

1. Lead examiner .....

Candidate Number:

2. Co-examiner .....

Total Mark:

**SCENARIO**

You are the consultant in a regional Emergency Department. A 6 year-old boy re-presents having been discharged 2 hours ago.

He was assessed during the previous presentation for a head injury, sustained from a fall off a tree. No investigations were performed.

**Question 1: Outline the indications for CT scan of brain in this child.**

(1.5 minute)

| Expected Response    | Details & Comments                                                                                                                                                |  |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Definite indications | GCS<15, focal neurology, seizures, signs of skull # or penetrating skull injury                                                                                   |  |
| Consider if:         | Persistent vomiting<br>History of loss of consciousness<br>Delayed seizure(s)<br>Post-traumatic amnesia<br>Underlying bleeding risk<br>Moderate – severe headache |  |
| Other                | - CHALICE Criteria, PECARN, CATCH etc<br>- Unscheduled return, apparent clinical deterioration. Likely parental anxiety. These lower the threshold for CT,        |  |
| Conclusion           | <b>Must adequately explain reasoning behind the decision to perform neuroimaging in children giving at least 3 factors from lists above</b>                       |  |

**Question 2: A CT Brain is performed. Describe and interpret the CT scan.**

(1.5minute)

| Expected Response  | Details & Comments                                                                                                                                                                                                                                  |                                        |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Description        | Extradural haematoma, left anterior cranial fossa<br>Debatable presence/absence of midline shift<br>Approximately 1.5 x 4 cm<br>Left frontal lobe compressed slightly<br>Fluid in left frontal sinus<br>Air bubble<br>External soft tissue swelling | <b>2 factors other than extradural</b> |
| Relevant negatives | Remainder of brain normal; no apparent skull fracture seen (but expect on other views).                                                                                                                                                             |                                        |
| Interpretation     | <b>Left frontal extradural haematoma adequately described</b> from recent closed head injury. Expect and plan for deterioration. <b>Will need liaison with and care under a neurosurgical service</b>                                               |                                        |

**Question 3: The child deteriorates to a GCS of 5. Outline your management.**

(2.5 minutes)

| Expected Response          | Details & Comments                                                                                                                                                                                                                                                                                                                                                        |  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Key Issues                 | <b>Resuscitate: RSI with appropriate drugs and technique incl spinal precautions</b><br><b>Maintain cerebral perfusion pressure (CPP). ie MAP high(ish) and ICP low.</b><br><b>Needs urgent EDH evacuation. Strong arguments for this to occur prior transfer.</b><br><b>Liaise with parents and other NOK</b><br><b>Continue to arrange transfer to tertiary service</b> |  |
| Resuscitation / RSI        | Resus room, assume leadership, delegate roles.<br>Full monitoring, incl SaO <sub>2</sub> , ETCO <sub>2</sub> .<br>Drug / Equipment preparation and selection. ETT size 5.5 plus one size up/down.<br>Rapid sequence Intubation/ventilation, avoid hypotension or hypoxia, spinal precautions.<br>Notify surgeon and OT.                                                   |  |
| Maintain CPP               | Ongoing sedation and paralysis.<br>Ventilation strategy: aim for paO <sub>2</sub> 100mmHg or more, low-normal paCO <sub>2</sub><br>Decompress stomach (orogastric tube only), ETT tape not tight. Nurse 30 deg head up. Load with phenytoin. Avoid hypotension.<br>Mannitol or hypertonic saline in consultation with surgeon.                                            |  |
| Other critical care issues | Maintain euglycaemia<br>Consider cervical spine and other injuries<br>IDC                                                                                                                                                                                                                                                                                                 |  |
| Liaisons                   | Early discussion with parents / NOK re: management plan                                                                                                                                                                                                                                                                                                                   |  |
| Emergent evacuation of EDH | Mobilise surgeon. Needs burr hole before retrieval. Consult with tertiary receiving neurosurgical service.<br>Prepare patient for theatre.                                                                                                                                                                                                                                |  |
| Transfer                   | Post emergency burr hole / evacuation. Requires transfer for definitive treatment.                                                                                                                                                                                                                                                                                        |  |

**Question 4: Concerns regarding the management at the initial presentation are brought to your attention. Outline the issues raised and actions required.**

(1.5 minutes)

| Expected Response             | Details & Comments                                                                                                                                                    |  |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Review of clinical case       | Explore circumstances in detail: clinical, staffing, resources, other<br>Was alternative management appropriate at presentation                                       |  |
| Review of staff resources     | Systems: roster adequacy, sufficient senior support<br>Individual: Clinician competence. Previous clinical issues, recurrent problem? Impaired physician?             |  |
| Review of systems / processes | Review by senior Dr?<br>Education / competence of personnel<br>Workload. ?Poor access to radiology and/or IP services<br>Discharge processes / ?applicable guidelines |  |
| Risk management               | Highlight in morbidity / mortality meetings; also for educational purposes<br>Notifications: Risk Man, hospital legal counsel                                         |  |
| Implement required changes    | Targeted at systems: education, guidelines, accreditation, triage, rostering<br>At individual practitioners IF indicated: eg counseling                               |  |
| Quality feedback loop         | Review after defined period to ensure loop closed and desired effect achieved.                                                                                        |  |
| Liaison with parents / NOK    | Open disclosure. Full explanation, apology.<br>Inform them of findings, and actions.                                                                                  |  |

**Optional Question :What specific issues need to be addressed with the parents, regarding this case. (1.5minutes)****Comments: (if you fail the candidate, please state why)**

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**If the candidate fails the exam overall, what feedback would you suggest CIC provide for this SCE?**

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## **SCENARIO**

**You are the consultant in a regional Emergency Department. A 6 year-old boy re-presents having been discharged 2 hours ago.**

**He was assessed during the previous presentation for a head injury, sustained from a fall off a tree. No investigations were performed.**

**The question you will be asked on entering the room is:**

**“Outline the indications for performing a CT scan of the brain in this child”**