

Non-Operative Management of Splenic Trauma, A Commentary

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INTRODUCTION

Splenic trauma is a common occurrence in both civilian and military populations. The spleen is a highly vascular organ that is prone to injury from blunt or penetrating trauma. Historically, the standard of care for splenic trauma was splenectomy, or surgical removal of the spleen. However, over the past few decades, there has been a shift towards non-operative management (NOM) of splenic trauma, which includes observation and conservative management.^[1] The aim of this article is to review the current literature on the non-operative management of splenic trauma and to discuss its effectiveness, safety, and potential complications.

The primary goal of non-operative management of splenic trauma is to preserve the spleen, which is a critical organ involved in immune function and the removal of aged or damaged blood cells. Splenectomy may lead to an increased risk of infections, particularly from encapsulated bacteria, and a higher risk of thromboembolic events. Additionally, splenectomy is associated with a higher mortality rate in certain populations, such as those with sickle cell disease.

The implementation of NOM for splenic trauma has been driven by several factors, including advances in diagnostic imaging, improvements in critical care management, and the recognition of the importance of preserving the spleen. Accurate patient selection and imaging are crucial in determining whether a patient is a suitable candidate for NOM. In general, patients who are hemodynamically stable and have an injury grade of less than III (according to the American Association for the Surgery of Trauma (AAST) grading system) are considered candidates for NOM.

Computed tomography (CT) is the imaging modality of choice due to its high sensitivity and specificity in detecting splenic injuries. CT can also help identify associated injuries and guide the management of splenic trauma. In addition to CT, ultrasound and magnetic resonance imaging (MRI) may also be used to evaluate splenic injuries.

In this article, we will review the current literature on the non-operative management of splenic trauma and discuss its effectiveness, safety, and potential complications. We will also explore the use of adjuncts to NOM and highlight

areas of future research. Overall, the implementation of NOM for splenic trauma has revolutionized the management of this condition and has led to improved outcomes for patients.

RESULTS

The non-operative management of splenic trauma has gained popularity due to advances in diagnostic imaging and improvements in critical care management. The key to the successful NOM of splenic trauma is accurate patient selection, proper imaging, and close observation. In general, patients who are hemodynamically stable and have an injury grade of less than III (according to the American Association for the Surgery of Trauma (AAST) grading system) are considered candidates for NOM.

Imaging plays a crucial role in the decision-making process for NOM of splenic trauma. Computed tomography (CT) is the imaging modality of choice due to its high sensitivity and specificity in detecting splenic injuries. CT can also help identify associated injuries and guide the management of splenic trauma. In addition to CT, ultrasound and magnetic resonance imaging (MRI) may also be used to evaluate splenic injuries.

The success rate of NOM of splenic trauma varies depending on the severity of the injury and the patient's overall condition. Several studies have reported success rates ranging from 70% to 98%. The success rate is higher in patients with lower grade injuries and those who are hemodynamically stable. The most common reasons for failure of NOM are persistent bleeding, hemodynamic instability, and failure to control associated injuries.

Despite its high success rate, NOM of splenic trauma is not without complications. The most common complication is delayed bleeding, which can occur in up to 4% of cases. Other complications include abscess formation, splenic rupture, and splenic artery pseudoaneurysm. In rare cases, NOM may lead to the development of pancreatic fistula or portal vein thrombosis.

DISCUSSION

The non-operative management of splenic trauma has become the standard of care for hemodynamically stable patients with low-grade splenic injuries. It has several advantages over splenectomy, including a shorter hospital stay, lower morbidity and mortality rates, and preservation of immune function.^[4] NOM also avoids the potential complications associated with surgical removal of the spleen, such as overwhelming postsplenectomy infection and thromboembolic events.^[3]

However, NOM requires careful patient selection, proper imaging, and close observation. The decision to pursue NOM should be made by a multidisciplinary team of trauma surgeons, radiologists, and critical care specialists. The success rate of NOM is highly dependent on the severity of the injury and the patient's overall condition. Patients who fail NOM may require surgical intervention, which may increase morbidity and mortality rates.^[5]

The use of adjuncts to NOM, such as angioembolization and splenic artery ligation, may increase the success rate of NOM in selected cases.^[2] Angioembolization involves the selective embolization of the splenic artery to control bleeding. Splenic artery ligation involves the ligation of the splenic artery to prevent bleeding. Both techniques have been shown to be effective in controlling bleeding and preserving spleen function.

CONCLUSIONS

The non-operative management of splenic trauma has become the standard of care for hemodynamically stable patients with low-grade splenic injuries. It has several advantages over splenectomy, including a shorter hospital stay, lower morbidity and mortality rates, and preservation of immune function. However, successful NOM requires careful patient selection, proper imaging, and close observation.^[6] The decision to pursue NOM should be made by a multidisciplinary team of trauma surgeons, radiologists, and critical care specialists. Adjuncts to NOM, such as angioembolization and splenic artery ligation, may increase the success rate of NOM in selected cases.

Despite its high success rate, NOM of splenic trauma is not without complications. Delayed bleeding is the most common complication, and other potential complications include abscess formation, splenic rupture, and splenic artery pseudoaneurysm. Patients who fail NOM may require surgical intervention, which may increase morbidity and mortality rates.

Further research is needed to identify factors that can improve the success rate of NOM and to better understand the long-term outcomes of patients undergoing NOM for splenic trauma.

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