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Case Report

A rare cause of scrotal abscess: xanthogranulomatous epididymitis

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ABSTRACT

Xanthogranulomatous epididymitis is a rare benign process with destruction of tissue and replacement by cellular infiltration of foamy macrophages, dense lymphocytes and plasma cells. Literature has very few case reports. We reported here a case of a 72 years old male who presented as scrotal abscess with bilateral hydrocele on ultrasound. On exploration he had normal right testis with abscess localized to epididymis underwent right epididymectomy with orchidopexy. Histopathology reported necrosis and abundant foamy macrophages and plasma cells findings suggestive of xanthogranulomatous epididymitis.

Keywords: Epididymitis, Oorchitis, Scrotal abscess, Xanthogranulomatous

INTRODUCTION

Xanthogranulomatous inflammation is a benign condition which can be acute or chronic. Acute condition is usually caused by *E. coli* and *Proteus* and usually associated with history of recent per urethral surgery and instrumentation.[1,2] Chronic inflammation such as tubercular and xanthogranulomatous have mild symptoms and can be misdiagnosed as testicular tumor or chronic scrotal abscess. Xanthogranulomatous inflammation has been described in kidney, gallbladder, vagina, ovary, testis, epididymis and bones.[3,4] Only few reports have been reported in literature of xanthogranulomatous epididymal involvement.

CASE REPORT

A 72 years old male presented in surgery outdoor department with complaints of pain and swelling of right side of scrotum for 1 month and fever on and off with chills for last 7 days. Patient had a past history of hydrocele surgery 7 years back. On clinical examination: patient was vitally normal with normal systemic examination. Local examination showed right scrotal oedema, central paleness with peripheral erythema with tenderness over scrotum (Figure 1). Investigations were done in which TLC was 11600/mm and other biochemical parameters were within normal limit. Patient was clinically diagnosed as a case of epididymorchitis and he was advised antibiotics for a period of 7 days as patient could not afford ultrasound on his first visit. Patient did not improve symptomatically completely, so further investigations were done on follow-up.

Ultrasound scrotum findings showed -thick walled heterogeneously hypoechoic lesion in the tail of epididymis with adjacent fat stranding and oedema causing upward displacement of right testis likely epididymal abscess. Bilateral mild free fluid in scrotal sac suggestive of bilateral hydrocele.

Patient was planned for drainage of abscess and taken for surgery. On exploration, as the skin was incised, a purulent discharge oozed from the lesion (Figure 2). Right epididymis was partially adhered to the scrotal

skin. Testis were healthy (Figure 3), hence isolated right epididymectomy (Figure 4) with orchidopexy done. Post-op period was uneventful. Histopathologic findings showed numerous histiocytic cells with abundant foamy cytoplasm (xanthoma cells) intermingled with neutrophils, lymphocytes and plasma cells around dilated seminiferous tubules and interstitium which suggestive of xanthogranulomatous epididymitis (Figure 5).

Figure 1: Pre-operative lesion, right scrotal skin showing edema, central pale area with surrounding erythema.

Figure 2: Excised scrotal wall.

Figure 3: Healthy right testis (Intra-operative).

Figure 4: Excision of epididymis.

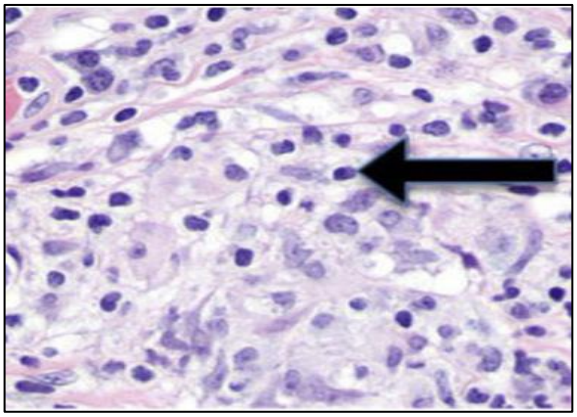

Figure 5: Microscopic appearance.

DISCUSSION

Xanthogranulomatous inflammation is chronic and benign condition characterized by parenchymal tissue necrosis and replaced by xanthoma cells (lipid-laden macrophages) and plasma cells. Xanthogranulomatous inflammations have been explained in the kidney, ovary, gall bladder, vagina and bones. It may also involve the genitals organs it may involve-testis, epididymis, spermatic cord, and prostate. Rarely it also may affect other organs like appendix, gall bladder and ovaries.[3,4] Aetiology is not well defined in literature.

Very few cases of xanthogranulomatous epididymitis has been given in literature. The first case of xanthogranulomatous epididymitis was reported in 1987.[3] Only 19 cases in the male genital system, involving the testis, epididymis and spermatic cord tissue, have been reported in the English literature.[5-12] Out of 19 xanthogranulomatous funiculitis and orchidoepididymitis cases, diabetes was present in seven cases.[6-8,12] Three cases had spinal injury or neuropathic bladder and four cases had benign prostatic hyperplasia and/or surgical intervention.[8-12] More cases were related to mechanical or functional obstruction of the spermatic tract, and/or stasis of possibly infectious agents. Most of the cases

discovered a prior history of intractable infection taken antibiotic treatment.

