

Delayed Massive Postoperative Ileal Hemorrhage from an Ileal Dieulafoy Lesion Following Penetrating Abdominal Gunshot Injury: Successful Diagnosis of Obscure Small Bowel Bleeding by Intraoperative Enteroscopy – A Case Report

Min Nay Zar Wyke^{*1}, Min Htet San², Kyaw Ye Naung Htun², Aung Ko Ko Linn², Kyaw Thu Linn², Thein Maw Myint², Pyae Phyo Kyaw², Oakar Kyaw³, Thant Lwyn San⁴, Khin Aung Htun⁵

¹Senior Consultant Surgeon, No. (1) Military Hospital (700-Bedded), Pyin Oo Lwin, Myanmar.

¹<https://orcid.org/0009-0005-0986-1047>

²Consultant Surgeon, No. (1) Military Hospital (700-Bedded), Pyin Oo Lwin, Myanmar.

³Senior Consultant Surgeon, No. (1) Military Hospital (700-Bedded), Pyin Oo Lwin, Myanmar.

⁴Senior Consultant Surgeon, Directorate of Medical Services, Nay Pyi Taw, Myanmar.

⁵Rector and Senior Consultant Surgeon, Defence Services Medical Academy, Yangon, Myanmar.

ABSTRACT

Background: Penetrating abdominal gunshot injuries frequently result in multiple visceral injuries requiring emergency surgical intervention. Delayed postoperative intraluminal hemorrhage after successful repair of traumatic bowel injuries is exceptionally uncommon, particularly when the bleeding originates from the distal ileum and cannot be identified by conventional endoscopic evaluation. Prompt recognition and timely intervention are crucial to prevent catastrophic hemorrhagic shock.

Case Presentation: A 28-year-old soldier sustained a penetrating abdominal gunshot injury causing two complete jejunal transections and associated descending colonic injury, requiring emergency laparotomy with segmental jejunal resection, primary anastomoses, and exteriorization of the injured descending colon as a loop colostomy. The initial postoperative recovery was uneventful until postoperative day 10, when he developed sudden massive hemorrhage through the loop colostomy resulting in hemorrhagic shock. Upper gastrointestinal endoscopy and colonoscopy failed to identify the bleeding source. Emergency relaparotomy with intraoperative enteroscopy through a surgically created ileostomy demonstrated a small (approximately 4-5 mm), actively spurting vascular lesion approximately 10 inches proximal to the ileocecal valve. Segmental ileal resection with primary anastomosis achieved definitive hemostasis. Histopathological examination confirmed an ileal Dieulafoy lesion (calibre-persistent submucosal artery) associated with recent hemorrhage, granulation tissue, reactive epithelial mucosal changes, proliferating capillaries, and no evidence of malignancy. The patient recovered completely and subsequently underwent successful colostomy closure after confirmation of distal colonic patency.

Conclusion: Delayed postoperative ileal hemorrhage should be considered in patients with persistent gastrointestinal bleeding after abdominal trauma when conventional endoscopy is inconclusive. Intraoperative enteroscopy remains a valuable diagnostic and therapeutic adjunct in selected patients with obscure small bowel bleeding, enabling accurate localization and definitive surgical management.

KEYWORDS: Dieulafoy lesion, abdominal gunshot injury, jejunal transection, delayed postoperative hemorrhage, obscure small bowel bleeding, intraoperative enteroscopy.

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INTRODUCTION

Penetrating abdominal trauma remains a significant cause of morbidity and mortality worldwide, particularly among military personnel and in regions affected by armed conflict. Gunshot injuries are characterized by high-energy tissue destruction that frequently involves multiple abdominal organs simultaneously. Compared with blunt abdominal trauma, penetrating injuries have a substantially higher incidence of hollow viscus perforation, mesenteric disruption, vascular injury, and contamination of the peritoneal cavity. Early recognition and prompt operative intervention remain the cornerstone of successful management in patients presenting with generalized peritonitis or hemodynamic instability (1,11-13).

