Delayed Testicular Compartment Syndrome After Robotic Inguinal Hernia Repair

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Introduction:

- Ischemic orchitis and testicular compartment syndrome are extremely rare after hernia repair
- We present a rare case of delayed testicular compartment syndrome after robotic inguinal hernia repair
- Testicular compartment syndrome has never been reported after robotic inguinal hernia repair

Case Description:

We report a case of a healthy 22-year-old man who underwent an uncomplicated robotic left inguinal hernia repair who required an urgent scrotal exploration on postoperative day 50 for testicular compartment syndrome. He presented to clinic 2 weeks after surgery with mild painless scrotal swelling that was resolving with each postoperative day. On postoperative day 39, a scrotal ultrasound due to painless elevation of the left testicle revealed good testicular blood flow bilaterally, mild left scrotal thickening, no fluid collection or edema, and a nonspecific hyperechoic circumferential thickening of the left spermatic cord consistent with evolving post-operative changes. However, he presented to the emergency room on post-operative day 50 with left flank pain and emesis after exercising and was found to have decreased left testicular blood flow with a left hydrocele on ultrasound (Figure 2). Intraoperatively, he had decreased left testicular blood flow due to a hydrocele and small hematoma underneath a thick rind of tunica vaginalis. There was no torsion present. The Urology team performed a scrotal exploration and opened the thickened tunica vaginalis which restored normal blood flow, released the hydrocele, and saved the viable testicle underneath. The patient had an uneventful recovery.

Figure 1. CT of the abdomen/pelvis performed on post-operative day 50 demonstrating appropriate position of the mesh (yellow arrow) and no intra-abdominal pathology. The red arrow demonstrates an edematous left testicle with a hydrocele.

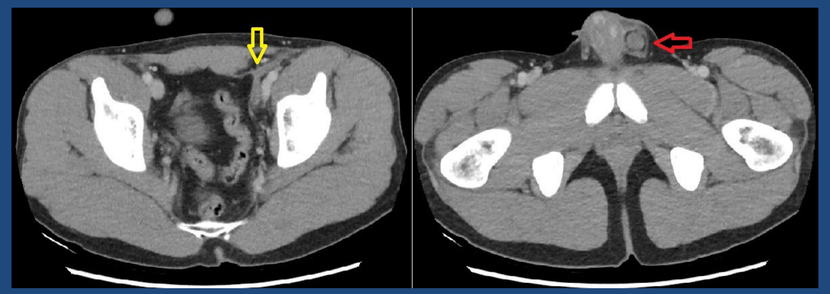
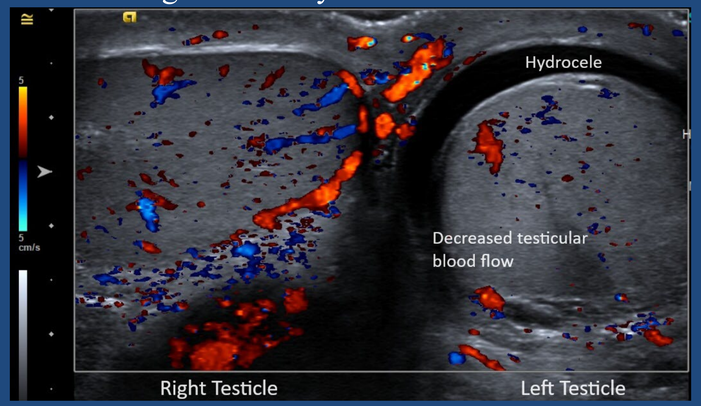


Figure 2. Scrotal ultrasound on post-operative day 50 demonstrating decreased blood flow to the left testicle compared to the right due to hydrocele.



Discussion:

- Ischemic orchitis and testicular compartment syndrome are extremely rare complications after inguinal hernia repair (<1%)
- Diagnose with clinical exam and scrotal ultrasound
- Need increased clinical awareness of this complication to workup painless postoperative scrotal and/or inguinal swelling to earlier diagnose the complication

Ischemic orchitis

- Presents as scrotal pain and swelling 2-3 days after hernia repair
- Cause: Venous congestion due to thrombosis of the pampiniform plexus from surgical trauma and/or inflammatory reaction to the mesh
- Prognosis: Resolves without permanent testicular damage
- Treatment: None generally needed

Testicular compartment syndrome

- Pathophysiology: Impairment of the microcirculation in the testicle due to ↑ venous resistance or extraluminal compression leading to hypoxia
- Causes: Varicoceles, testicular torsion, hernias compressing the veins, ↑ venous resistance and extraluminal compression from a hematoma, hydrocele, or pneumoscrotum or from pelvic or blunt testicular trauma
- Treatment: Treat torsion, varicocele or repair the hernia and/or scrotal exploration to release the hematoma or hydrocele