Case Report

A Rare Presentation of Acute Epididymoorchitis Leading to Infarction of Testes with Catastrophic Outcomes: Case Report and Literature Review.

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Abstract:

An acute scrotum is an emergency clinical scenario in urological emergency department. High resonance scrotal Sonography with colour Doppler is the imaging modality of choice for evaluation of acute scrotum as it helps in distinguishing between testicular torsion and epididymoorchitis, the two most important entities of testicular pain. Testicular infarction is a rare but potential devastating complication of epididymoorchitis. We report a rare case of epididymoorchitis evolving into testicular infarction and subsequently abscess leading to catastrophic outcomes inspite of receiving extended spectrum penicillins.

Introduction:

Acute scrotum presenting in urology emergency requires prompt evaluation as delay in diagnosis can miss testicular torsion leading to testicular loss. Epididymoorchitis is a common cause of testicular pain which can mimic the signs and symptoms of testicular torsion. We present a rare case of Epididymoorchitis in which subacute presentation and hesitancy lead to delayed reporting to physician and further delayed reporting to urologist leading to testicular infarction, abscess formation and orchiectomy with exorbitantly high costs in the process of salvaging the testes due to ambiguity of presentation and young age of the patient.

Case Report

A 25 yrs young unmarried male presented to primary care physician with one week of mild right testicular pain (dragging sensation) associated with swelling which increased markedly for the last three days. There were no urinary symptoms and he was voiding normally. Labs are as shown in table 1.USG scrotum showed bulkier right testes 4.8x3.8x2.2 cm with homogenous granular echotexture, minimal free fluid. Right epididymis was bulky with heteroechoeic echotexture and right spermatic cord was thickened. Right testes and epididymis showed increased vascularity and subcutaneous oedema of right scrotal sac was seen with opinion of right epididymoorchitis (Fig.1) He was put on broad spectrum antibiotics-Piperacillin +Tazobactum for three days but did not respond. After three days of antibiotics labs were as shown in table 1(19/09/21). He presented to tertiary care centre ten days after onset of symptoms(21/09/21). USG scrotum with color flow evaluation showed rt testes was bulkier 5.3x3.2x5.1 cm with hypoechoeic echopattern with few specks of peritesticular vascularity with mild degree of septated fluid around testes. Epididymis was prominent with hypoechoeic echopattern with increased vascularity. Right spermatic cord was thickened and vascular, scrotal wall oedema present (Fig:2).

Date	19/9	21/9	23/9	24/9	26/9	30/9	4/10	6/10	8/10
TLC	25950	26950	23070	25300	23000	23100	11500	18400	10800
DLC	92/7/1	90/7/3	76/14/9	81/14/4/1	80/16/4	80/14/4/2	76/22/2	81/14/5	62/30/8
Platelets		3.88 lacs	3.81 lacs	3.34 lacs	3.54 lacs	6.02 lacs	3.54 lacs	3.72 lacs	3.60 lacs
B.Urea	24								15
S.Cr	1.2								0.8
RBS	110								
CRP	106.2								
Urine R/M	6-8P. Cells/ hpf								
Urine C/S	-		sterile						
S.α-foetoprotein (ng/ml)				1.18					
S.β HCG Miu/ml				3.55					
S. LDH				213					
PTI				92.8					
Pus C/S							E.Coli	ESBL	Positive

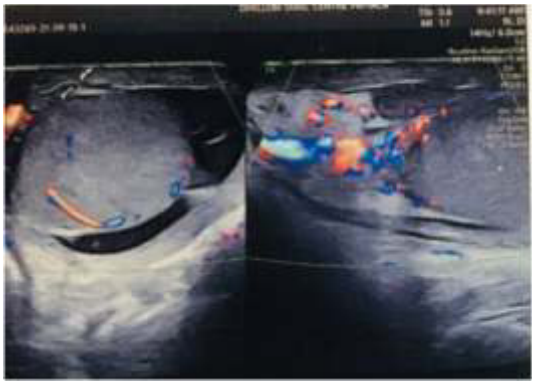

Fig:1 USG and colour Doppler RT. Testes & Epididymis
Showing increased vascularity (19/09/2021)