The small intestine is among the most commonly injured abdominal organs following penetrating trauma because of its extensive length and relatively fixed anatomical position. Jejunal injuries account for a considerable proportion of bowel injuries encountered during exploratory laparotomy. Complete bowel transection, multiple perforations, mesenteric vascular injury, and associated colonic injuries frequently coexist. Standard surgical management includes meticulous exploration, resection of non-viable bowel, primary anastomosis when feasible, adequate control of contamination, and appropriate damage-control procedures in selected patients. Recent international trauma guidelines recommend primary repair or primary anastomosis whenever feasible, while diversion remains appropriate for selected high-risk colonic injuries (1,11-13).

Postoperative complications following repair of traumatic bowel injuries include surgical site infection, anastomotic leakage, intra-abdominal abscess, adhesive intestinal obstruction, enterocutaneous fistula, wound dehiscence, and intra-abdominal sepsis. In contrast, delayed massive intraluminal gastrointestinal hemorrhage after successful bowel repair is exceedingly rare. When postoperative gastrointestinal bleeding occurs, common etiologies include stress-related mucosal disease, peptic ulcer disease, anastomotic bleeding, ischemic ulceration, or diffuse mucosal erosions. Identification of bleeding arising from the distal small intestine remains particularly challenging because of its anatomical inaccessibility using conventional upper gastrointestinal endoscopy and colonoscopy (2,3,9,15).

Obscure small bowel bleeding continues to present an important diagnostic challenge even in modern surgical practice. Although capsule endoscopy, computed tomography angiography, deep enteroscopy, and radionuclide imaging have substantially improved diagnostic accuracy in stable patients, these modalities are often impractical in patients with massive ongoing hemorrhage or profound hemodynamic instability. Under such circumstances, emergency surgical exploration

combined with intraoperative endoscopy provides a valuable alternative for direct visualization of the small bowel lumen, localization of the bleeding site, and immediate definitive treatment (2,3,9,10).

Intraoperative endoscopy has traditionally been reserved for selected patients with persistent obscure gastrointestinal bleeding after unsuccessful non-operative investigations. Despite advances in endoscopic technology, its role remains important in life-threatening situations where rapid localization of bleeding is essential. Direct endoscopic examination of the small intestine during laparotomy permits complete evaluation of previously inaccessible bowel segments while simultaneously allowing definitive surgical intervention once the bleeding source has been identified. Reports describing its application in delayed postoperative hemorrhage following penetrating abdominal trauma remain exceptionally limited (3-10).

We report a unique case of delayed massive postoperative gastrointestinal hemorrhage following penetrating abdominal gunshot injury. Conventional upper gastrointestinal endoscopy and colonoscopy failed to identify the bleeding source. Emergency relaparotomy with intraoperative enteroscopy localized a small actively spurting vascular lesion in the distal ileum, and segmental ileal resection was performed. Histopathological examination confirmed an ileal Dieulafoy lesion (calibre-persistent submucosal artery), an exceptionally rare cause of small bowel hemorrhage. This case highlights the importance of considering Dieulafoy lesion in the differential diagnosis of life-threatening obscure postoperative gastrointestinal bleeding and demonstrates the lifesaving role of intraoperative enteroscopy with clinicopathological correlation.

CASE PRESENTATION

A 28-year-old previously healthy male soldier was admitted to the emergency department on the morning of injury after sustaining a penetrating abdominal gunshot wound during active military operations. The bullet entered through the upper part of the left buttock without an exit wound. On arrival, the patient complained of severe abdominal pain associated with progressive abdominal distension and inability to move because of pain. Primary trauma assessment demonstrated a patent airway and spontaneous breathing with an oxygen saturation of 95% on room air. He was alert and oriented with a blood pressure of 100/70 mmHg, pulse rate of 98 beats/minute, and normal body temperature. There was no pallor, jaundice, or evidence of external hemorrhage. Local examination revealed a single entry wound over the upper left buttock without an exit wound. Abdominal examination showed generalized tenderness with marked guarding, rigidity, absent bowel sounds, and abdominal distension, indicating generalized

