Mesh Granuloma with Bladder Invasion After Total Extra-Peritoneal Hernia Repair: case report

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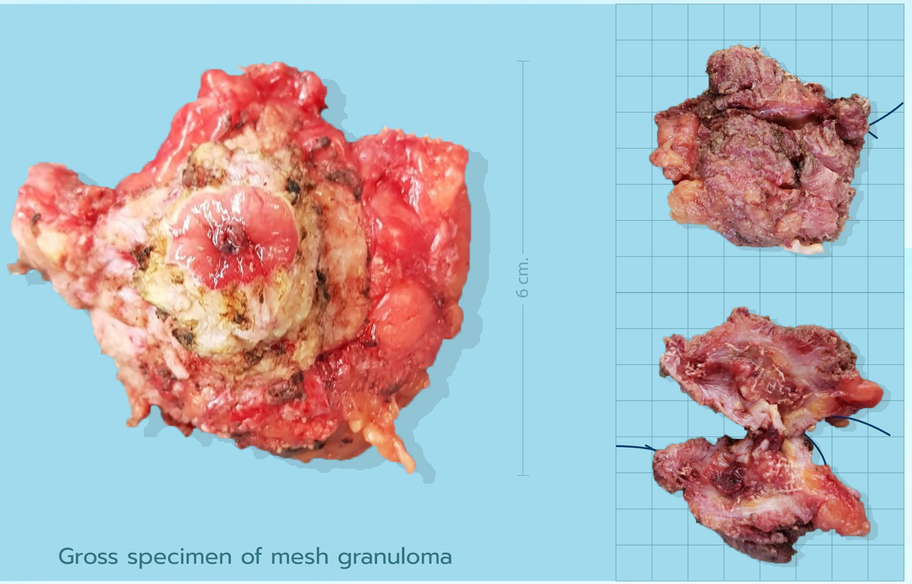
INTRODUCTION

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 of 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. The macrophage, T-cell, and fibroblast play a significant role in forming the fibrous layer over the mesh. 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.



Gross specimen of mesh granuloma

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.

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.

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