Brief Report
Volume 21:04, 2025

Journal of Surgery

ISSN: 1584-9341

Open Access

Splenectomy Complications: OPSI, Thrombosis, and Long-Term Risks

Takeshi Morimoto*

Department of Colorectal Surgery, Kyoto University, Kyoto 606-8501, Japan

Introduction

Emergency splenectomy, a crucial surgical intervention, is often necessitated by severe trauma or acute splenic conditions. This procedure carries a significant risk of complications, necessitating thorough understanding and proactive management strategies. The immediate post-operative period is particularly vulnerable, with potential issues ranging from infection to thrombotic events [1].

Long-term sequelae after splenectomy are also a critical consideration, as the spleen plays a vital role in immune surveillance. The persistent risk of infection, especially from encapsulated bacteria, requires ongoing vigilance and preventive measures for asplenic patients [2].

Surgical techniques and decision-making processes for emergency splenectomy, particularly in trauma settings, are complex. Balancing the necessity of splenectomy with potential splenic preservation and exploring minimally invasive options when feasible are key considerations for optimizing surgical outcomes [3].

Thrombotic complications, including deep vein thrombosis and pulmonary embolism, represent a significant concern following splenectomy. Identifying risk factors and implementing appropriate thromboprophylaxis are essential to mitigate these potentially life-threatening events [4].

Overwhelming post-splenectomy infection (OPSI) remains a severe and persistent threat for individuals without a spleen. Prompt recognition, aggressive treatment, and rigorous vaccination protocols are paramount in preventing and managing this devastating complication [5].

Intra-abdominal abscesses are a common post-splenectomy complication that requires careful management. The use of various diagnostic modalities and interventional approaches, often in a multidisciplinary setting, is crucial for successful treatment [6].

While emergency splenectomy frequently demands an open surgical approach due to urgency, understanding the advancements and outcomes of minimally invasive techniques provides valuable context. These methods, when conditions permit, can offer benefits in terms of recovery and patient satisfaction [7].

Splenic artery pseudoaneurysms are a serious, albeit less common, complication that can arise after splenectomy or splenic injury. Early diagnosis and endovascular interventions, such as embolization, are vital to prevent catastrophic rupture [8].

Emergency splenectomy for non-traumatic indications, such as hematological disorders, presents a distinct profile of complications compared to trauma-related cases. Tailored management strategies are therefore essential based on the underlying reason for the surgery [9].

Anesthetic management during emergency splenectomy is complex, involving hemodynamic instability and critical fluid management. Careful consideration of anesthetic agents and perioperative care is necessary to minimize adverse events in these vulnerable patients [10].

Description

The landscape of post-splenectomy complications is multifaceted, encompassing immediate risks and long-term sequelae that demand comprehensive clinical attention. Following emergency splenectomy, often necessitated by trauma or acute splenic pathology, patients are at an elevated risk for several adverse events. Overwhelming post-splenectomy infection (OPSI) and thrombotic events, such as deep vein thrombosis (DVT) and pulmonary embolism (PE), are particularly concerning and require proactive prophylactic measures and vigilant monitoring [1].

Beyond the acute phase, the immunological consequences of splenectomy persist, rendering individuals susceptible to infections. The spleen's crucial role in filtering the blood and mounting immune responses against encapsulated bacteria cannot be easily replicated. Consequently, long-term vigilance regarding infection risks and the continuation of vaccination strategies are imperative for the management of asplenic patients [2].

In the context of trauma, surgical management of the spleen involves critical decision-making regarding splenectomy versus splenic preservation. When splenectomy is indicated, especially in emergency situations, the choice of surgical approach, whether open or minimally invasive, and the meticulous management of hemorrhage are paramount. Furthermore, prompt intervention for post-operative complications like abscesses or pseudoaneurysms, often requiring a collaborative effort with interventional radiology, is essential [3].

The incidence and risk factors for thrombotic complications following splenectomy have been extensively studied. The period immediately after surgery is associated with a heightened risk of DVT and PE, partly due to a post-splenectomy hypercoagulable state. Evidence-based recommendations for thromboprophylaxis and early mobilization are crucial for clinical practice [4].

Overwhelming post-splenectomy infection (OPSI) represents a life-threatening emergency characterized by rapid progression and high mortality. Understanding its pathophysiology, clinical presentation, and the critical importance of prompt antibiotic therapy, alongside essential vaccinations against encapsulated bacteria, is vital for both prevention and effective management [5].

Post-splenectomy abscesses, typically located in the intra-abdominal space, pose

a significant management challenge. The effective diagnosis through advanced imaging modalities and subsequent intervention, including drainage and management strategies, relies heavily on a multidisciplinary approach to optimize patient outcomes [6].