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peritonitis. Pelvic compression elicited significant pain, raising suspicion of an associated pelvic fracture. Following initial resuscitation according to Advanced Trauma Life Support principles, urgent laboratory and radiological investigations were performed. Focused abdominal ultrasonography demonstrated mild-to-moderate hemoperitoneum with echogenic intraperitoneal fluid and extensive gaseous shadowing suggestive of hollow viscus perforation. The liver, spleen, kidneys, and urinary bladder appeared intact without evidence of solid organ injury. Plain abdominal radiography demonstrated retained metallic foreign bodies projected over the umbilical and left iliac fossa regions, corresponding to the suspected bullet trajectory (Figure 1). Routine laboratory investigations revealed a hemoglobin concentration of 13.1 g/dL, white blood cell count of $4.9 \times 10^9/L$, platelet count of $226 \times 10^9/L$, and erythrocyte sedimentation rate of 50 mm/hour. Serum biochemistry demonstrated blood urea nitrogen of 38.28 mg/dL, serum creatinine of 2.11 mg/dL, serum sodium of 143.5 mmol/L, potassium of 5.09 mmol/L, chloride of 108 mmol/L, and random blood glucose of 154 mg/dL. Screening for human immunodeficiency virus, hepatitis B surface antigen, and hepatitis C antibody was negative.



Figure 1. Plain radiographs showing retained metallic foreign bodies projected over the umbilical and left iliac fossa regions with associated left iliac wing fracture.

Considering the mechanism of injury, clinical evidence of generalized peritonitis, imaging findings suggestive of bowel perforation, and retained intra-abdominal foreign body, emergency exploratory laparotomy was undertaken on the day of admission after rapid optimization with intravenous crystalloid resuscitation, broad-spectrum antibiotics, gastrointestinal protective medications, analgesia, and blood preparation. Through a midline laparotomy, approximately 2,000 mL of hemoperitoneum mixed with blood clots was evacuated. Thorough abdominal exploration demonstrated two complete jejunal transections located approximately 28 cm and 38 cm distal to the ligament of Treitz (Figure 2). Additional injuries included complete transection of the distal descending mesocolon, a serosal tear involving the distal descending colon, a large greater omental hematoma, and a 5×4 cm traumatic defect

of the left lower anterior abdominal wall peritoneum containing multiple iliac bone fragments resulting from the associated iliac wing fracture. No injury to the liver, spleen, stomach, pancreas, kidneys, urinary bladder, or major abdominal vessels was identified.

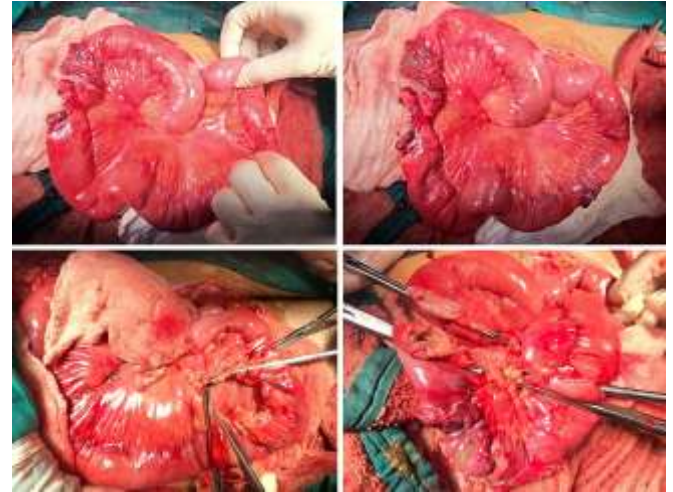


Figure 2. Intraoperative views showing two complete jejunal transections and primary end-to-end hand-sewn anastomoses.

Definitive surgical repair was performed during the same operation. The two injured jejunal segments were resected separately, followed by primary end-to-end hand-sewn anastomoses (Figure 2). Each anastomosis was fashioned in two layers using an inner full-thickness absorbable suture layer reinforced by an outer interrupted seromuscular Lambert layer. Owing to the severity of mesocolonic disruption and the associated serosal injury of the distal descending colon in a heavily contaminated abdomen, the injured colonic segment was exteriorized as a protective loop colostomy rather than performing primary repair. The traumatic intra-abdominal wall defect was repaired after removal of devitalized tissue and loose bony fragments. Extensive warm saline peritoneal lavage was performed until the effluent became clear, and closed suction drains were placed in the hepatorenal recess and pelvic cavity before standard abdominal wall closure.

