2010

Neurologic Localizations

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FORMAT FOR SUBMISSION OF TEAM-BASED LEARNING MODULES

1) Title of module: "Neurologic Localizations"

2) Purpose of module: The purpose of this TBL module is to evaluate students' mastery of course content and teach students to apply knowledge of neural pathways and physical examination signs to the localization of nervous system lesions.

3) Objectives: At least 3 objectives, stated in outcomes format.

After completing this learning module, students will be able to:
1. Associate neural pathway dysfunction with physical signs detected upon clinical examination of the nervous system
2. Apply knowledge of neural pathway anatomy and neurologic physical signs to localize lesions of the nervous system.

4) Advanced Preparation Assignment: detailed specification of what the students must do and/or learn before coming to the module.

In order to successfully complete this TBL module, students must know the structure and function of the following nervous system pathways, structures and blood supply, and understand the deficits resulting from their disruption.

Pathways
anterolateral system
corticospinal tract
dorsal column-medial lemniscal
descending bladder control
dorsal spinocerebellar tract
medial longitudinal fasciculus
visual pathways

Cranial nuclei/nerves
optic
oculomotor, trochlear, abducens
trigeminal
facial
glossopharyngeal
hypoglossal

Reflexes
corneal
oculocephalic
deep tendon
Babinski
gag

vestibulo-ocular

Cortical functional areas
language use
primary motor
somatosensory/association areas
visual plus vis. association areas
cortical areas for eye movement
hemispheric asymmetry and cerebral dominance issues

Blood vessels
Any vessel that contributes to the anterior or posterior circulation to the brain and brainstem.

5) Readiness Assurance Questions:

Our Readiness Assurance Test consists of 10 Multiple Choice Questions. It is administered as the *Individual Readiness Assurance Test* and the *Group Readiness Assurance Test*.

Our Readiness Assurance Test is attached. (Correct answers indicated in red).

6) Group Application Exercise: 4-8 Multiple Choice Questions, each of which requires the student to interpret data, a photomicrograph, an x-ray, or other previously unseen information and make a *specific choice* to the question. Case vignettes or laboratory experiment scenarios also make good 'stems' for the questions. Answers to these questions should NOT be found in any text or other resource, and can only be answered by a team discussing, debating, reaching a consensus on a single best answer.

Our Group Application Exercise consists of two Case Scenarios and 7 questions. Questions 1 - 6 are multiple choice questions (MCQs) using the traditional one-best-answer format. The seventh question is atypical in that the answer choices are generated by the student teams. For question 7, teams are required to submit written answers (15 words or less) which the faculty organizes into 5 choice-groups based on content similarity. The teams then consider each of the 5 groups of written submissions and select the group of written responses they feel best answers the original question. Team voting and inter-team discussion completes the session as usual.

Our Group Application Exercise is attached. (Correct answers indicated in red).

7) Context:

This module is one of **3** modules for the course entitled Medical Neuroscience and intended for **second** year medical students.

8) Facilitation Schema: This should be a flow chart on the time allotment for each component of the module, e.g. 15 minutes for the IRAT, 25 minutes for the GRAT; etc.
This information guides the reader in planning an effective module for the time allotted.

In our administration of this module the following times have been successful:

IRAT - 10 questions - 15 minutes
GRAT - same 10 questions - 15-25 minutes
Group Application Exercise - 6 traditional MCQs and one Student-initiated MCQ -1 ½ hours

Total time - approximately 2 hours
We administered this to an entire class of 105 students, organized into 18 Teams, in one session and in one room.