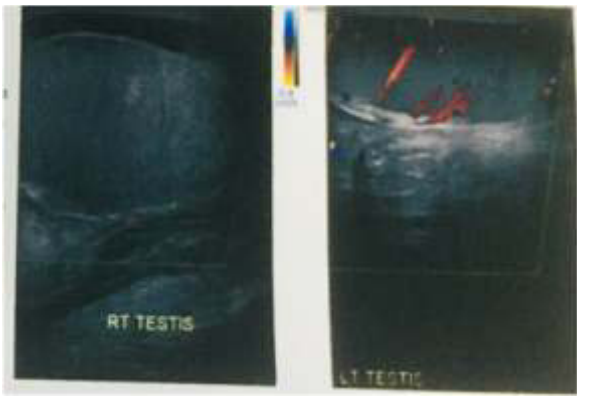

Fig: 2 USG and colour Doppler RT.Testis
Showing absent vascularity (21.09.2021)

Showing increased vascularity (19/09/2021) showing absent vascularity (21.09.2021)

USG on 25/9/21 showed rt testes 4.8x3.2x2.8 cm slightly hypoechoeic with decreased internal vascularity on CDFI but testicular artery showed normal color flow with PSV of 11.4 cm/sec.rt epididymis was thickened with increased vascularity and scrotal sac was thickened. Diffuse thickening of spermatic cord s/o funiculitis. On 28/9/21 USG showed rt testes 4.3x3.1x5.3 cm heterogenous in echopattern with peripheral vascularity on CDFI .rt epididymis was thickened with mildly increased vascularity and scrotal skin showed subcutaneous oedema thickened. spermatic cord was heterogenous with increased vascularity. On 04/10/21 USG showed rt testes to be 3.73x2.8x2.6 cm heterogenous in echopattern with central echogenic area lower pole 2.1x2.1cm? early abscess. Rt epididymis was heterogenous with increased vascularity and scrotal skin showed subcutaneous oedema thickened. spermatic cord is heterogenous with increased vascularity. On 06/10/21 rt testes showed irregular outline and was bulky. Parenchyma was replaced by fluid collection with thick internal echoes with no significant intratesticular vascularity seen .rt epididymis and cord were bulky and echogenic s/o rt epididymoorchitis with testicular abscess and non viable rt testes. We aspirated 1 ml of thick pus which was sent for culture and sensitivity.

With rarity of USG findings in young unmarried male we performed a literature review and noted that the most common causative organisms of epididymitis are Neisseria gonorrhoeae and Chlamydia trachomatis 1 in younger patients, but these rarely lead to testicular infarction. However, in middle-aged and older adults, the causative organisms are usually Escherichia coli and Pseudomonas aeruginosa2.We thus counselled the patient regarding scrotal exploration and need for emergency orchiectomy as testes had pus collection and was non viable. Informed consent was provided by patient and relatives and patient shifted to operation theatre. On inspection a visible yellowish hump seen on anterior surface of rt testes(Fig.3).Testicular vessels and vas deferens were transfixed and ligated separately through subinguinal incision. On scrotal exploration an intratesticular abscess was present involving upper and middle part of testes,25ml of thick creamish pus aspirated and sent for culture and sensitivity. Lower pole of testes showed necrotic seminiferous tubules and Tunica albugenia was ruptured. Epididymis was inflamed and involed in a phlegmon (Fig.4) .Pus was positive for ESBL E.Coli. He was continued on iv.Imepenem and cilastin, amikacin and metrogyl for three days and Imepenem and cilastin for another five days, symptoms improved and discharged after stitch removal on Faropenem ER 300mg for one week.