The patient's postoperative recovery was initially satisfactory. He was admitted to the surgical ward for close monitoring with continued intravenous broad-spectrum antibiotics, analgesics, fluid therapy, thromboprophylaxis, nutritional support, and routine postoperative care. The colostomy became functional with passage of fecal contents, while abdominal drains demonstrated progressively decreasing serosanguineous output before removal. Bowel sounds gradually returned, and oral intake was introduced in a stepwise manner from clear liquids to a soft diet without nausea or vomiting. Serial abdominal examinations remained unremarkable with a soft, non-distended abdomen and no evidence of wound infection, intra-abdominal sepsis,

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or anastomotic leakage. His vital signs remained stable throughout the first postoperative week, and laboratory parameters showed satisfactory recovery.

Unexpectedly, at midnight on the tenth postoperative day, the patient developed sudden passage of a large volume of fresh blood and blood clots through the loop colostomy. Approximately 1,500 mL of blood was initially collected in the colostomy appliance (Figure 3 and 4). Simultaneously, he became pale and tachycardic with a pulse rate of 120 beats/minute and blood pressure of 90/60 mmHg, although his body temperature was only mildly elevated at 99.6°F. Immediate resuscitation was initiated with rapid intravenous crystalloid infusion, urgent blood grouping and cross-matching, transfusion of two units of whole blood, intravenous vitamin C and vitamin K supplementation, and broad-spectrum antimicrobial therapy. Despite initial transfusion, continuous fresh bleeding persisted through the colostomy, eventually exceeding an estimated total blood loss of approximately 2,000 mL. His clinical condition progressively deteriorated with persistent tachycardia (140 beats/minute), hypotension (97/52 mmHg), and increasing hemodynamic instability despite adequate urine output.



Figure 3. Massive fresh blood and clots draining through the loop colostomy on postoperative day 10.



Figure 4. Large blood clots passed through the loop colostomy.

Because the bleeding source remained uncertain, emergency upper gastrointestinal endoscopy and colonoscopy through the loop colostomy were performed after stabilization. Upper gastrointestinal endoscopy demonstrated a large gastric fundal ulcer with localized necrotic tissue but no active hemorrhage or stigmata of recent bleeding (Figure 5). Colonoscopic examination through the colostomy revealed only mild diffuse mucosal erosions throughout the colon extending to the terminal ileum without active bleeding, visible vessels, or blood originating from the examined bowel (Figure 6).

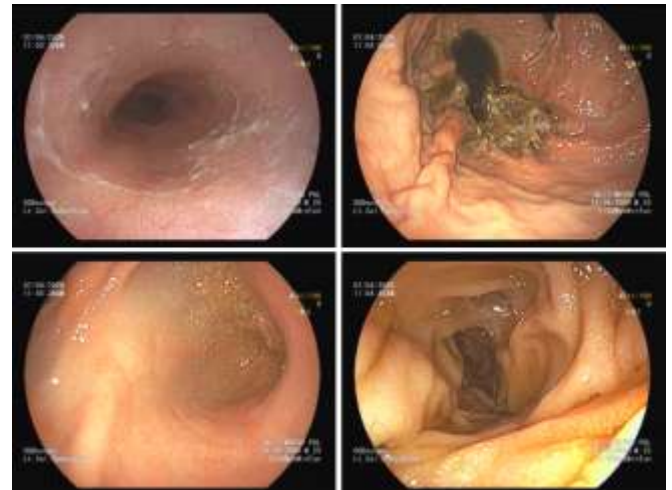


Figure 5. Emergency OGD views showing a large fundal ulcer with localized necrotic tissue and no active bleeding.

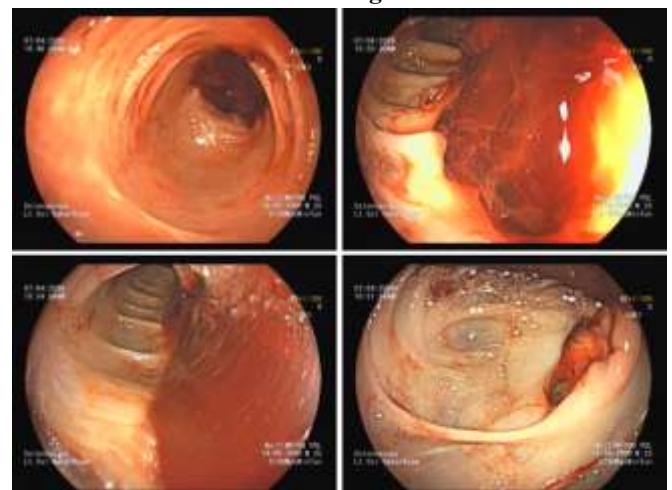


Figure 6. Colonoscopy through the loop colostomy showing mild diffuse mucosal erosions without active bleeding.

