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The Specimen Handling of GI Mucosal Biopsy: A Simple and Effective Quality Improvement Initiative

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Abstract

Objective: Histologic diagnostic foci on GI mucosal biopsy may be patchy. Therefore, slides with good orientation of mucosal tissue in a perpendicular plane and demonstrating an entire layer of mucosa will increase the diagnostic yield. Department of Pathology Faculty of Medicine Siriraj Hospital has launched the two steps quality improvement program and a parallel research aiming to demonstrate the importance of tissue orientation of GI biopsy.

Material and Method: Step 1: quality improvement was introduced at the pathology laboratory. Embedding technicians were trained to embed tissue in perpendicular plane. Step 2: quality improvement at endoscopy unit, endoscopic nurses were trained to spread the biopsy tissues on a mesh with upward mucosal surface before fixing them into formalin. Three sets of 50 consecutive cases of GI mucosal biopsy were retrieved from before, after step 1, and after step 2. The number of high quality slides, diagnostic discrepancy, and diagnostic confidence of the pathologists were compared between the three sets.

Results: High quality slides were significantly increased from 23 (46%) before quality improvement to 30 (60%) after step 1, and 37 (74%) after step 2 (p-value = 0.017). Diagnostic discrepancy was decreased while diagnostic confidence was increased after quality improvement.

Conclusion: The quality of GI mucosal biopsy slides were significantly improved after a simple and feasible program indicating that both educating and training of medical personnel for tissue procurement and tissue processing are crucial. Higher quality of slide can lead to more accurate diagnosis and fewer laboratory resources used.

Keywords: GI mucosal biopsy, Quality improvement, Specimen handling

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