

This section of the journal is designed to present clinical problems which focus on patient management, problem-solving, and other elements integral to family medicine. It features reinforcement of major teaching points through further discussion and supplemental references which appear on the following pages.

Self-Assessment in Family Practice

These materials have been prepared by members of the Self-Assessment Panel of *The Journal of Family Practice*. Membership: R. Neil Chisholm, MD, Chairman (University of Colorado, Denver), B. Lewis Barnett, MD (Medical University of South Carolina, Charleston), Paul C. Brucker, MD (Thomas Jefferson University Hospital, Philadelphia, Pennsylvania), Laurel G. Case, MD (University of Oregon Medical School, Portland), Ian R. Hill, MD (Plains Health Centre, Regina, Saskatchewan), Kenneth F. Kessell, MD (MacNeal Memorial Hospital, Berwyn, Illinois), John A. Lincoln, MD (University of Washington, Seattle), Richard C. Reynolds, MD (University of Florida, Gainesville), Gabriel Smilkstein, MD (University of California, Davis), William L. Stewart, MD (Southern Illinois University, Springfield).

The following is a patient management problem. After reading the stem, you should answer each question sequentially. One or more answers may be correct for each question. After you have answered each question, and before going to the next, you should turn to the answer page and review the responses to your choices while covering the answers to the next question. Repeat this process until all five questions have been answered.

Question A:

A 17-year-old high school football player is brought to the Emergency Room because he was unconscious for about two minutes following a tackle. You and his parents have accompanied the player from the field. You find that he is lying on a stretcher complaining of a slight right-sided headache, slightly drowsy but oriented. You notice blood coming from his right ear. His physical evaluations on the field and during transportation were otherwise non-contributory.

[Choose one or more answers]

1. The next thing you would do is:
 - A. Order a skull x-ray.
 - B. Do a complete examination.
 - C. Check vital signs and functions.
 - D. Obtain a complete history.
 - E. Request a consultant for angiography.
2. Following this you would:
 - A. Order a skull x-ray and cervical spine x-ray.

- B. Do a basic neurological examination.
 - C. Schedule the patient for a lumbar puncture.
 - D. Clean the blood out of the patient's ear and examine the tympanic membrane.
 - E. Prepare the patient for a brain scan.
3. With this additional information you would:
 - A. Continue interval evaluations of patient's vital signs and basic neurological status.
 - B. Order an electroencephalogram.
 - C. Request a consultant for angiography.
 - D. Order a skull and cervical spine x-ray.
 - E. Prepare the patient for surgery.
 4. After this you would:
 - A. Admit the patient to the hospital.
 - B. Send the patient home with instructions to the parents regarding interval observations of the patient.
 - C. Continue interval evaluations of the patient's vital signs and basic neurological status.
 - D. Order analgesics for headache.
 - E. Order prophylactic antibiotics.
 5. The diagnoses (one or more) in this case would be:
 - A. Cerebral contusion.
 - B. Cerebral concussion.
 - C. Basal skull fracture, middle fossae.
 - D. Basal skull fracture, posterior fossae.
 - E. Acute subdural hematoma.

Please indicate whether the following statements are true or false.

Question B:

In regard to the diagnosis and management of maxillary sinusitis, please indicate whether the following statements are true or false:

6. The anterior-nasal-swab cultures correlate well with direct aspirate cultures.
7. Marked mucosal thickening as determined radiographically is correlated with abnormal sinus aspirates.
8. High aspirate leukocyte counts (greater than 1,000/cu ml) are correlated with infection as manifested by bacterial titers of greater than 10^5 .
9. Organisms frequently recovered from the sinus include H. influenza, streptococcus, pneumonia, and anaerobic bacteria.
10. An opaque antrum to transillumination strongly suggests sinus infections in patients with acute symptoms.
11. An appropriate empirical antimicrobial for acute maxillary sinusitis might be methicillin.
12. An appropriate empiric antimicrobial might be amoxicillin.
13. Antrum puncture should be considered for diagnostic purposes in those patients who do not have their clinical infection resolve quickly with decongestants and antimicrobial therapy.
14. Patients with acute sinusitis (bacterial) may become asymptomatic despite the persistence in the sinus of purulent material containing high titers of bacteria.