The pathogenesis is uncertain: theories for xanthogranulomatous infection include obstruction of the epididymis and/or an ischemic process of the testis and genital tract associated with chronic infective inflammation, sperm extravasation which causes an autoimmune reaction initiating local inflammation in the epididymis, obstructive uropathy, and abnormal phagocytosis of necrotic tissues.[13-15] Sometimes testicular ischemia secondary to arteriosclerosis may be present in older patients with a xanthogranulomatous inflamatory process.[13]

However, bacterial agents have seldom been identified. *E. coli*, *Bacteroides fragilis*, *Pseudomonas aeruginosa* and *Actinomyces* have all been counted as possible agents based upon microbial culture, but a causal relationship is not clear.[6,7,12]

Clinically it can mimic chronic bacterial or tubercular epididymorchitis, malakoplakia and testicular tumor.[16] Malacoplakia is different from a xanthogranulomatous lesion by the presence of typical Michaelis-Gutmann bodies associated with granular, eosinophilic and unvacuolated macrophages.[17] Clinical examination and testicular tumor markers, blood parameters and radiological investigations to be done to differentiate the various causes.

Clinically, an acute scrotal abscess requires surgical intervention and that remains the mainstay of the treatment for this relatively infrequent disease. However, current therapeutic approaches tend to avoid surgical treatment and there are reports of successful medical management of focal lesion (e.g., pyelonephritis); however, in most cases surgical removal is the curative treatment.[18-20]

CONCLUSION

Xanthogranulomatous epididymitis is very rare condition affecting epididymis isolately and few cases have been reported in literature. However, xanthogranulomatous inflammation is diagnosed histopathologically only. It requires aggressive approach for treatment as it is destructive pathology. Further studies may be done to find out some biochemical or pathological parameter for early diagnosis and aetiology of the disease.

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REFERENCES

1. Agrawal V, Jha AK, Dahiya D. Clinical, radiological, cytological, and microbiological assessment of painful extratesticular lesions. Urol Ann. 2018;10(2):181-4.
2. Ryan L, Daly P, Cullen I, Doyle M. Epididymo-orchitis caused by enteric organisms in men > 35 years old: beyond fluoroquinolones. Eur J Clin Microbiol Infect Dis. 2018;37(6):1001-8.
3. Alazab RS, Ghawanmeh HM, Al-Okour RK, Alshammari A, Lafi T, Al-Karasneh AI et al. Xanthogranulomatous orchitis: rare case with brief literature review. Urol Case Rep. 2017;13:92-3.
4. Cuzzutto C. Xanthogranulomatous osteomyelitis. Arch Pathol Lab Med. 1984;108:973-6.
5. Kang TW, Lee KH, Piao CZ, Yun KJ, Joo HJ, Park KS et al. Three cases of xanthogranulomatous epididymitis caused by *E. coli*. J Infect. 2007;54:69-73.
6. Nistal M, Gonzel-Peramato P. Serano A, Regadera J. Xanthogranulomatous funiculitis and orchiepididymitis: report of 2 cases with immunohistochemical study and literature review. Arch Pathol Lab Med. 2004;128:911-4.
7. Wiener LB, Riel PA, Baum N. Xanthogranulomatous epididymitis: a case report. J Urol. 1987;138:621-2.
8. Matsubara T, Kasagi Y, Hoshino T, Miamata H, Nomura Y.Xanthogranulomatous epididymitis: a case report. Nippon Hinyokika Gakkai Zasshi. Jpn. J. Urol. 1999;90:878-1.
9. Matsuoka K, Yano H, Inoue M, Lida S, Hirabayasi Y, Noda S. Xanthogranulomatous epididymitis. BJU Int. 2001;87:275-6.
10. Usamentiaga E, Val-Bernal JF, Alonso-Bartolome P, Lopez-Rasines G, Del Valle JI, Calabia A. Xanthogranulomatous orchitis. Urol. 1998;52:891-2.
11. Vaidyanathan S, Mansuor P, Parsons KF, Singh G, Soni BM, Subramaniam R et al. Xanthogranulomatous funiculitis and epididymo-orchitis in a tetraplegic patient. Spinal Cord. 1998;38:769-72.
12. Hajri M, Amna MB, Derouich A, Ayed M, Zermani F, Jilani SB. Orchites xanthogranulomateuses: a propos de sept cas. Ann Urol. 1998;35:237-9.
13. Nistal M, Paniagua R. Non-neoplastic diseases of the testis. In: Bostwick DG, Eble JN, Urologic surgical pathology. Mosby, St Louis. 1998;457-565.
14. Itoh M, Xie Q, Miyamoto K, Takeuchi Y. Major differences between the testis and epididymis in the induction of granulomas in response to extravasated germ cells. I. A light microscopical study in mice. Int J Androl. 1998;22:316-23.
15. Itoh M, Hiramine C, Tokunaga Y, Mukasa A, Hojo K. A new murine model of autoimmune orchitis induced by immunization with viable syngeneic testicular germ cells alone; Immunohistochemical findings of fully developed inflammatory lesion. Autoimmunity. 1998;10:89-97.
16. Yamashita S, Umemoto H, Kohjimoto Y, Hara I. Xanthogranulomatous orchitis after blunt testicular trauma mimicking a testicular tumor: a case report and comparison with published cases. Urol. 2017;14(3):3094-6.

17. Green WO Jr. Malacoplakia of the epididymis (without testicular involvement). The first reported case. Arch Pathol. 1968;86(4):438-41.
18. Zugor V, Schott GE, Labanaris AP. Xanthogranulomatous pyelonephritis in childhood: a critical analysis of 10 cases and of the literature. Urol. 2007;70:157-60.
19. Brown PS Jr, Dodson M, Weintrub PS. Xanthogranulomatous pyelonephritis: report of nonsurgical management of a case and review of the literature. Clin Infect Dis.1996;22:308-14.
20. Bingöl-Kologlu M, Ciftçi AO, Senocak ME, Tanyel FC, Karnak I, Büyükpamukçu N. Xanthogranulomatous pyelonephritis in children: diagnostic and therapeutic aspects. Eur J Pediatr Surg. 2002;12:42-8.

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