

Case Report

Vasitis Vs Incarcerated Inguinal Hernia: A Differential Diagnosis Challenge

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Abstract

Inflammatory vasitis is a rare entity and a challenging diagnosis to differentiate from inguinal hernia. We are reporting the case of a 54-year-old man with inguinal pain who underwent emergency surgery for suspicion of an incarcerated inguinal hernia diagnosed by ultrasound. No incarcerated hernia was found at surgery. Instead, inflammation was present around the deferens. Since a small indirect, non-incarcerated hernia and a weakness of the inguinal floor were found, repair with a mesh was done. A physical examination the following morning revealed exactly the same induration associated with inguinal pain. A CT scan was obtained on post-operative day one, and the clinical evolution raised suspicion of a vasitis. The patient was then treated accordingly with antibiotics. Ultrasound did not clearly differentiate vasitis from incarcerated hernia. In case of a questionable incarcerated inguinal hernia, a CT scan should be performed and may lead to an avoidance of surgery.

Keywords: Vasitis; incarcerated inguinal hernia; general surgery, inguinal imaging; differential diagnosis

Introduction

Vasitis is a condition separated by Chan and Schlegel [1] into two clinical entities. First, vasitis nodosa is a common asymptomatic urologic disease localized at the vas deferens. This is often associated with a history of vasectomy (50-60%) [2]. Second, the medical literature rarely reports an isolated infection of the vas deferens (inflammatory vasitis) described as an inguino-scrotal pain with the emergence of an irreducible mass that can be easily confused with an incarcerated inguinal hernia. Acute vasitis is mostly caused by backward infections from the prostatic urethra, prostate or seminal vesicles. The common pathogens are

Escherichia coli and *Haemophilus influenzae* [3]. The usual appropriate treatment is antibiotics, as in epididymitis cases [3-5].

Case Report

A 54-year-old man presented at the emergency department with a complaint of left inguino-scrotal pain including the appearance of a non-reducible mass in the groin. He had a vasectomy 5 years ago, and suffered from type 2 diabetes mellitus. The patient did not report symptoms of urinary tract infection but had a temperature of 38.2 °C. The patient had been with a stable sexual partner for 17 years. He had no history of sexually transmitted infections but was known for previous urinary tract infections. Physical examination revealed a redness of the scrotum and an irreducible mass was palpated in the left inguinal area and in the posterior tes-

tes area. Laboratory results revealed a leukocytosis ($14.3 \times 10^9/L$) with 82% neutrophils; the C-reactive protein was elevated at 130.2 mg/L. Urine analysis revealed 11-20 leucocytes count and positive nitrites.

A testicular ultrasound revealed a distension of the inguinal canal with a 4-cm hyperechoic mass extending to the scrotum. The presumed hernia seemed to contain omentum but no bowel loops (Figure 1A). The color doppler imaging showed hypervascularity suggesting venous congestion (Figure 1 B).

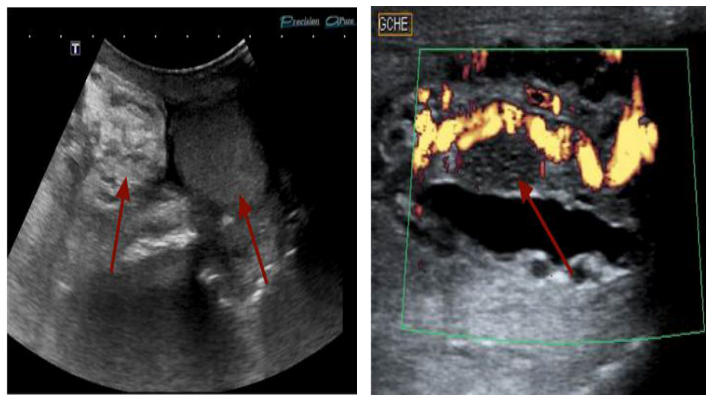


Figure 1: Pre-operative pelvic sonography: (A) Red arrow on the left: hyperechoic inguinal mass suggestive of hernia; red arrow on the right: testicle, (B) Red arrow: Thickened spermatic cord with hyperemia on color doppler ultrasound.

Following the diagnosis of an incarcerated inguinal hernia, the patient was brought to the operating room to undergo an inguinal hernia surgery repair. During the operation, a small indirect hernia was noticed with no content and the presence of inflammatory tissue limited around the vas deferens. A mesh was positioned to strengthen the weakness of the inguinal area. The day after surgery, the surgeon noticed the persistence of an inguinal mass and associated pain. Urine culture was positive for an *E. coli* urinary infection with $>10^8$ bacteria/L. A new ultrasound was prescribed and the radiologist noticed the persistence of an inguinal mass consistent with a hernia. This diagnosis did not correspond to what was observed during surgery, so a CT scan was done to characterize the condition with more precision. The scan revealed the presence of iatrogenic air densities in the region of the inguinal canal, with inflamed fat and a persistence of fat hernia in the left hemiscrotum. Calcification of the vas deferens was also identified (Figures 2).