Question A:

1. A. Incorrect — Not yet! Skull films offer only ancillary information. In the absence of depressed skull fracture they rarely dictate treatment. There is danger in sending the patient to x-ray before evaluation has been completed.
 - B. Incorrect — A complete examination would not be appropriate in a young man cleared for athletic competition and in need of emergency care.
 - C. Correct — Episodic care in trauma requires that vital signs (temperature, pulse, respiration, blood pressure) and vital functions (heart and lungs) be checked. [Patient's findings are normal.]
 - D. Incorrect — Only basic information is needed, ie, previous head injuries, medications used, and allergies.
 - E. Incorrect — "Steady state" and absence of localizing neurological findings in the patient would negate this request.
2. A. Incorrect — Still too soon.
 - B. Correct — The basic neurological examination for head injuries is a check of: (1) sensorium and orientation, (2) pupil size and response, (3) deep tendon reflexes and Babinski's reflex, and (4) motor response. (5) Additional basic information includes study of breathing pattern and in some instances oculo-vestibular response (*No* tonic-neck check until x-ray of neck has been obtained). [Patient shows no significant abnormalities. He is now more alert.]
 - C. Incorrect — In general a lumbar puncture is contraindicated in a clear-cut head injury.
 - D. Correct — Blood in the ear may have come from a scalp injury. Peroxide, swab cleansing of external auditory canal will expose blood coming from a torn tympanic membrane. [Patient demonstrates this finding.]
 - E. Incorrect — No neurological localization or change in sensorium is present to warrant this procedure.

3. A. Correct — Interval evaluations are the most important aspect in the care of a head injured patient. Intervals should be established according to the patient's condition. With increase in cerebral edema or pressure patients show higher temperature, slower pulse rate, change in respiration pattern, and an elevated blood pressure with widening pulse pressure. [This patient remains stable.]
 - B. Incorrect — Contributes little at this stage of evaluation.
 - C. Incorrect — No evidence to suggest localizing lesions.
 - D. Correct — Patient demonstrates stabilization, OK for x-rays. Check both skull and neck due to the high incidence of combined head trauma and cervical spine injury.
 - E. Incorrect — (See "C" above)
4. A. Correct — In view of blood from the right ear, hospital observation is advised. There is a danger of meningitis present.
 - B. Incorrect — (See "A" above). Head injury observation should be carried out in the hospital.
 - C. Correct — As a patient's sensorium improves, intervals between checks may be lengthened.
 - D. Incorrect — Analgesics and sedatives are to be avoided, especially during the first 24 hours. The state of the patient's sensorium and the intensity and distribution of a headache are important diagnostic items in patient evaluation.
 - E. There is a difference of opinion on this point. The majority opinion seems to favor close observation for signs of infection, then vigorous high dose treatment if infection is demonstrated. Low dose prophylaxis is thought by some to mask incipient meningitis.
5. A. Incorrect — No residual from head injury.
 - B. Correct — Clinical diagnosis: Patient who experiences head trauma that results in transient loss of orientation or consciousness without evidence of residual defects.
 - C. Correct — Clinical diagnosis:

Patient who experiences head trauma and demonstrates blood in middle ear (blue drum) or blood released from middle ear through torn tympanic membranes.

- D. Incorrect — Look up "Battle's sign" in medical dictionary.
- E. Incorrect — No localizations or change during interval evaluation.

References

1. Schreider RC: Head and Neck Injuries in Football. Baltimore, The Williams and Wilkins Company, 1973
2. Youmans JR: Neurological Surgery. Philadelphia, WB Saunders Company, 1973, vol. 1-3

Question B:

6. False. Anterior nasal swab cultures correlate poorly with direct aspirate cultures.
7. True. Marked mucosal thickening by x-ray is associated with abnormal aspirates while lesser thickening is not.
8. True. Leukocyte counts of over 1,000/cu ml in an aspirate are usually associated with infection.
9. True. H. influenza, streptococcus, pneumonia, and anaerobic bacteria are most frequently recovered in the aspirate, and rhino virus is occasionally recovered.
10. True. An opaque antrum to transillumination strongly suggests sinus infection in a patient with acute symptoms while dull sinuses to transillumination usually reveal normal aspirates.
11. False. Methicillin would not be the drug of choice because of the frequent occurrence of H. influenza in the aspirate.
12. True. Amoxicillin as an empiric antimicrobial is most likely to cover the spectrum commonly found in sinusitis.
13. True. Because of the ill-effects from chronic sinusitis it is wise to do a careful follow-up to be certain the infection has cleared.
14. True. In this study¹ it was shown that patients can become asymptomatic despite the persistence of purulent material containing high titers of bacteria.

Reference

1. Evans FO Jr, Sydnor JB, Moore WEC, et al: Sinusitis of the maxillary antrum. N Engl J Med 293:735-739, 1975