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Medical

Vesical and Urachal Actinomycosis - Mimicking As Urachal Malignancy : A Case Report

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Abstract

Actinomycosis, a pyogenic granulomatous sub acute to chronic infection caused by Actinomyces Israeli, may affect any organ of the body, rarely the bladder. We present a case of Vesical Actinomycosis that mimicked as an urachal tumour. A 55-year-old perimenopausal lady presented with an eight month suprapubic painful firm mass. Computed Tomography showed an 8.5 x 3.5cm ill-defined heterogeneously enhancing solid-cystic mass extending from the bladder dome to the umbilicus with lymphadenopathy suggestive of urachal malignancy. Cystoscopy showed broad base mass in the bladder dome, hence she underwent partial cystectomy with bilateral iliac lymph node dissection. Histopathological examination showed Actinomycosis surrounded by chronic inflammatory cells. Case reports like this emphasizes the need for a high degree of suspicion and thorough sampling of the specimen if diagnosis is in doubt. And surgery as a primary treatment will contribute to a good prognosis.

Keywords : Actinomycosis, India, Rare, Vesical

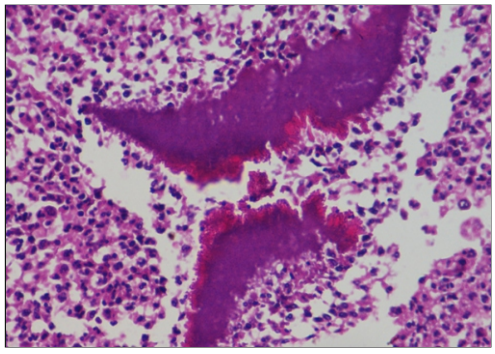
Introduction:

Vesical Actinomycosis is a rare chronic granulomatous infection caused by Actinomycosis Israeli [1]. In 1878, James Israel first observed yellow granules while studying pathological material from pyaemia and suppuration in the neck and named them Actinomycosis. Actinomycosis can affect any organ in the body forming ulcers, granuloma, and multiple abscesses. Also, being anaerobic, they can survive and multiply in low oxygen status forming sinus and fistulas which discharge sulpha granules [4] (Figure 2A). The exact mechanism of formation of these infections is unknown. Actinomycosis is non-contagious. It invades the body through micro fissures [4] affecting commonly the head, neck, thorax, abdomen and pelvic organs in that order. Among pelvic Actinomycosis, ovarian Actinomycosis is the commonest [2]. Vesical Actinomycosis is very rare with only a few cases reported. Beta–lactamase derivatives like penicillin is the drug of choice after complete excision of the mass [3][5]. Tetracycline, macrolides, linezolid are other options which are equally effective [4]. Here we discuss a case of a perimenopausal woman presenting with primary Vesical Actinomycosis and its management where the diagnosis was made with a high degree of suspicision with a thorough sampling of the specimen. She was managed surgically primarily leading to a good prognosis.

Case report

A 55-year-old perimenopausal woman presented with a suprapubic pain and mass along with significant weight loss of more than ten kilograms in the past eight months. Abdominal examination showed an 8 x 4cm firm mass with ill-defined borders in the

suprapubic region. Computed Tomography of abdomen and pelvis showed an 8.5 x 3.5cm ill-defined solid-cystic mass with heterogeneously enhancing solid components and peripherally enhancing cystic components extending from the bladder dome to the umbilicus, invading the rectus, fascia and muscles, with bilateral iliac lymphadenopathy suggestive of urachal malignancy (Figure 1). Her urine cytology was negative for malignant cells. Her complete blood counts, renal and liver functions were within normal limits. Cystoscopy showed a broad base Ulcerative mass in the bladder dome. Hence in view of urachal malignancy, she underwent partial cystectomy with excision of bladder peritoneum, urachus, rectus sheath and muscle with bilateral iliac lymph node dissection. The specimen (Figure 2B), on serial sectioning, revealed a 1.5 cm long linear tract like defect in the urachal region. Sections from the urachal tract and bladder showed a lesion characterized by proliferation of spindle cells with admixed inflammatory cells and slit like vessels.



