

Case Report

Testicular necrosis: a rare complication of poorly controlled diabetes mellitus

Parthasarathi Hota*

Department of General Surgery, Pacific Institute of Medical Sciences, Udaipur, Rajasthan, India

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*Correspondence:

Dr. Parthasarathi Hota,

E-mail: psh1011@rediffmail.com

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ABSTRACT

A case presented here depicting testicular necrosis in a 45 years old male patient with diabetes mellitus. Past history suggestive of diabetes with very irregular medication. Patient presented with gradually increasing right testicular enlargement for three weeks. Ultrasonography showed abscess formation with no vascularity in right testis. Right orchiectomy done. Histopathology report confirmed testicular necrosis. Testicular necrosis is a common complication after torsion which leads to orchiectomy. In those cases, patients present with acute onset pain in the scrotum, usually unilateral. On examination there is acutely tender testis with red and angry looking overlying skin. In diabetic patients, urinary tract infections are common occurrence as well as epididymo-orchitis. Patients present with testicular pain with fever, leucocytosis etc. But testicular necrosis is extremely rare. Long term complications specific to diabetes mellitus include retinopathy, nephropathy and neuropathy. Patients with all forms of diabetes of sufficient duration, including insulin-dependent diabetes mellitus and non-insulin-dependent diabetes mellitus, are vulnerable to these complications, which cause serious morbidity. Testicular necrosis is a very rare complication of diabetes mellitus. An internet search did not reveal any article of testicular necrosis as a complication of diabetes. A case of unilateral testicular necrosis as a complication of diabetes mellitus is presented here for the first time. Probably accelerated microangiopathy along with poor control of blood glucose led to this unique complication.

Keywords: Testicular necrosis, Diabetes mellitus, Microangiopathy, Orchiectomy

INTRODUCTION

Diabetes is strongly associated with microangiopathy and accelerated atherogenesis. Testicular infarction is an extremely uncommon complication, usually spontaneous. It may mimic testicular neoplasm. It is probably the first reported case of unilateral testicular necrosis due to diabetic microangiopathy. In the light of this case and a review of literature, the various aspects of this clinical and pathological entity are discussed.

CASE REPORT

A 45 years old man presented with three weeks history of gradually increasing right testicular pain. There is also

testicular swelling. He had few bouts of fever. No history of any urinary complains. No history of any trauma. Past history suggestive of long-standing diabetes mellitus with very irregular medication. No other co-morbidity.

Physical examination showed tender and enlarged right testis. The scrotal skin was normal. Left testis was non-tender and normal in size. No hernia or other abnormality detected on examination. Patient admitted in surgical ward.

Doppler ultrasonography

Right testis enlarged in size (Volume 38 cc), Right testis shows heterogeneous echo texture and multiple hypo to

anechoic lesions with internal echoes, largest measuring 1.1 cc. Minimal vascularity seen at the upper pole of right testis. Rest of right testis does not show any vascularity. No free fluid seen in scrotal sac (Figure 1).

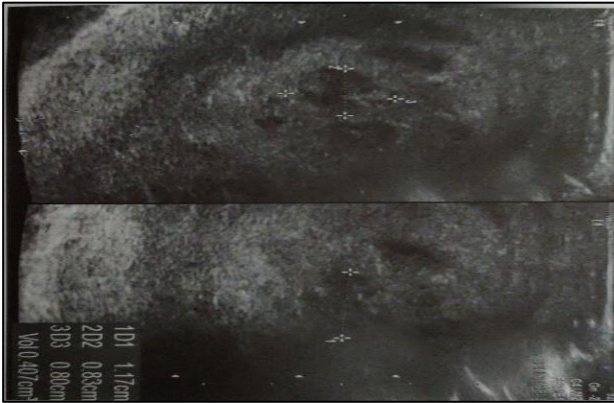


Figure 1: Ultrasonography shows multiple testicular abscess.



Figure 2: Resected specimen.

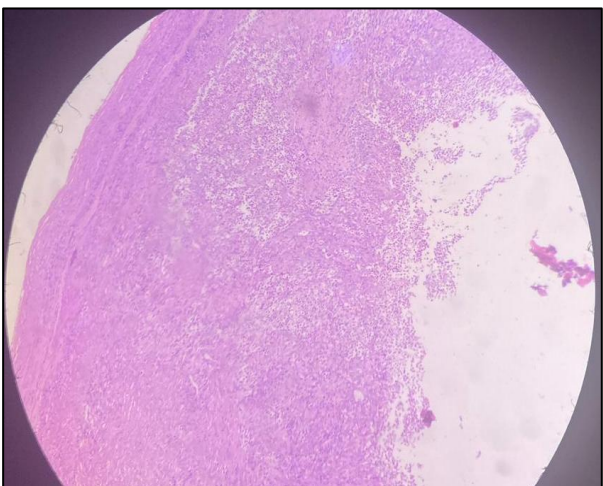


Figure 3: Histological section testicular necrosis, inflammatory cell infiltrate and abscess formation.

There was no pus cell in urinary microscopic examination and no growth on urinary culture.

