



## Hematospermia as Unknown Complication of Tension Free Mesh Repair of an Inguinal Hernia

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### Abstract

Implantation of prosthetic meshes has become the gold standard in the repair of inguinal hernias. In contrast to closure by suture, implantation of a mesh provides tension-free hernia repair, resulting in decreased postoperative pain and significantly reduced recurrence rates. However, mesh implantation may bear specific risks. In fact, mesh infection, migration of the mesh and seroma have been recognized as mesh related complications. Here in, we describe a case with hematospermia as a - to date unreported- complication of mesh repair of an inguinal hernia.

**Keywords:** Hematospermia; Tension free hernia repair; Mesh

### Introduction

Hernia repair represents one of the most frequent operations in general surgery. Within the last decades, tension free mesh implantation has become the gold standard in hernia repair. During this time, material and shape of the implanted meshes developed significantly, resulting in the modern light-weight, partly resorbable mesh materials that are commonly used for hernia repair. Importantly and - in contrast to closure by suture - tension-free mesh implantation results in reduced postoperative pain and significantly reduced recurrence rates [1-3]. Accordingly, about 62,500 of the inguinal hernias in 2015 underwent hernia repair by implantation with mesh [4]. However, implantation of a prosthetic mesh bears a numbers of risks including postoperative seroma, mesh infection, fibrosis and mesh migration [5-7]. Moreover, as in inguinal hernia repair the spermatic cord passes through the mesh material, affections of the spermatic cord have been described as complications [8]. In this regard, symptoms may include chronic postoperative pain and in the most severe cases, ischemic orchitis and testicular atrophy [5,9,10].

We herein describe a case of a 67 year old male patient after open inguinal hernia repair with a mesh. The patient presents with the isolated symptoms of persistent hematospermia. To our knowledge this is the first report of persistent hematospermia as a complication of open inguinal hernia repair with a mesh.

### Case Presentation

A 67-year old male patient presented with persistent hematospermia 4 months after open mesh repair of an inguinal hernia. At the time of presentation, the patient denied any scrotal or inguinal pain. Detailed urological investigations, including examination of the prostate and laboratory parameters to exclude a prostatitis and ultrasound examinations of the testis did not reveal possible urologic causes for the hematospermia. Accordingly Magnetic Resonance Imaging (MRI) of the pelvis and testis was arranged for continuative diagnostics. Herein, we found a solitary venous congestion of the spermatic vessels (Figure 1a) and a pronounced scar tissue in direct vicinity of the implanted inguinal mesh (Figure 1b). Arterial blood flow of the spermatic vessels was shown to be undisturbed and no other reasons for hematospermia could be detected. After discussing the MRI findings with the patient, he decided himself for further conservative treatment in order to wait for spontaneous healing of the venous affection. However, after persistence of the hematospermia for one year, the patient decided for operative treatment of the described findings. Accordingly in agreement with the patient, laparoscopic ligation and transection of the spermatic cord of the affected side was performed. The patient was dismissed two days postoperatively without any complications and reported about immediate absence of the hematospermia after surgery.

### Review of the Literature

Hernia repair with prosthetic meshes represent a common procedure in the treatment of

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Received Date: 06 Sep 2018

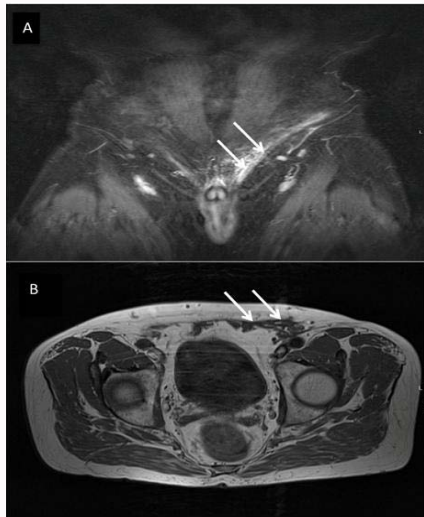
Accepted Date: 08 Oct 2018

Published Date: 10 Oct 2018

#### Citation:

Walter V, Roller J, Glanemann M. Hematospermia as Unknown Complication of Tension Free Mesh Repair of an Inguinal Hernia. *Clin Surg*. 2018; 3: 2150.

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**Figure 1:** Representative MR - images (MRI) of the patient with hematospermia after open inguinal hernia repair with a mesh. The coronar (A; STIR-weighting) MR-image revealed a venous congestion of the spermatic vessels (arrows) in direct vicinity of the implanted mesh material. The transversal (B; T1 weighting) MR-image revealed a scar tissue in direct vicinity of the implanted mesh material.

inguinal hernias [2]. In fact, approximately 1,000,000 mesh repairs of inguinal hernias are performed yearly worldwide [11]. In general, the complication rate is low. The most frequent complications include postoperative pain, seroma, mesh infection and mesh migration [5,6]. However, severe complications by affection of the spermatic cord have been described before. In fact, it was reported before that herniorrhaphy with a mesh might cause inguinal vessel obstruction with subsequent azoospermia, ischemic orchitis or testicular atrophy [5,9,10,12]. Beyond vessel obstruction, also invasion of mesh edges into the vas deferens were described [13]. In this case, symptoms included painful sperm granula four years after mesh repair of an inguinal hernia. In our reported case the patient presented with painless hematospermia 4 months after mesh repair of an inguinal hernia. To our knowledge this is the first description of hematospermia as a symptom of an affection of the spermatic cord by the mesh. MRI diagnostic had shown that the hematospermia most likely was caused by a venous congestion in direct vicinity of the ductus deferens. Due to the increased pressure in the vein, collaterals with repetitive bleedings into the ductus deferens might have occurred. Another possibility is that the mesh might have caused a simultaneous erosion of the vein and the ductus deferens with a subsequent fistula from the vein into the ductus. Nevertheless the described case highlights the importance of an adequate adjusting of the opening of the mesh for the spermatic cord, in order to avoid a compression of the vascular structures and the ductus deferens.

In conclusion, our case report shows that even with undisturbed arterial blood perfusion within the spermatic cord, mesh related complications can arise from venous congestion. In this regard, isolated hematospermia might be the leading symptom.

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