Histologically, showed

The inflammatory cells were dense, comprising of sheets of foamy macrophages, lymphocytes, prominent plasma cells and eosinophils. Neutrophilic micro abscesses, foci of granuloma with epithelioid cell collection and necrosis were identified. There was dense fibrosis with pseudosarcomatous fibroblastic proliferation. Morphologic differential diagnosis such as inflammatory myofibroblastic tumour, sarcomatoid carcinoma and IgG4 related sclerosing disease were considered. Immunohistochemical marker study was done. The spindle cells strongly expressed smooth muscle actin, vimentin and were negative for ALK-1, IgG4 and CK immunostains. In view of high suspicion, even though the initial bits were negative, Multiple rebits were processed simultaneously and one of the sections revealed slender filamentous organisms surrounded by dense eosinophilic material (splendore-hoeppli zone), resembling Actinomyces. The organisms were highlighted with Grams (Figure 2C), PAS (Figure 2D) and Giemsa stains (Figure 2E). Hence the diagnosis of inflammatory pseudotumour secondary to Actinomycosis involving the urachus and urinary bladder was made. Postoperatively she was started on intravenous beta lactam antibiotics 2 gram per day for 15 days, followed by oral amoxicillin-clavulanic acid twice a day for six weeks. On follow-up, she was symptomatically better and post-operative imaging and Cystoscopy showed no evidence of pseudotumour.

Discussion

Actinomycosis is a chronic granulomatous infection caused by gram positive anaerobic bacteria Actinomyces Israeli. It is characterized by granulomatous inflammatory reaction and presence of sulfur granules [5] (Figure 2A). Sulfur granules with clusters of filaments are pathgnomonic for Actinomycosis. Actinomycosis occurs most commonly in the third to fifth decade and manifests commonly as Fascio-cervical Actinomycosis (about 60%). Abdominopelvic (20 to 30%) and thoracic (15%) is less common and genitourinary Actinomycosis is very rare, manifesting usually secondary to abdominopelvic infection [2][5]. Ovarian Actinomycosis is the commonest genitourinary Actinomycosis, followed by Bladder and testis. Prolonged use of intrauterine device, tubo ovarian abscess, intra-abdominal surgery are some risk factors for genitourinary Actinomycosis [3][5]. Vesical Actinomycosis usually presents with suprapubic mass and suprapubic pain [3], dysuria, hematuria, storage urinary symptoms like urgency, frequency and weight loss [5]. The diagnosis of Vesical Actinomycosis is often delayed due to possibility of urothelial malignancy carrying greater indices and

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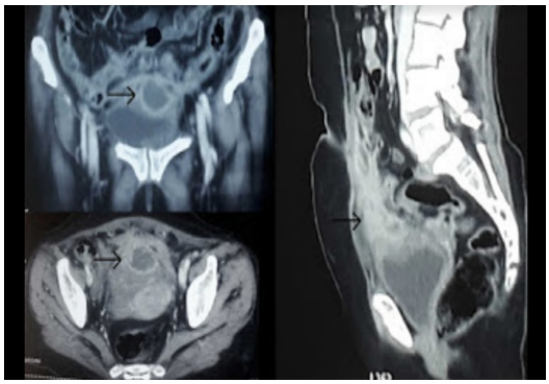
usually misdiagnosed as an urothelial or urachal malignancy. Histopathology plays a major role in diagnosis of Actinomycosis [1][2]. High index of suspicion in many case studies is emphasized and [3] should be there, so we can avoid misdiagnosis and overtreatment. The specimen, as in our case, if doubtful, should be sampled thoroughly and searched for the organisms carefully. Frozen sections can be helpful, and if it shows inflammatory myofibroblastic tumour like morphology, the possibility of inflammatory pseudotumour secondary to Actinomycosis can be considered. Computed Tomography and Cystoscopy is indicated for Genitourinary Actinomycosis [1]. Studies also emphasize the need for surgery for the management of Actinomycosis. There are reports where the kidney may also be involved by the Actinomycosis, presenting with hydronephrosis and acute on chronic renal failure where Nephrectomy is the treatment of choice for renal Actinomycosis with a poorly functioning kidney. In Vesical Actinomycosis, surgical management like excision of the sinus tracts, resection of the mass, drainage of the abscess cavity, or complete excision of the mass followed by long term antibiotic treatment is indicated[5]. There is a controversy regarding the role of surgery in management, but in our study, radical surgical excision contributed much to the prognosis of the patient. Penicillin is the drug of choice for Vesical Actinomycosis [3]. Surgical excision like partial cystectomy, followed by oral beta lactamase antibiotic for three to six months is indicated [5]. Doxycycline, Linezolid, Azithromycin is an alternative if allergic to penicillin [4]. Long term follow-up is indicated after treatment since relapse is common [1].