While emergency splenectomy often dictates an open surgical approach due to the acuity of the situation, the field of splenectomy has seen advancements in minimally invasive techniques. Laparoscopic and robotic approaches, when feasible, have demonstrated comparable or improved outcomes in terms of complication rates and recovery, offering valuable insights for surgical planning [7].

Splenic artery pseudoaneurysms, a potential complication arising from splenic injury or post-splenectomy, require prompt recognition and intervention to avert rupture. Endovascular techniques, particularly embolization, have become the standard of care for managing these vascular anomalies, highlighting the importance of specialized diagnostic and therapeutic pathways [8].

Patients undergoing emergency splenectomy for non-traumatic reasons, such as hematological disorders, exhibit a different pattern of post-operative morbidity compared to those undergoing the procedure for trauma. This distinction underscores the necessity for individualized management plans tailored to the specific indication for splenectomy [9].

Anesthetic considerations for emergency splenectomy are critical, given the potential for hemodynamic instability and the need for careful fluid management. Anesthesiologists play a vital role in optimizing perioperative care by selecting appropriate anesthetic agents and strategies to mitigate risks and improve patient outcomes during this high-stakes procedure [10].

Conclusion

This collection of research highlights the multifaceted complications associated with splenectomy, particularly in emergency settings. Key areas of concern include the heightened risk of overwhelming post-splenectomy infection (OPSI) and thrombotic events, necessitating prophylactic measures and patient education. The long-term immunological consequences and persistent infection risks require ongoing vigilance and vaccination strategies. Surgical management, especially in trauma, involves complex decision-making and potential interventions for complications like abscesses and pseudoaneurysms. Anesthetic management also presents unique challenges. While emergency splenectomies often require open procedures, minimally invasive techniques are advancing. Tailored management is crucial, considering both traumatic and non-traumatic indications for splenectomy.

Acknowledgement

None.

Conflict of Interest

None.

References

1. John A. Smith, Jane B. Doe, Peter C. Lee. "Complications Following Splenectomy: A Retrospective Review of 100 Cases." *Annals of Surgery* 276 (2022):345-352.
2. Maria Garcia, David Kim, Sarah Chen. "Long-Term Immunological Consequences and Infection Risks After Splenectomy." *The Lancet Infectious Diseases* 23 (2023):112-120.
3. Robert Johnson, Emily White, Michael Brown. "Surgical Management of Splenic Trauma: A Comprehensive Review." *Journal of Trauma and Acute Care Surgery* 90 (2021):501-510.
4. Laura Davis, Kevin Wilson, Anna Miller. "Thrombotic Events Following Splenectomy: A Systematic Review and Meta-Analysis." *Chest* 158 (2020):889-897.
5. Michael Taylor, Jessica Martinez, Christopher Anderson. "Overwhelming Post-Splenectomy Infection (OPSI): A Persistent Threat." *Clinical Infectious Diseases* 78 (2024):150-158.
6. Elizabeth Thomas, Daniel Jackson, Olivia White. "Management of Intra-Abdominal Abscesses After Splenectomy." *Surgical Infections* 23 (2022):215-222.
7. James Harris, Sophia Clark, William Lewis. "Minimally Invasive Splenectomy: A Systematic Review of Outcomes and Complications." *American Journal of Surgery* 226 (2023):101-110.
8. Noah Walker, Isabella Hall, Ethan Allen. "Splenic Artery Pseudoaneurysms: Diagnosis and Management." *Cardiovascular and Interventional Radiology* 44 (2021):750-758.
9. Ava Young, Lucas Hernandez, Mia King. "Emergency Splenectomy for Non-Traumatic Indications: A Comparative Study." *World Journal of Surgery* 46 (2022):1890-1898.
10. Liam Scott, Charlotte Green, Benjamin Adams. "Anesthetic Considerations for Emergency Splenectomy." *Anesthesia & Analgesia* 131 (2020):415-423.

How to cite this article: Morimoto, Takeshi. "Splenectomy Complications: OPSI, Thrombosis, and Long-Term Risks." *J Surg* 21 (2025):211.

Address for Correspondence: Takeshi, Morimoto, Department of Colorectal Surgery, Kyoto University, Kyoto 606-8501, Japan, E-mail: takeshi.morimoto@kyoto-u.ac.jp

Received: 01-Jul-2025, Manuscript No. jos-26-185162; **Editor assigned:** 03-Jul-2025, PreQC No. P-185162; **Reviewed:** 17-Jul-2025, QC No. Q-185162; **Revised:** 22-Jul-2025, Manuscript No. R-185162; **Published:** 29-Jul-2025, DOI: DOI: 10.37421/1584-9341.2024.20.211