Figure-3

Figure-4

Discussion

Presentation of acute scrotum to emergency department requires prompt evaluation. It is important to rule out the diagnosis of testicular torsion as the time to surgical intervention for testicular torsion is directly correlated to the testicular salvage. Acute epididymoorchitis may present with similar clinical signs and symptoms , imaging is done with color Doppler ultrasonography to characterize epididymal and testicular flow to differentiate between testicular torsion and epididymoorchitis. The detection of intratesticular blood flow using Doppler sonography is 86% sensitive, 100% specific, and 97% accurate for the diagnosis of torsion and testicular ischemia in this scenario.3Testicular infarction has been reported as a rare but serious potential complication of epididymoorchitis, and has been described in cases of bacterial epididymoorchitis complicated by abscess formation despite appropriate antibiotic treatment4 which very much corroborates with our case scenario. Global testicular infarction following epididymoorchitis is an exceedingly rare, but serious complication with less than 10 cases reported in the literature. Sanders et al. describes the coexistence of epididymoorchitis with testicular is chemia in a patient with epididymoorchitis who on scrotal Doppler ultrasonography had reversal of testicular diastolic flow likely secondary to infarction 5. Surgical exploration showed a non-viable testis, and pathology from the orchiecto my confirmed suppurative epididymoorchitis with ischemic necrosis of the testis. The reversal of Doppler diastolic flow in acute epididymoorchitis is suggestive of testicular venous infarction 5. Gerscovich et al. describes a patient with epididymoorchitis that had reversal of diastolic flow to the ipsilateral testicle in addition to forward arterial flow on ultrasonography who was discharged home with antibiotics but remained symptomatic 6. Repeat ultrasonography 3 weeks later showed no intratesticular flow, and a gangrenous left testis and epididymitis was discovered upon scrotal exploration. A similar patient was taken immediately for scrotal exploration for findings of reversal of diastolic flow on ultrasonography, but no evidence of testicular ischemia was found intraoperatively 7. Repeat ultrasound on post-operative day one performed for persistent testicular pain demonstrated absent flow to the testicle, and he underwent orchiectomy for an infarcted testis. But in our case patient remained hospitalised as the total leucocyte counts and polymorphs were persistently high and dropped once to near normal and started rising again when clear abscess formation and walling off started inspite of patient on imepenem and cilastin combination.

The reasons for testicular infarction during treatment of epididymitis have been suggested to be due to increased exudate production owing to inflammation and tissue edema causing testicular compartment syndrome 8,9. which beholds the findings in our case where inspite of ESBL producing E.coli sensitive to imepenem+cilastin, it was not responding due to poor penetration of antibiotics due to vascular compromise in the upper pole and mid part where subsequently abscess developed but lower pole showed seminecrotic tubules and with epididymal phlegmon with acute inflammatory infiltrate s/o testicular abscess with global testicular infarction withacute epididymoorchitis on histopathology specimen. It has also been suggested that endothelial damage leading to increased susceptibility to thrombus formation by bacterial exotoxins10 may lead to tissue circulatory insufficiency and hypoxia 8,9.Another proposed mechanism could be Venous insufficiency and thrombosis due to edema of the epididymal head with subsequent mass effect upon the testicular veins. In addition, as it is generally difficult to differentiate between testicular tumors and testicular infarction 11 because of testicular prognosis as 61% of patients with testicular infarction can be treated conservatively. In this review, orchiecto my was performed in 34 out of the 48 patients (71%) 12.In our case we got tumour markers doneto rule out underlying torsion due to tumour as a cause of infarction as patient was young and in torsion age group but these were within normal limits (Table-1). Henceforth from the literature it is still in grey zone whether we should proceed for up front orchiectomy once the testes is non vascular on Doppler sonography in Acute epididymoorchitis to save on the heavy costs and morbidity involving the salvage of testes or wait for the abscess formation and then proceed for the procedure to avoid any legal implications as the patient being young and unmarried. Being rarity

further case series may resolve the issue on intervention time.

Conclusion

Infarction of the involved testicle is a morbid and rare complication of Acute epididymoorchitis. In case of sub acute presentation and delayed treatment patient remains persistently symptomatic without resolution despite appropriate broad spectrum antibiotic therapy and this only leads to exorbitantly high costs and morbidity in the process of salvaging an already infracted and infected testes which finally ended in orchiectomy (catastrophic outcome for the age). Its still in grey zone whether to proceed for early orchiectomy or wait for abscess formation.

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Ethics Approval Verbal and written informed consent was obtained from the patient.

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