Case Report

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Acute Vasitis Presenting as an Inguinoscrotal Swelling: A Diagnostic Dilemma

Akanji Akinwunmi O¹, Akinola Oluwaseun O², Akinola Rachael A^{*3}

¹FWACS, Radiologist, Consultant, Lagos State University Teaching Hospital, Department of Radiology, Nigeria

²MD, Urologist, Consultant, Lagos State University Teaching Hospital, Department of Surgery, Nigeria

³FMCR, Radiologist, Professor, Lagos State University College of Medicine/ Lagos State University Teaching Hospital, Department of Radiology, Nigeria

Corresponding Author: Akinola Rachael A, FMCR, Radiologist, Professor, Lagos State University College of Medicine/ Lagos State University Teaching Hospital, Department of Radiology, Nigeria. **Email:** adeyanjuakinola@yahoo.com

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Abstract:

Vasitis or inflammation of the vas deferens and spermatic cord has been identified as a cause of scrotal swelling and needs to be differentiated from other causes of groin swelling like epididymitis, orchitis, testicular torsion, saphenous varix, femoral and inguinal hernia. This is essential in order to prevent needless surgery in such patients.

Duplex Doppler Ultrasound scanning in expert hand alone is adequate in differentiating acute vasitis from other causes of groin swelling. Computed tomography scan is also often needed to confirm the ultrasound findings. This case is therefore presented to emphasize the difficulty in diagnosing acute vasitis and differentiate it from inguinal hernia, which is the more common clinical diagnosis given in cases of groin swelling

Keywords: Inguinoscrotal Swelling, Vas Deferens Inflammation, Inguinal Hernia, CT Scan, Doppler Studies

Background:

The vas deferens is a highly muscular tube and the only structure in the body with its lumen thinner than the wall¹. This implies that any pathology in it will cause increase resistance to the flow of its content. Tumor within the vas deferens is rare in literature, however there are scanty reports on the inflammation¹.

Two patterns of inflammation had been described; Vasitis nodosa and Acute vasitis^{1,2}. Vasitis nodosa is the commonest retrieved from that is reported in the literature. It is a benign condition that was first reported by Benjamin in 1943, who described it as a non-tuberculosis cause of vasal beading³. It is usually associated with a history of vasectomy and patients present with a nodular mass in the vas deferens which may not be symptomatic and they require no specific treatment^{1,3,4}.

Acute vasitis is less reported when compared to vasitis nodosa. Pathogens causing it include Escherichia Coli and Haemophilus influenza¹. Patients presenting with this condition usually present with a mass in the groin or scrotal spermatic cord^{1,2}. We therefore report a case of acute vasitis who presented in the radiology department of a private hospital in Lagos, with a clinical diagnosis of a painful scrotal swelling

Case Presentation:

A 62yr old male presented to us on account of a 4 days history of left groin pain and inguinoscrotal swelling. There was no associated history of fever and cough. Scrotal swelling was constant and was not reducible. There was no associated abdominal pain nor abdominal distension, and no vomiting. The patient denied any history of constipation or diarrhea. There was no abdominal mass and no anal protrusion. Patient does not lift heavy objects.

There was no history of urinary tract infection and sexually transmitted diseases.

The patient had a similar pain about 33yrs before the recent episode for which he was managed by traditional doctors because he was financially constrained. However a few years after that occurrence he presented in the hospital for a scan, when he was told he had only one testicle in the left scrotum. His right scrotal sac was empty. There was no past history of surgery. He is a known hypertensive, been compliant with his drugs. He is not a diabetic and has no history of chronic cough.

Patient is a driver and he takes regular African diet.

He is married with six children and sexually active. He neither smokes nor drink alcohol.

Examination of the groin revealed a swelling in the left groin which was tender. One can get above and below it and can be separated from the testes. There was no palpable lymphadenopathy. The right testis was not palpable.

