(รายงานผู้ป่วย)

Mesh Granuloma ที่แทรกตัวเข้าไปในกระเพาะปัสสาวะที่เกิดตามหลังการผ่าตัดไส้เลื่อน: กรณีศึกษา

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บทคัดย่อ

Mesh granuloma เป็นภาวะแทรกซ้อนที่พบได้บ่อยหลังการผ่าตัดไส้เลื่อนด้วยวิธี synthetic mesh reinforcement ภาวะนี้มีความสัมพันธ์กับการตอบสนองทางภูมิคุ้มกันที่ซับซ้อนต่อสิ่งแปลกปลอม ผู้ป่วยที่นำเสนอเป็นผู้ป่วยชายที่มาโรงพยาบาลด้วยอาการปัสสาวะเป็นเลือด โดยที่มีประวัติการผ่าตัดไส้เลื่อนที่ขาหนีบด้านซ้ายเมื่อ 8 ปีก่อน ผลการตรวจเอ็กซ์เรย์คอมพิวเตอร์พบก้อนเนื้อที่ห่อหุ้มด้วยเส้นตาข่ายที่แทรกตัวเข้าไปในกระเพาะปัสสาวะ ผู้ป่วยได้รับการรักษาด้วยการผ่าตัดก้อนเนื้อออกและผลการตรวจทางพยาธิวิทยาได้รับการวินิจฉัยเป็น mesh granuloma

คำสำคัญ : เมช แกรนูโลมา, การผ่าตัดไส้เลื่อน, ภาวะแทรกซ้อนจากการผ่าตัด

(Case Report)

Mesh Granuloma with Bladder Invasion After Total Extra-Peritoneal Hernia Repair: A Case Report

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Abstract

Mesh granuloma is a rare complication after hernia repair with synthetic mesh reinforcement. This condition relates to a complex immunologic response to foreign materials. The presented case is a male patient who suffering from gross hematuria and had a history of totally extraperitoneal repair of left inguinal hernia eight years ago. There was a soft tissue mass encased with mesh that invade the dome of urinary bladder as demonstrated by CT scan. He was treated with open excision and the mesh granuloma was reported.

Keywords : Mesh granuloma, hernia repair, surgical complications
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Introduction

In current practice, inguinal hernia repair is one of the most commonly elective surgical procedure performed internationally. Herniorrhaphy with non-absorbable mesh reinforcement has become the standard procedure according to multiple hernia society guidelines. The surgical technique can be done openly and endoscopically. Totally extraperitoneal (T.E.P.) repair of inguinal hernia is one of the familiar endoscopic techniques practiced. After reduction of the hernial sac, a non-absorbable mesh is usually placed at the inguinal area in the preperitoneal layer to strengthen the myopectineal orifice of Fruchaud. The synthetic mesh activates immunologic response to the foreign body[1]. The macrophage, T-cell, and fibroblast play a significant role in forming the fibrous layer over the mesh[2]. However, the synthetic mesh can cause undesirable effects, such as infection, foreign body sensation, mesh granuloma, and rarely mesh-related visceral organ complications. The etiology and risk factors of granuloma formation are yet to be identified. In this study, we report a case of mesh granuloma with bladder invasion after totally extraperitoneal repair of inguinal hernia.

Case presentation

A 27-year-old male presented at the outpatient department due to gross hematuria and persistent pyuria for 2 weeks. He had a history of totally extraperitoneal repair of left inguinal hernia 8 years ago. A three-centimeter mass could be palpated at suprapubic area on physical examination. The CT of the abdomen demonstrated a 3.1 x 2.8 x 2.5 cm. lobulated enhancing soft tissue mass. The mass was located just beneath the left pyramidalis muscle, left rectus muscle, and obscured the medial part of the previous non-absorbable mesh. It also attached to the left superolateral wall of the urinary bladder. Five metallic tackers were demonstrated on the CT scan located distantly from the mass. An open excision was performed due to the foreign body granuloma formation. The pathological report showed foreign body granuloma, surrounding on the surgical mesh with secondary abscess formation and fistula tract extending through the urinary bladder. Immunohistochemistry showed a composition of CD68+ cells (macrophage) and CD138+ cells (plasma cell) predominantly. Other inflammatory cells including T-lymphocytes (CD4+ and CD8+), B-lymphocytes, and granulocytes are also found scattering in the lesion.

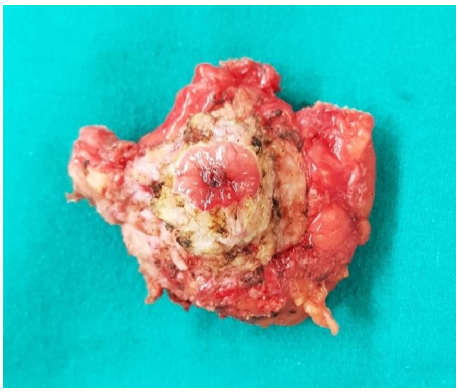

Figure 1. Gross specimen of mesh granuloma

Figure 2. Gross specimen of mesh granuloma

Figure 3. Gross specimen of mesh granuloma, cross section

Discussion

Synthetic mesh reinforcement is the standard of care for inguinal hernia surgery. One long-term complication is granuloma formation. Since the exact mechanism is still not well understood, prediction of occurrence and prevention are also difficult. In addition, the differentiation between granuloma and soft tissue tumors with malignant potential such as leiomyoma, Schwannoma, etc. is still intricate, especially if the mass invades nearby organs. The commonly involved organ is the urinary bladder which was described in others case reports[3]. According to the unclear diagnosis that cannot be distinguished from other malignant potential tumors, Patients were usually treated by wide excision without mesh placement and the risk of hernia recurrent is inevitable.

Conclusion

Granuloma formation and visceral organ involvement are rarely found after a synthetic mesh placement. The macrophage, B-cell, and T-cell are essential in granuloma formation despite the limitation of the etiology, mechanism, and risk factors. The gold standard of diagnosis and treatment for this rare condition is still unclear.

References

1. Heymann F, von Trotha KT, Preisinger C, et al. Polypropylene mesh implantation for hernia repair causes myeloid cell-driven persistent inflammation. JCI Insight. 2019;4(2):e123862.
2. Dievernich A, Achenbach P, Davies L, Klinge U. Characterization of innate and adaptive immune cells involved in the foreign body reaction to polypropylene meshes in the human abdomen Hernia. 2022;26(1):309-23.
3. Kise H, Shibahara T, Hayashi N, Arima K, Yanagawa M, Kawamura J. Paravesical granuloma after inguinal herniorrhaphy. Case report and review of the literature. Urol Int. 1999;62(4):220-2.