Following endoscopic evaluation, the patient received an additional unit of whole blood together with two units of fresh frozen plasma and was transferred to the intensive care unit for aggressive resuscitation and continuous hemodynamic monitoring. Nevertheless, fresh blood and large clots continued to drain through the colostomy (Figure 7). His condition further deteriorated with persistent

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dizziness, high-grade fever, pulse rate rising to 160 beats/minute, and profound hypotension of 70/30 mmHg despite vasopressor support using intravenous noradrenaline. In view of ongoing massive hemorrhage and inconclusive endoscopic findings, a multidisciplinary decision involving the surgical, physician, and intensive care teams was made to proceed with emergency exploratory relaparotomy. The principal differential diagnoses included delayed hemorrhage from the previous jejunal anastomoses, occult small bowel ulceration, traumatic vascular injury, or an unidentified bleeding lesion within the small intestine.



Figure 7. Persistent fresh blood and clots through the loop colostomy despite intensive care resuscitation.

During emergency relaparotomy, dense postoperative adhesions were carefully divided to facilitate complete examination of the abdominal cavity. No hemoperitoneum, anastomotic leakage, intra-abdominal abscess, or bleeding from either previous jejunal anastomosis was identified. To investigate the small intestine systematically, a temporary ileostomy was created, allowing introduction of an upper gastrointestinal endoscope directly into the distal small bowel (Figure 8). Intraoperative endoscopic examination demonstrated a small (approximately 4-5 mm), hemispherical, vascular lesion with active pulsatile (spurting) arterial bleeding approximately 10 inches proximal to the ileocecal valve (Figure 9 and 10). The lesion appeared erythematous and highly vascular, raising intraoperative suspicion of a focal vascular lesion or traumatic vascular abnormality. The endoscope was subsequently advanced proximally to the previous jejunal anastomoses, confirming that both anastomotic sites were intact without evidence of bleeding. Following precise localization of the active ileal bleeding site, segmental ileal resection with primary hand-sewn end-to-end anastomosis was performed (Figure 11). The previously fashioned loop

colostomy was revised and refashioned, a pelvic drain was inserted, and the abdomen was closed in layers.



Figure 8. Intraoperative enteroscopy through a surgically created temporary ileostomy.

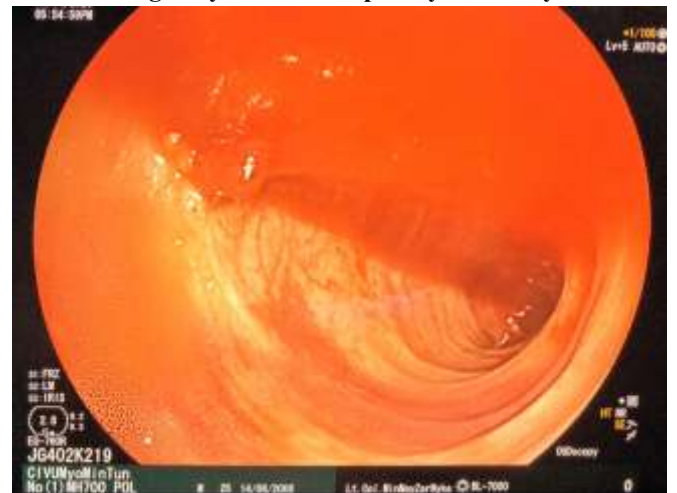


Figure 9. Intraoperative enteroscopic view of the distal ileum during evaluation for the bleeding source.



Figure 10. Intraoperative enteroscopy showing an actively spurting vascular lesion approximately 10 inches proximal to the ileocecal valve, consistent with an ileal Dieulafoy lesion.

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Figure 11. Segmental ileal resection and primary end-to-end anastomosis following localization of the active bleeding site.

