Case Report

Mesh Migration into the Urinary Bladder with Calculi Formation and a Vesico-cutaneous Fistula after Inguinal Hernia repair — A Rare Case Report

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Inguinal hernias are the most common type of hernia. Inguinal hernia repair is a widely performed surgical procedure. A tensionless repair with meshplasty is usually employed in the treatment of these hernias with good outcomes worldwide. The use of a polypropylene mesh has reduced recurrence rates to less than 2%. 2 Complications with mesh repair include infection of mesh, sinus tract formation, abscess, visceral adhesions, and fistulas. Mesh migration into the Urinary Bladder along with calculi formation following Inguinal hernia repair is an uncommon complication. Here we report the rare occurrence of mesh migration into the urinary bladder following inguinal herniaplasty along with bladder calculi formation and a vesico-cutaneous fistula.

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Inguinal hernias are the most common type of hernia. Inguinal hernia repair is a widely performed surgical procedure.A tensionless repair with meshplasty is usually employed in the treatment of these hernias with good outcomes worldwide.[1,2] The use of a polypropylene mesh has reduced recurrence rates to less than 2 %.[2] Complications with mesh repair include infection of mesh, sinus tract formation, abscess, visceral adhesions, and fistulas.[3] Mesh migration into the Urinary Bladder along with calculi formation following Inguinal hernia repair is an uncommon complication.[4] Here we report the rare occurrence of mesh migration into the urinary bladder following inguinal herniaplasty along with bladder calculi formation and a vesico-cutaneous fistula.

Case Report

We present the case of a 55 year old, gentleman, who presented with a discharging sinus over the suprapubic region since 6 months. There were associated symptoms of urgency of micturation, hematuria and suprapubic burning sensation since one month that had recently aggravated his condition. Abdominal examination was greatly unremarkable, save for a discharging sinus being present in the suprapubic region along with a "thread like" foreign body emanating from the discharging sinus. There was a background history of a right inguinal hernia repair being done in 2011 which was followed by suprapubic cystolithotomy being done for multiple badder calculi in 2013.

Ultrasonological examination was suggestive of an irregular urinary bladder wall with increased thickness of 10 mm along with 3.8 cm vesicle calculus. There was evidence of 13mm x 10mm and 12mm x 9mm sized mixed echogenic lesion in the right iliac fossa which was suggestive of a stitch granuloma. Bilateral Enlarged inguinal lymph nodes were also noted.

Surgical management was planned and a Pfannnenstiel incision was taken following which the fistulous tract was traced upto the bladder. The fistulous tract contained the prolene Mesh which was traced upto the bladder. On entering the bladder a complex mass of a large calculus with an entangled mesh was encountered. The bladder calculus and mesh were excised and the bladder was repaired. The post operative recovery was uneventful (Figs 1-5).

Editor's Comment :

- **Mesh erosion and migration is a rare complication that can occur following Inguinal hernia repair with meshplasty.**
- **A high degree of suspicion is required in patients that present following inguinal hernia repair with urinary tract symptoms.**
- **A thorough Examination and Investigative evaluation aid in formulating a diagnosis as well as an early intervention reduces the morbidity of the patient.**

Discussion

Mesh migration after Inguinal Hernia repair with meshplasty is unpredictable and not well elucidated. The complications related to hernia mesh repair include infections, contractions, rejections, and, rarely mesh migration.[5] Mesh migration can occur as an early or late complication after hernioplasty. Although, mesh migration into the urinary bladder is the most commonly reported mesh migration in the literature it is still an extremely rare phenomenon.[6]

There are various theories postulated regarding mesh migration and erosion where the sharp edges of the mesh may injure the viscera and induces inflammatory response which causes erosion,[7]and primary mesh migrations caused by inadequate fixation of the mesh along with secondary migrations which are due to the slow and gradual movement induced by foreign body reactions.[5]The Secondary migrations appear to be more befitting our case considering the late migration that has occurred in our case.

Patients presenting with mesh migration after hernia repair may present with hematuria, recurrent urinary tract infections, bladder stones or a vesico-cutaneous fistula. Management of such patients include a thorough History and examination which should direct the suspect towards a diagnosis for mesh migration. Radialogical Investigstions aid in the diagnosis. Urine routine and microscopy with culture would show evidence of a urinary

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Fig 1

Fig 2

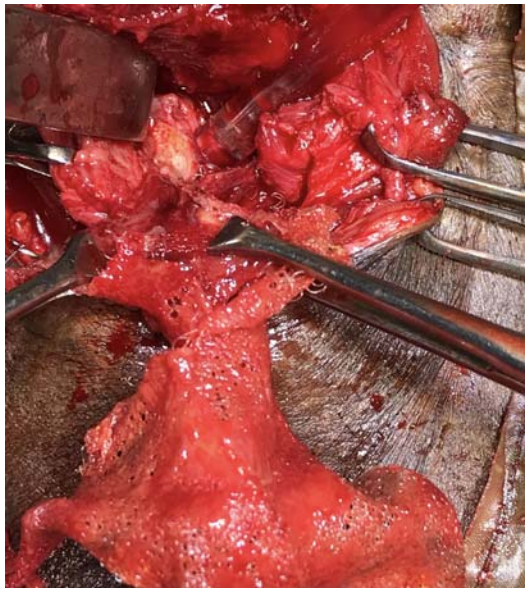

Fig 3

tract infection. Cystoscopic examinations would be able to directly visualise the eroded mesh.[8] Long-term foreign body stimulation may lead to malignant change of the bladder mucosa, thus making it necessary to exclude bladder tumour, particularly in long standing cases of mesh extrusion and migration.[9,10]

Surgical management of the patient could include either an open approach or a Laparoscopic approach for excision of the foreign body along with any calculi that may have formed along with badder closure. Periurethral extraction of the mesh has also been described.[5,7,9]In our case we chose an open method for excision of the mesh and bladder stone along with excision of the vesico-cutaneous fistula.

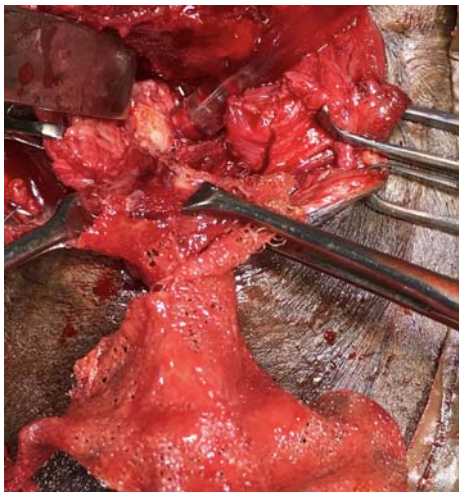

Fig 4

Fig 5

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