
- 啟動tPA

11:30
- Osm., Ketone
- RI 8units iv st

day 3, 12:24

ECD → L't VA occlusion (old problems)
TCD → BA & right ICA stenosis
EEG: left lateralized slowing, with a few sharp waves

A:
= epilepsy postictal confusion, aphasia
= Traumatic SAH; bilateral SDE
16:28 Brain MRI w/o contrast → DC (排day 5做，請病房重開單)
17:11 Admission

住院後

day 6: no aphasia (E4V5M6);
GI bleeding → IV form PPI
pneumonia
day 15: E3V5M5 → brain CT: SDE progressed, bil.
→ 家屬不開刀
day 28: 轉復健科
day 35: MBD

Discussion

protocol of mild traumatic brain injury
anticoagulant, to check or not to check?

現行做法：SKH

CT？
SDH/EDH → admission/OP
SAH (+) → obs @ ER * 24hrs + OPD f/u

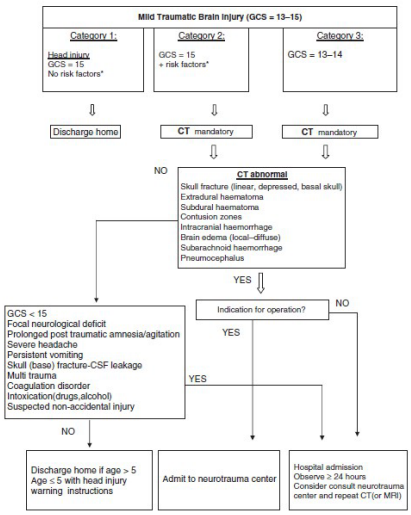
Table 1 Classification of traumatic brain injury and indication for immediate head CT

Classification	Characteristics	Indication for immediate head CT[a]
Mild	Hospital admission GCS = 13–15 Loss of consciousness if present 30 min or less	
Category		
1	GCS = 15 No risk factors or only 1 minor risk factor present (CHIP rule) Head injury, no TBI	No
2	GCS = 15 With risk factors: ≥1 major risk factor(s) or ≥2 minor risk factors (CHIP rule)	Yes
3	GCS = 13–14	Yes
Moderate	GCS = 9–12	Yes
Severe	GCS ≤ 8	Yes
Critical	GCS = 3–4, with loss of pupillary reactions and absent or decerebrate motor reactions	Yes

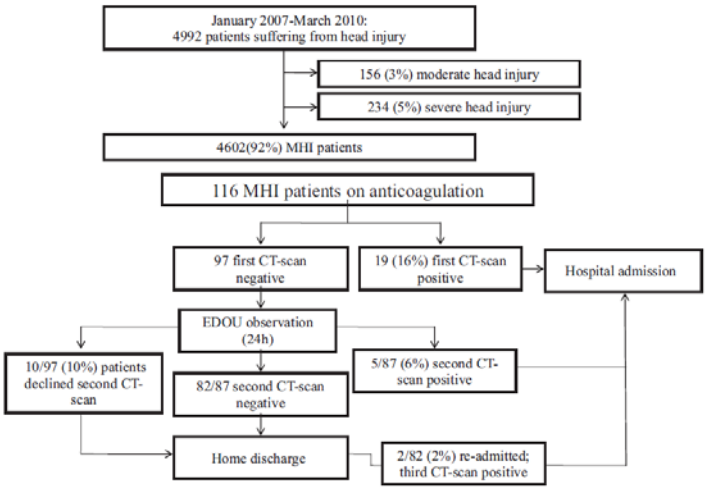
EFNS 2012

Table 2

Risk factors for intracranial complications after mild traumatic brain injury	References
Unclear or ambiguous accident history	Masters *et al.* (1987), Vos *et al.* (2000)
Continued post-traumatic amnesia*	Haydel *et al.* (2000), Stiell *et al.* (2001)
Retrograde amnesia longer than 30 min	Stiell *et al.* (2001)
Trauma above the clavicles including clinical signs of skull fracture (skull base or depressed skull fracture)	Feuerman *et al.* (1988), Haydel *et al.* (2000), Masters *et al.* (1987), Stiell *et al.* (2001), Teasdale *et al.* (1990)
Severe headache	Haydel *et al.* (2000)
Vomiting	Nee *et al.* (1999), Haydel *et al.* (2000), Stiell *et al.* (2001)
Focal neurological deficit	Masters *et al.* (1987), Teasdale *et al.* (1990)
Seizure	Masters *et al.* (1987)
Age < 2 years	Masters *et al.* (1987), Levin *et al.* (1992b)
Age > 60**	Gomez *et al.* (1996), Haydel *et al.* (2000), Stiell *et al.* (2001)
Coagulation disorders	Saab *et al.* (1996), Stein *et al.* (1992), Volans (1998)
High-energy accident***	American College of Surgeons (1997), Bartlett *et al.* (1998), Stiell *et al.* (2001)
Intoxication with alcohol/drugs	Cardoso and Galbraith (1985), Boyle *et al.* (1991), Kelly (1995)



Ann Emerg Med. 2012;59(6):451-5.



Menditto VG, Lucci M, Polonara S, Pomponio G, Gabrielli A. Management of minor head injury in patients receiving oral anticoagulant therapy: a prospective study of a 24-hour observation protocol. Ann Emerg Med. 2012;59(6):451-5.

24hrs obs + repeated head CT scan
→ detect delayed bleeding?

2nd CT scanning →new hemorrhages (5/87; 1 craniotomy)
2 p'ts MBD but readmitted with bleeding
both with INR≧ 3.0
neither required surgery

anticoagulant, to check or not to check?

degree of anticoagulation was predictive of risk of ICH
INR ≧2.0 → odds ratio of 2.59
INR ≧ 3 →(relative risk = 14; 95% CI 4 – 49)

Cohn B, Keim SM, Sanders AB.
Can Anticoagulated Patients be Discharged Home Safely from the Emergency Department after Minor Head Injury?.
J Emerg Med. 2014;46(3):410-7.

current literature does not support routine hospital observation for 24 h or repeat cranial CT scans in all anticoagulated patients with head injury.....