Ultrasound examination (Fig1a), revealed expansion of the left inguinal canal by a heterogenous mass predominantly hyperechoic. The mass was seen to be extending from the inguinal canal to the upper part of the scrotum. The mass was highly vascular, however there was no varicocele. There was significant hydrocele noted but the epididymis and testis were essentially normal (Fig1b). No

bowel loops were seen in the left hemiscrotum. The absent right testicle was also confirmed by ultrasound.

Computerized tomography scan (Fig2a, b and c) showed no bowel loop herniating from the abdomen. There was inflammatory stranding and effacement of the normal vas deferens and spermatic cord fat. Extension into the scrotal portion of the vas deferens with associated inflammatory change and hydrocele were seen. Only the left testicle was also noted on the examination.

The condition abated dramatically after a course of antibiotics.

Fig 1a showing a highly echogenic mass adjacent to the upper pole of the left testis.

Fig 1b showing a sonographically normal testis with massive surrounding hydrocele.

Fig 2a Axial CT scan showing effacement of the left vas deferens and inflammatory fat stranding in the superior aspect of the scrotum.

Fig 2b Coronal Reformatted CT scan showing no herniation of bowel loops. There is swelling and thickening of the vas deferens and spermatic cord on the left with surrounding fat stranding when compared to the right.

Fig 2c Sagittal Reformatted CT scan showing inflamed left vas deferens and spermatic cord with no bowel herniation.

Discussion:

Chan and Schegel classified vasitis or inflammation of the vas deferens as either vasitis nodosa or acutely painful infective vasitis. Vasitis nodosa is a chronic inflammatory disorder associated with obstruction or injury to the vas deferens resulting in leakage of spermatozoa, causing a characteristic inflammatory reaction with excessive regeneration of the vasa epithelial lining. Other clinical settings in which vasitis nodosa had been described are severe chronic cystitis, prostate cancer and primary infertility¹.

Acute Infectious vasitis is however a very rare condition. Four cases were reported in English language medical journals from 1933 to 2011². Two cases were later reported by Kathleen from Canada in 2011². Ferrant et al⁵ and Marcos et al⁶ reported two cases and one case respectively in 2017. There has been no publication of any from Africa in literature after thorough search. This may be attributed to its under diagnosis or misdiagnosis. It might be due to its repeated misdiagnosis as an inguinoscrotal hernia.

Acute vasitis results from an acute infection considered to be due to the retrograde spread of urinary pathogens, as is seen in epididymitis. The pathogens commonly associated are *Escherichia coli* and *Haemophilus influenza*, however, other rare pathogens such as *Brucella* and *Tuberculosis* have also been described^{1,3,7,8}.

Patients with acute vasitis usually present with a mass in the groin or scrotal spermatic cord^{1,2,7,8,9}. This was demonstrated in the index case. Therefore, vasitis should be included in the differential diagnoses of such presentations such as testicular and epididymal appendages torsion, epididymitis, orchitis, and inguinal masses.

The treatment of acute vasitis is mainly antibiotics, though surgical exploration and drainage may be necessary in more severe cases.^{1,2,7,8,9,10} Oral antibiotics was sufficient to cause resolution in the index case as there was no need of surgical intervention.

The diagnosis of vasitis is complicated by its unclear ultrasonographic findings^{2,7,9,10}. The inflammatory mass is often confused

with inguinal hernias and other groin swellings. We experience a similar situation as computerized tomography scan had to be carried out to make the definitive diagnosis. Computerized tomography scan allowed a formal diagnosis of acute vasitis to be made in most case reports^{2,5,6,7,8}.

Acute vasitis is often diagnosed at surgery^{5,6}. This is contrary to the index case as the radiologist had a high index of suspicion and requested for a complementary computerized tomography scan to clarify any doubts.

Learning Points:

- Acute vasitis should be considered in all cases of groin and scrotal masses.
- A high index of suspicion is required by the attending surgeon and radiologist to make a definitive diagnosis and avoid unnecessary surgery in patients.
- CT Scan would be required to confirm diagnosis

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