On the day of admission, random blood glucose was 287 mg/dl. Next day, fasting blood glucose found to be 216 mg/dl and post-prandial blood glucose was 256 mg/dl. HbA1c was 12.4% reflecting very poor control due to erratic medication taken by the patient.

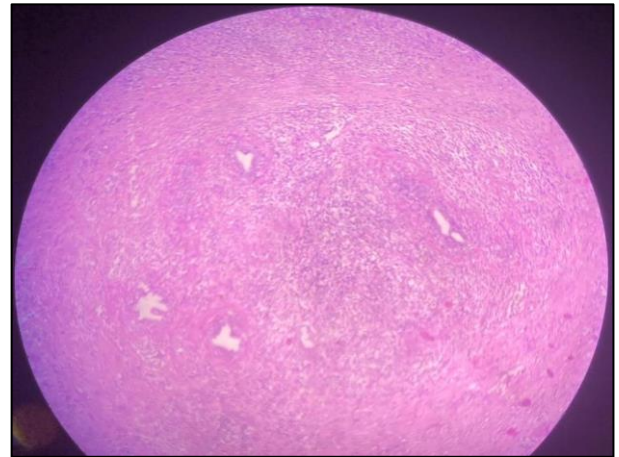


Figure 4: Histological section testicular necrosis, inflammatory cell infiltrate and abscess formation.

Routine blood investigation revealed increased total WBC count of 12000/cmm (N-78, L-16, M-04, E-02). Haemoglobin was 12 gm/dl. Mildly elevated ESR of 26 (Normal range 0-20). Kidney function tests including serum urea and creatinine was within normal range.

Liver function test showed increased ALP of 183U/L (normal range 38-126) and mildly increased AST of 62 U/L (Normal range 5-46).

Tests for serum markers of testicular neoplasm like alpha fetoprotein and chorionic gonadotropin were negative.

Patient started on broad spectrum antibiotics and insulin. Patient and relatives explained about the condition and posted for orchiectomy. High inguinal orchiectomy performed and specimen sent for histopathology. (Figure 2)

Histopathology report

Multiple section examined showed degenerated seminiferous tubules, stroma shows acute inflammatory cells chiefly comprises of neutrophils, lymphocytes, eosinophil, plasma cells along with necrotic debris forming abscess. Sections from spermatic cord shows congestion and inflammatory infiltrate. These histological features are suggestive of testicular necrosis with abscess formation (Figure 3 and 4). Post-operative period was uneventful.

DISCUSSION

Global infarction of the testis is not uncommon and is usually caused by torsion of the spermatic cord,

incarcerated hernia, infection, trauma or vasculitis. But testicular necrosis as a complication of poorly controlled diabetes is extremely rare. Probably this is the first such case is being reported.

Some other possible risk factors include epididymitis, protein S or antithrombin III deficiency, sickle cell disease, malakoplakia, leukaemia, ectopic testis, varicocele and idiopathic causes.¹⁻⁷

The tissue hypoxia, vascular insufficiency due to diabetes microangiopathy is responsible for the testicular damage, maturation arrest and hypo spermatogenesis. The lesion was characterized by necrotic seminiferous tubules associated with nuclear debris, congestion and inflammatory infiltrate.

To the best of the author's knowledge, this is the first reported case of unilateral testicular necrosis as a complication of diabetes mellitus.

Pain was the most important symptom. Affected testis was uniformly enlarged, and tender. Sometimes it can give rise to the suspicion of testicular neoplasm.

Tumour markers and urine culture are negative.⁸ The question is whether we can preoperatively differentiate this entity from neoplasia. Otherwise, any hypo echogenic testicular lesion should be considered malignant unless demonstrated. On the basis of the ischaemic nature Doppler ultrasound might be an answer.

Some authors suggest that an avascular pattern in patients with no other evidence of malignancy would support the diagnosis of infarction.⁹ However, a large number of testicular neoplasms exhibit hypovascularity. Magnetic resonance imaging might be of great value as the ischaemic lesions have a characteristic pattern, although neoplasia could not be ruled out.¹⁰ Orchiectomy is usual management option here. High inguinal approach taken to prevent involvement of the scrotal skin in the event the histopathologic picture turns out to be a malignant one.

In conclusion, the clinical and pathological findings in this case support the diagnosis of a unilateral complete testicular infarction secondary to diabetes microangiopathy. It also shows the importance of proper glucose control and compliance to the anti-diabetic medications.

CONCLUSION

A diabetic patient can present to clinician with myriad of complications. Usually, they fall into the domain of endocrinologists. But sometimes surgeons are involved because of some complications, mainly infective. Infective complications and diabetic foot ulcer are the commonest

reason to seek a surgeon's help. But unilateral testicular necrosis as a complication is unheard of. It is also going to be difficult to distinguish this from testicular neoplasm which has far commoner incidence. Therefore, gradual onset testicular pain in a diabetic, especially in a poorly controlled one, may be developing into testicular necrosis. Once necrosis is established, prompt orchiectomy is the standard management. As noted in this article Doppler ultrasonography is of great help to note the status of vascularity in the affected testis. This complication should be kept in mind to avoid unnecessary delays in treatment. Again, emphasis is to be given for proper and timely control of diabetes. Patient education regarding the importance of glucose control is imperative.

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