Histopathological examination of the resected specimen demonstrated a calibre-persistent submucosal artery consistent with an ileal Dieulafoy lesion, associated with recent hemorrhage, granulation tissue, reactive epithelial mucosal changes, proliferating capillaries, and numerous extravasated red blood cells. No evidence of dysplasia, malignancy, vasculitis, or infective pathology was identified. Correlation of the histopathological findings with the intraoperative endoscopic appearance of a small actively spurting vascular lesion confirmed the diagnosis of an ileal Dieulafoy lesion as the source of the delayed massive hemorrhage (Figure 12, 13 and 14).



Figure 12. Gross specimen of the resected ileum showing the Dieulafoy lesion at the bleeding site.



Figure 13. Gross specimen of the resected ileum showing the localized Dieulafoy lesion at the active bleeding site.

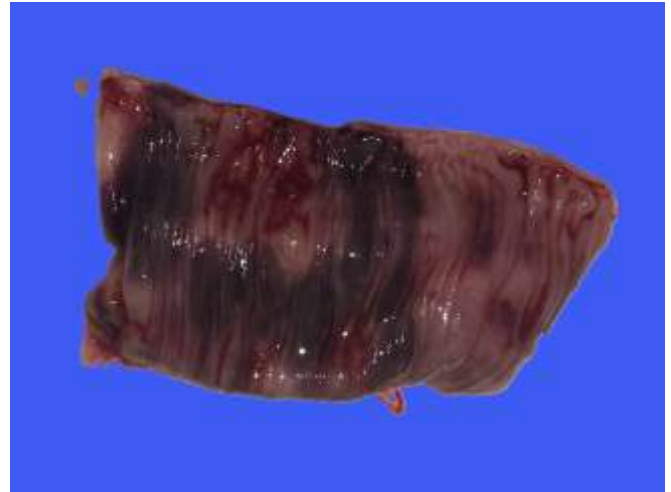


Figure 14. Gross specimen of the resected ileum showing the Dieulafoy lesion with surrounding hemorrhagic mucosa.

Immediately after the second operation, the patient was managed in the intensive care unit. His hemodynamic status improved rapidly with a blood pressure of 110/80 mmHg, pulse rate of 108 beats/minute, oxygen saturation of 98% with supplemental oxygen, and complete cessation of bleeding from the colostomy. Postoperative management included transfusion of two additional units of packed red blood cells, broad-spectrum intravenous antibiotics, electrolyte correction, nutritional support, stress ulcer prophylaxis, intravenous hydrocortisone for management of severe systemic inflammatory response and sepsis, daily wound care, and multidisciplinary management of the associated left iliac wing fracture by the orthopedic team. During the following two weeks, the patient's fever gradually subsided, laboratory parameters normalized, and colostomy output remained free of blood. He progressively tolerated a full oral diet, regained independent ambulation, and was transferred from the intensive care unit to the postoperative recovery ward and subsequently to the general surgical ward. He was discharged in good general condition with normal bowel function through the colostomy and satisfactory nutritional status.



Figure 15. Intraoperative views showing elective closure of the loop colostomy with restoration of bowel continuity.

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At follow-up, the abdominal wounds healed uneventfully, and he resumed normal daily activities without gastrointestinal symptoms. Six weeks later, distal loop contrast colonography confirmed a patent distal colon without leakage or obstruction, while abdominal ultrasonography demonstrated no residual intra-abdominal pathology. Elective colostomy closure was successfully performed after appropriate preoperative optimization (Figure 15). Recovery following stoma closure was uneventful, and at subsequent follow-up the patient remained asymptomatic, tolerated a normal diet, maintained good nutritional status, and had returned to his normal daily activities.

DISCUSSION

Penetrating abdominal gunshot wounds remain among the most challenging emergencies encountered by trauma surgeons because they frequently produce multiple injuries involving hollow viscera, mesentery, vascular structures, and adjacent bony components. The severity of injury depends on several factors, including projectile velocity, bullet trajectory, tissue cavitation, and energy transfer. In military personnel, penetrating ballistic injuries are often associated with extensive tissue destruction and contamination, making prompt operative intervention essential (1,11-14). Our patient sustained a transpelvic bullet trajectory entering through the left buttock, resulting in an iliac wing fracture, two complete proximal jejunal transections, distal descending mesocolon transection, serosal injury of the descending colon, and a traumatic abdominal wall defect. The absence of major vascular injury despite extensive bowel damage contributed significantly to his survival following emergency laparotomy.