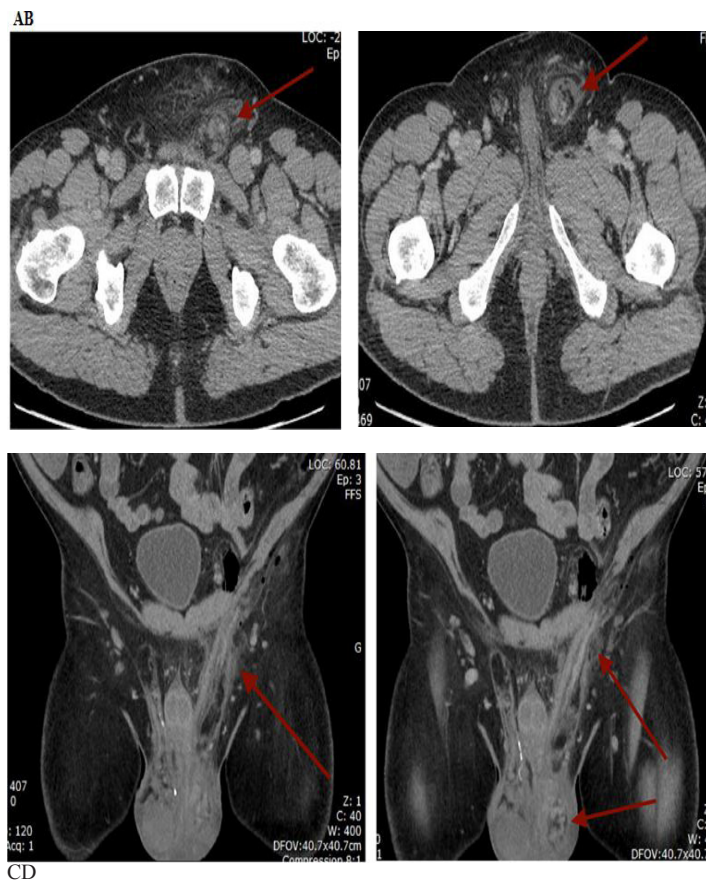


Figure 2 Post-operative imaging: (A and B): Transverse CT images showing inflammation of the left inguinal canal (red arrow) compared to the normal cord on the right.

(C) Coronal CT image showing abnormal left spermatic cord edema and fat infiltration (red arrow).

(D) Coronal CT image showing prominence of the vessels of the left spermatic cord (red arrow).

With the persistence of pain, a urology consultation was requested for a second opinion. The vasitis was confirmed after reviewing the scanner images. PCR was negative for gonorrhea and Chlamydia [6,7]. Vasitis was treated with the appropriate antibiotics for *E. Coli*. Therapy brought a very good response and diminution of the pain within a few days. The patient observed resolution of symptoms and hernia surgery repair did not affect recovery.

Discussion

Vasitis was reported by Wesson [8] in 1926 and Wolbarst [9] in 1933, being clinically confounded with hernia (Table 1).

Authors and year of publication	Number of cases of vasitis	Patients	Radiologic Investigation	First Diagnosis	treatment
Maitra AK 1970[10]	1	67 yo	None	Incarcerated Inguinal hernia	Surgery: Drainage of an abscess adjacent to the vas deferens. Excision of the cord and testis
Bissada BK 1976[11]	1	46 yo	None	Incarcerated Inguinal hernia	Surgery: excision of the vas
Ryan SP1988 [12]	1	25 yo	None	Incarcerated Inguinal hernia	Surgery: drainage of an abscess adjacent to the vas deferens
Eddy K 2011 [3]	3	40, 32 and 61 yo,	Ultrasound and CT	Vasitis	Antibiotics
You SH[7] 2013	1	69 yo	CT	Strangulated Inguinal hernia	Debridement and antibiotics
Patel K 2014[13]	1	55 yo	Ultrasound and MRI	Vasitis	Antibiotics
Romero Marcos JM 2016 ¹⁴	1	42 yo	Ultrasound and CT	Amyand's hernia	Laparoscopic exploration. Incisional biopsy of the inflamed-vas deferens
Kerkeni W 2016 15	1	31 yo	Ultrasound and CT	Vasitis	Antibiotics

Table 1: More recent literature lists ten cases of inflammatory vasitis still clinically or radiologically confused with the common diagnosis of incarcerated inguinal hernia.

In these case reports, it is recommended to use a CT scan [3,5] to differentiate these two entities. In almost all case report of inflammatory vasitis, the CT scan allowed a formal diagnosis of this clinical entity [3-5]. A unique case presenting inconclusive scanner imaging was described by S. Hye You et al [7]. As a case of "Emphysematous Vasitis" in a patient with a history of vasectomy, type 2 diabetes and a urinary infection with *E. coli*. Another case was confused with Amyand's hernia. According to the literature review, most of the vasitis cases were due to a urinary tract infection by a microbiological pathogen [4] in patients with previous vasectomy. Therefore, painful inguinal mass with urinary tract infection and clinical history of vasectomy could guide clinicians to the diagnosis of vasitis. Urinary tract infection is not related to incarcerated omentum, as suspected in this case with the ultrasound. Infectious signs and urinary tract infection should have led to a CT scan, avoiding unnecessary operation. Surgeons and radiologists should be aware of this rare condition.

Conclusion

In conclusion, in case of questionable incarcerated inguinal hernia, a CT scan should be performed. A high level of suspicion by the radiologist and the surgeon is desirable to guide the diagnosis. The symptoms and the patient's history of vasectomy associated with

the urinary tract infection could have led the clinician to a faster diagnosis of inflammatory vasitis and therefore spared him the unnecessary surgery. These symptoms complex should be pointing to differential diagnosis of vasitis. Antibiotherapy is the treatment for vasitis, not surgery [3-5].

Informed consent statement: The patient gave informed, written consent for publication on this case report.

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Conflict of interest: The authors declare that they have no conflict of interest.

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