Conclusion

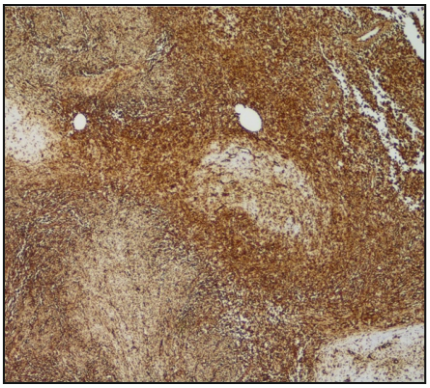
Vesical Actinomycosis is a very rare inflammatory pseudotumour which is difficult to diagnose by imaging studies alone. It needs histopathological confirmation. A high degree of suspicision and thorough sampling of the specimen is needed for diagnosis. Surgery primarily is one of the choices of treatment for Vesical Actinomycosis. It is then followed by long term antibiotic treatment for a good prognosis.

References

1. Chun Huang and Turki Al-Essawi. Actinomycosis of urinary bladder.Can Urol. Assoc J 2013 July-Aug.
2. Chaitra, Rajalakshmi, Mohanty. Actinomycosis in urachal remnants: rare cause of pseudotumour. IJU 2011 Oct.
3. A rare case of primary urachal actinomycosis mimiking malignancy: Sithika TA, Ganapathy H. Inter J Appl Basic Med Res 2017 March – Jan.
4. Lim KT, moon SJ, Kwon JS, urachal actinomycosis mimicking a urachal tr. Korean J urol 2010 jun.
5. Pelvic actinomycosis. Urological perspective. Marella. VK. Hakimian O, wise GJ. Int. braz J Urol 2004 Sep.



Computed Tomography of abdomen and pelvis



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DIABETIC RETINOPATHY - A GLOBAL EPIDEMIC

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Diabetes mellitus is a major health challenge of the 21st century and global estimates of the disease prevalence predict a huge rise. According to International Diabetes Federation estimates, the number of people living with diabetes is expected to rise to 578 million in 2030 from 463 million in 2019.With the projected increase in worldwide prevalence of diabetes, the micro and macrovascular complications due to diabetes are also expected to rise. Diabetic retinopathy (DR), a typical microvascular complication of diabetes is the most frequent cause of preventable blindness in working age adults.

Retina is the innermost light sensitive layer of the eye which converts light entering the eye into signals that can be interpreted by brain. (Figure 1) Diabetic retinopathy damages the blood vessels in retina which leak fluid and result in defective vision.

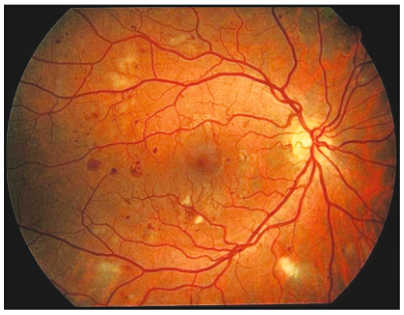

Figure 1 Normal human retina

Stages

Diabetic retinopathy can be broadly classified into two stages.

1. Non proliferative diabetic retinopathy (NPDR)- characterized by formation of outpouchings from capillaries called as microaneurysms, dot and blot hemorrhages and exudates in the retina as a result of increased vascular permeability. (Figure 2)

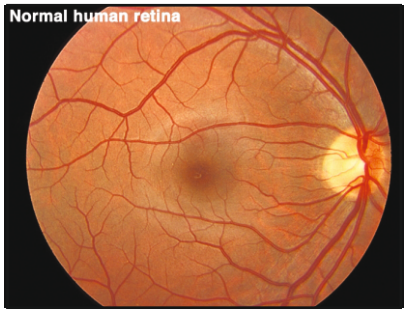

Figure 2 NPDR

2. Proliferative diabetic retinopathy (PDR) - characterized by formation of abnormal new blood vessels in the retina. (Figure 3)

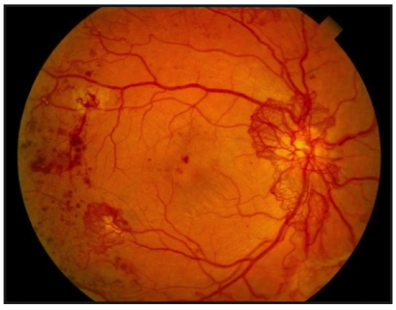

Figure 3 PDR

Macular edema characterized by retinal thickening from leaky blood vessels can develop at any stage of DR.

