

## Review

### Obscure Gastrointestinal Bleeding – A Multimodal Imaging Approach

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#### Abstract

Gastrointestinal (GI) bleeding represents one of the most frequently encountered clinical case scenarios in the emergency department. In the United States, the annual rate of hospitalization for any type of GI hemorrhage accounts for 300/100,000 population, with more than 1,000,000 hospitalizations each year and an approximately mortality rate of 5%. Upper GI bleeding (UGIB) is more common than lower GI bleeding (LGIB), yet there are many sites and multiple lesions from which bleeding could occur and the source could remain unidentified after upper endoscopy or colonoscopy evaluation. The uncertain etiology of GI hemorrhage is traditionally defined as obscure GI bleeding (OGIB) and constitutes a diagnostic challenge, so accurate investigations are crucial. Even if the mainstay of initial evaluation consists of upper endoscopy, colonoscopy or contrast X-ray studies, current guidelines suggest that video capsule endoscopy, push enteroscopy, angiography and radionuclide imaging are best suited, allowing an appropriate examination of the entire small bowel, which represents the most common source of OGIB. Hence, the aim of this review is to provide a multimodal investigation approach and to highlight the most adequate imaging technique according to the leading cause of OGIB.

**Keywords:** gastrointestinal bleeding, obscure, imaging, endoscopy, video capsule

#### INTRODUCTION

##### Definitions and Epidemiology

Obscure gastrointestinal bleeding (OGIB) is defined as a gastrointestinal (GI) bleeding of uncertain etiology after upper endoscopy, colonoscopy, or barium small bowel follow-through, with a recurrent pattern. It accounts for approximately 5% of all cases of clinical GI hemorrhage and the small intestine represents the most common source (around 75% cases) [1]. Depending on the clinical presentation and the rate of blood loss, OGIB

can be classified as overt and occult. Thus, overt OGIB refers to a visible acute GI bleeding, manifested as hematemesis - vomitus of red blood or “coffee-grounds” material, melena - black, tarry, foul-smelling stool, or hematochezia - passage of bright red or maroon blood from the rectum. OGIB has a chronic character because of microscopic hemorrhage, usually being associated with an initial presentation of a positive fecal occult blood test (FOBT) or fecal immunochemical test (FIT – which detects only human hemoglobin from the lower GI tract), without