



## Guidelines for Constructing Multiple-Choice Items

**A standard multiple-choice item consists of two parts: a problem (stem) and a list of suggested solutions (options). See example below:**

**STEM:** A 54 year-old woman was transplanted for NASH using a liver from a 59 year-old donor. The transplant was done piggyback with an end-to-end duct-to-duct anastomosis and a cold ischemia time of 13 hours and warm ischemia time of 45 minutes. At 4 months posttransplant the patient developed increased liver enzymes (AST 80, ALT 61, GGT 334, AP 221, TBil 8.1) along with itching. An ultrasound showed normal Doppler arterial flow and a biopsy of the liver showed no rejection. An ERCP was performed showing irregular bile ducts and solid material within the biliary system taking the physical shape of the bile ducts. What treatment option would yield the best result?

**OPTIONS:**

A. *Metallic stent placement in the common bile duct across the anastomosis and through the ampulla* (Distractor)

B. *Roux-en-y hepaticojejunostomy surgical revision to allow for cast removal* (Distractor)

C. *High dose ursodeoxycholic acid to dissolve the cast* (Distractor)

D. **ERCP/PTC clearance of duct utilizing balloon dilation, sphincterotomy, lithotripsy and baskets** (Answer)

**Overall guidelines:**

- All questions should have 4 options, with only **one** correct answer.
- Do not make items contingent on one another, for example, do not make knowing the answer to the first question necessary to correctly answer the second question.

**For the questions:**

- Each item should assess the application of knowledge, and not focus on the recollection of an isolated fact or point. **Clinical vignettes, like the example above, provide the best basis for questions of this type. Suggested questions to accompany clinical vignettes:**
  - *How would you diagnose this patient?*
  - *What is the most appropriate next step in establishing the diagnosis?*
  - *What is the most appropriate treatment?*
  - *What test would you order for this patient?*
- Avoid True/False Questions
- Avoid using "Which of the following is true (or false)"

**For the answers:**

- Avoid using "All of the following except"
- "All of the above" and "none of the above" should not be used as an answer option
- Each answer should be accompanied by a **rationale** (briefly explain why the option is or is not correct)