Risk factors

The duration of diabetes is the strongest predictor for development and progression of diabetic retinopathy. At the end of first two decades of disease, nearly all patients with type 1 diabetes have retinopathy. Up to 21% of patients with type 2 diabetes have retinopathy at the time of first diagnosis of diabetes and most develop some degree of retinopathy over time. Poor control of blood sugar increases the risk of development and progression of DR. As a matter of fact, the progression of diabetic retinopathy is difficult

to arrest even if good glycemic control is re-established after a period of poor control due to metabolic memory. Pregnancy, hypertension, dyslipidemia, smoking, anemia and chronic kidney disease are other proven risk factors.

Clinical features

Diabetic retinopathy has few visual or ophthalmic symptoms until visual loss develops. Vision loss due to diabetic retinopathy results from several mechanisms. Central vision may be impaired by macular edema or capillary nonperfusion. New blood vessels of PDR can result in hemorrhage into the vitreous and contraction of the accompanying fibrous tissue can distort the retina leading to tractional retinal detachment which results in severe and often irreversible vision loss. Sudden onset of floaters or black spots in the visual field of a patient with long standing diabetes suggests a probable vitreous hemorrhage.

Evaluation and treatment

A dilated fundus examination with help of slit lamp biomicroscope and indirect ophthalmoscope by Ophthalmologist is sufficient to diagnose diabetic retinopathy. Optical coherence tomography is a non invasive diagnostic tool that performs cross sectional imaging of the retina. It is useful for selecting patients who can benefit from treatment, identify what treatment is indicated and allow precise monitoring of treatment response. In selected cases, fundus fluorescein angiography is performed. Here fluorescein, a water soluble dye is injected into the veins and the passage of dye in retinal circulation is photographed. This helps to identify the site of new blood vessels and leakage.

Treatment strategies for diabetic retinopathy can vary based on disease severity. Patients with macular edema and proliferative DR require prompt treatment. Others can be safely observed depending upon their ability to comply with regular and frequent follow-up eye examinations. Current first-line treatments for proliferative DR and diabetic macular edema are Laser photocoagulation and intravitreal injection of drugs like anti vascular endothelial growth factors (Bevacizumab, Ranibizumab) and steroids (dexamethasone and fluocinolone acetonide). Laser photocoagulation involves application of targeted laser burns to leaky blood vessels and peripheral retina to prevent further formation of new blood vessels. Advanced diabetic eye disease requires surgery in the form of vitrectomy.

Prevention and Screening

Although DR is treatable, the treatment options are associated with potential complications which can affect the visual field, acuity, color vision and contrast sensitivity. In spite of local ocular treatment intensive control of blood sugar and management of risk factors is essential for best outcome, which could be difficult in the long term. Because retinopathy can be asymptomatic it is important to screen, identify and treat patients early in the disease to prevent visual loss.

Based on various clinical studies guidelines have been put forth for initial and subsequent ophthalmic evaluation of diabetics. Accordingly patients with type 1 diabetes should have an initial comprehensive eye examination by an ophthalmologist within 3-5 years after the onset of diabetes. Patients with type 2 diabetes should have an eye examination at diabetes diagnosis or shortly after. Subsequent examinations for both type 1 and type 2 diabetic patients should be repeated annually. Examinations will be required more frequently if retinopathy is progressing. Patients with any level of macular edema, severe NPDR, or PDR require prompt individualized therapy guided with the patient's best interests.

Diabetic retinopathy increases the likelihood of developing nephropathy and is also a strong predictor of macrovascular complications of diabetes like stroke and cardiovascular disease. Healthcare professionals involved in the management of diabetes should encourage regular retinopathy screening by ophthalmologists, which can be a means of identifying patients at increased risk for microvascular and macrovascular complications. This would enable earlier detection, referral and intervention ultimately reducing morbidity and mortality among patients with diabetes.