



Importance of Endoscopic Evaluation of Persistent Symptoms in Celiac Disease

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DESCRIPTION

Celiac disease is an autoimmune disorder triggered by the ingestion of gluten, leading to inflammation and damage in the small intestine. Despite adherence to a strict gluten-free diet, many adult patients continue to experience gastrointestinal and extra-intestinal symptoms. This persistence poses a challenge for both patients and clinicians, necessitating a comprehensive approach to diagnosis and management.

Celiac disease: Overview and challenges

Celiac disease affects approximately 1% of the global population. The typical presentation includes symptoms such as diarrhea, abdominal pain, bloating and weight loss. However, some individuals may experience atypical symptoms, including fatigue, joint pain, or skin rashes. The definitive diagnosis is usually made through serological tests and intestinal biopsy, which assesses villous atrophy and other characteristic changes [1-3].

For many patients, following a gluten-free diet leads to symptom improvement and mucosal healing. Nevertheless, a subset of patients continues to have symptoms despite strict dietary compliance.

Refractory Celiac Disease (RCD): A rare condition where symptoms persist despite adherence to a gluten-free diet, often associated with significant intestinal damage.

Non-Celiac Gluten Sensitivity (NCGS): Symptoms triggered by gluten in individuals without the autoimmune response characteristic of celiac disease.

Associated conditions: Conditions such as Irritable Bowel Syndrome (IBS) or Small Intestinal Bacterial Overgrowth (SIBO) can also contribute to ongoing symptoms.

Identifying the underlying cause of persistent symptoms is essential for effective management. This is where advanced endoscopic techniques come into play.

Capsule endoscopy

Capsule endoscopy involves the ingestion of a small, pill-sized camera that captures images of the gastrointestinal tract as it travels through the intestines. This non-invasive procedure allows for direct visualization of the small intestine, making it a valuable tool for diagnosing various conditions, including celiac disease [4-7].

Detecting mucosal healing: In patients adhering to a gluten-free diet, capsule endoscopy can assess whether mucosal healing has occurred or if there are persistent lesions indicative of ongoing inflammation.

Identifying complications: The technique can reveal complications such as strictures, ulcers, or malignancies that may develop in chronic celiac disease.

Ruling out other pathologies: Capsule endoscopy helps in excluding other conditions that might mimic celiac disease symptoms, such as Crohn's disease or small bowel tumors.

While capsule endoscopy has many advantages, it also has limitations. The most significant concern is the risk of capsule retention, particularly in patients with significant intestinal damage or strictures. Careful patient selection is essential to mitigate this risk. Additionally, while capsule endoscopy provides excellent visualization, it cannot facilitate tissue biopsy, which is often necessary for definitive diagnosis [8-10].

Double-balloon enteroscopy

Double-balloon enteroscopy is a more invasive procedure involving a specialized endoscope that allows for deep access to the small intestine. This technique uses two balloons to create a windshield wiper effect, enabling the endoscopist to advance the scope further into the small bowel.

Biopsy acquisition: Unlike capsule endoscopy, double-balloon enteroscopy allows for direct biopsy of the small intestinal

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mucosa. This capability is vital for confirming the diagnosis of refractory celiac disease or ruling out malignancies.

Therapeutic interventions: In addition to diagnostic purposes, this procedure can be used to perform therapeutic interventions, such as balloon dilation for strictures or polypectomy if necessary.

Assessment of severity: By enabling comprehensive evaluation of the small bowel, double-balloon enteroscopy can assess the extent of damage and inflammation, which is critical in guiding management.

Clinical implications

The use of capsule endoscopy and double-balloon enteroscopy in managing patients with celiac disease and ongoing symptoms represents an evolution in gastrointestinal diagnostics. By providing complementary information, these techniques enhance the clinician's ability to make informed decisions regarding further management.

For patients with suspected RCD: Double-balloon enteroscopy is preferred for obtaining biopsies and confirming the diagnosis, especially if there is a suspicion of refractory disease or associated malignancies.

For patients with non-specific symptoms: Capsule endoscopy can be an effective first step in ruling out complications or other gastrointestinal pathologies before proceeding to more invasive procedures.

In follow-up evaluations: Both techniques can play roles in follow-up assessments, helping clinicians monitor mucosal healing or the development of complications.

CONCLUSION

As the understanding of celiac disease evolves, the roles of capsule endoscopy and double-balloon enteroscopy are likely to expand. Ongoing research will continue to refine these techniques, explore their effectiveness in various scenarios and assess their impact on patient outcomes. Additionally, advancements in technology may improve the safety and efficacy of these procedures, further enhancing their value in clinical practice. Capsule endoscopy and double-balloon enteroscopy are valuable tools in the management of adult patients with celiac

disease who experience persistent symptoms. Each technique offers unique advantages and limitations, necessitating careful consideration of individual patient circumstances. By integrating these advanced diagnostic modalities into clinical practice, healthcare providers can enhance the evaluation and management of celiac disease, ultimately improving the quality of life for affected individuals.

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