The jejunum is particularly vulnerable to penetrating trauma because of its mobility and relatively large intraperitoneal surface area. Multiple bowel injuries should always be anticipated when treating gunshot wounds because the projectile may produce both direct tissue disruption and secondary injury from cavitation. During trauma laparotomy, complete exploration of the entire gastrointestinal tract is mandatory to avoid missed injuries, which remain an important cause of postoperative morbidity and mortality (1,11-14). In the present case, meticulous exploration identified two separate jejunal transections together with associated mesocolonic and colonic injuries, allowing definitive surgical repair during the initial operation. The two-layer hand-sewn jejunal anastomoses remained completely intact throughout the patient's postoperative course, confirming that the delayed hemorrhage was unrelated to technical failure of the primary repair.

Management of destructive colonic injuries remains controversial and must be individualized according to the

degree of contamination, associated injuries, physiological status of the patient, and surgeon experience. Although primary repair or resection with primary anastomosis is increasingly recommended in carefully selected trauma patients, exteriorization or diverting colostomy continues to have an important role in patients with severe contamination, destructive colonic injury, or complex associated trauma (1,11-14). In our patient, exteriorization of the injured distal descending colon as a loop colostomy represented a safe damage-control strategy that minimized the risk of postoperative anastomotic leakage in the presence of extensive bowel injury and hemoperitoneum. The successful elective colostomy closure performed six weeks later further demonstrated the effectiveness of this staged surgical approach.

The most remarkable aspect of this case was the occurrence of catastrophic delayed intraluminal hemorrhage on the tenth postoperative day after an initially uncomplicated recovery. Postoperative gastrointestinal bleeding following traumatic bowel repair is uncommon, and when it occurs, clinicians generally suspect stress-related mucosal disease, peptic ulcer disease, diffuse mucosal erosions, ischemic bowel, or bleeding from an anastomotic suture or staple line (2,3,9,15). Massive bleeding originating from the distal ileum after successful trauma surgery is exceptionally rare and may easily be mistaken for anastomotic bleeding or upper gastrointestinal hemorrhage. In our patient, both previous jejunal anastomoses remained healthy without evidence of bleeding during relaparotomy, emphasizing that delayed postoperative hemorrhage may originate from a previously unrecognized distal small bowel lesion rather than from the original operative repair.

Localization of small bowel bleeding remains one of the greatest diagnostic challenges in gastrointestinal surgery because the jejunum and ileum are relatively inaccessible using conventional endoscopic techniques. Current international guidelines recommend capsule endoscopy and device-assisted enteroscopy as first-line investigations for stable patients with suspected small bowel bleeding after negative upper gastrointestinal endoscopy and colonoscopy (2,3,9,10). However, these investigations are frequently impractical in patients with active massive hemorrhage or profound hemodynamic instability because immediate therapeutic intervention is required. In our patient, emergency upper gastrointestinal endoscopy demonstrated only a non-bleeding gastric fundal ulcer, while colonoscopy through the loop colostomy showed only mild diffuse mucosal erosions extending to the terminal ileum without an identifiable bleeding source. These findings highlight the diagnostic limitations of conventional endoscopy in patients with life-threatening distal small bowel hemorrhage.

Dieulafoy lesion is an uncommon vascular anomaly characterized by a calibre-persistent submucosal artery that

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protrudes through a minute mucosal defect and causes sudden, potentially life-threatening arterial gastrointestinal hemorrhage. Approximately 70-90% of Dieulafoy lesions occur in the proximal stomach, whereas only 1-2% arise in the small intestine, making ileal Dieulafoy lesions exceptionally rare. Diagnosis is frequently delayed because the surrounding mucosa usually appears normal and bleeding is often intermittent. In our patient, intraoperative enteroscopy demonstrated a small vascular lesion with active arterial spurting, while histopathological examination confirmed an ileal Dieulafoy lesion (calibre-persistent submucosal artery) associated with recent hemorrhage, granulation tissue, reactive epithelial mucosal changes, proliferating capillaries, and no evidence of malignancy. The excellent correlation between the operative, endoscopic, and histopathological findings established the definitive diagnosis.

The diagnosis of an ileal Dieulafoy lesion in this patient is particularly noteworthy because the lesion became clinically apparent only after successful management of multiple traumatic bowel injuries. Whether the lesion represented a previously silent vascular anomaly that was unmasked by postoperative physiological stress or whether local trauma contributed to its rupture cannot be determined with certainty. Nevertheless, prompt recognition of persistent hemorrhage, early re-exploration, intraoperative enteroscopy, and definitive bowel resection resulted in successful treatment and an excellent clinical outcome.

Persistent hemorrhage despite aggressive resuscitation necessitated emergency relaparotomy. Because no active intra-abdominal bleeding or anastomotic disruption was identified during surgical exploration, the operative team elected to perform intraoperative enteroscopy through a surgically created ileostomy. This approach enabled direct visualization of the distal small bowel and successfully identified an actively spurting arterial bleeding point approximately 10 inches proximal to the ileocecal valve. Following precise localization of the active ileal bleeding site, limited ileal resection with primary hand-sewn end-to-end anastomosis immediately controlled the hemorrhage while preserving bowel length. Although intraoperative enteroscopy is now less commonly performed because of advances in capsule endoscopy and balloon-assisted enteroscopy, published studies have demonstrated that it remains an important rescue procedure when conventional investigations fail and ongoing hemorrhage threatens life (3-10). Reported diagnostic yields range from approximately 57% to nearly 100%, with high rates of successful localization and definitive treatment in carefully selected patients (4-8).

Another important lesson from this case is the value of multidisciplinary management in patients with complex postoperative deterioration. Surgeons, anesthesiologists,

intensivists, physicians, endoscopists, orthopedic surgeons, nursing staff, and transfusion services all contributed to the successful outcome. Prompt massive transfusion, vasopressor support, broad-spectrum antimicrobial therapy, correction of electrolyte disturbances, nutritional support, intensive care monitoring, and coordinated postoperative rehabilitation enabled recovery from hemorrhagic shock and systemic inflammatory response. Simultaneous orthopedic management of the associated iliac wing fracture further facilitated complete functional recovery. Such multidisciplinary collaboration is strongly recommended in contemporary trauma management and contributes significantly to improved patient outcomes (1,11-14).

To our knowledge, reports describing histopathologically confirmed ileal Dieulafoy lesions presenting as delayed massive postoperative hemorrhage following penetrating abdominal gunshot injury are exceedingly rare. This case expands the clinical spectrum of obscure postoperative gastrointestinal bleeding after abdominal trauma. Delayed massive bleeding through a colostomy should not automatically be attributed to previous bowel anastomoses or upper gastrointestinal pathology. Persistent hemorrhage despite negative upper gastrointestinal endoscopy and colonoscopy should raise suspicion of an obscure small bowel bleeding source. Emergency relaparotomy combined with intraoperative enteroscopy remains a valuable rescue strategy when advanced enteroscopic techniques are unavailable or when the patient's hemodynamic condition precludes further diagnostic delay. Accurate intraoperative localization of the bleeding site permits limited bowel resection, preserves bowel length, and avoids blind segmental resection. This case demonstrates that intraoperative enteroscopy remains an indispensable diagnostic and therapeutic adjunct in the management of life-threatening obscure small bowel hemorrhage following penetrating abdominal trauma.

CONCLUSION

Penetrating abdominal gunshot injuries may be complicated by rare, life-threatening delayed gastrointestinal hemorrhage despite successful initial surgical management. In this case, massive postoperative bleeding from an ileal Dieulafoy lesion developed after an initially uneventful recovery, while conventional upper gastrointestinal endoscopy and colonoscopy failed to identify the source. Emergency relaparotomy with intraoperative enteroscopy through a surgically created ileostomy successfully localized the actively spurting ileal lesion, allowing targeted segmental resection and definitive hemostasis. Therefore, ileal Dieulafoy lesion should be considered as a rare cause of obscure massive postoperative gastrointestinal bleeding when conventional endoscopic investigations are inconclusive, and intraoperative enteroscopy remains a

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valuable diagnostic and therapeutic adjunct in selected patients with obscure small bowel bleeding, enabling accurate localization and definitive surgical management.

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CONFLICTS OF INTEREST

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