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Anthony Kodzo-Grey Venyo *

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Research Article

Sarcoidosis Of the Penis

Anthony Kodzo-Grey Venyo

Retired Urologist and Clinician, Reviewer of Articles for Journals, Medical Examiner Member of Royal College of Pathologists, London. United Kingdom.

***Corresponding Author:** Anthony Kodzo-Grey Venyo, Retired Urologist and Clinician, Reviewer of Articles for Journals, Medical Examiner Member of Royal College of Pathologists, London. United Kingdom.

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Abstract

Sarcoidosis is a systemic disease of unknown etiology whnich affects multiple organs of the body and which is characterized by the presence of non-caseating granulomas. It is very rare for patients who are afflicted by sarcoidosis of the penis to initially manifest with a lesion of the penis only. Sarcoidosis of the penis manifests with non-specific symptoms that simulate the manifestation more common afflictions of the penis and hence without the clinician having a high-index of suspicion for sarcoidosis of the penis, the diagnosis could be either missed easily or there would be a delay in the diagnosis of sarcoidosis of the penis. Diagnosis of sarcoidosis of the penis is made based upon pathology examination of biopsy specimens or excised specimens of the penile lesion.

Kew Words: sarcoidosis of penis; rare; biopsy; histopathology

Introduction

Sarcoidosis is a terminology which is used for a systemic disease of unknown aetiology which affects multiple organs and is characterized by the presence of non-caseating granulomas. [1] Even though the aetiology of sarcoidosis is not known, the evidence has been iterated to point to an exaggerated immune response to an unidentified antigen as the most likely cause. [2] Confirmatory evidence of the presence of non-caseating granuloma within the specimen of the penile lesion is required in order to establish the diagnosis of sarcoidosis. In addition, other causes of granulomatous disease need to be excluded before the diagnosis of sarcoidosis of the penis is established or confirmed.[3] Sarcoidosis is known to mainly affect the lungs, lymphoid system, liver, and skin. [3] While sarcoidosis of the male reproductive system, including: the testis, epididymis, and prostate, had been reported sporadically in the literature, sarcoidosis of the penis is rare, and only a few case reports had been reported in the literature. [4] [5] [6] [7] [8] [9] [10] [11]

Aim

To provide an update on sarcoidosis.

Methods

Internet databases were searched including: Google; Google Scholar; Yahoo; and PUBMED. The search words that were used included: Sarcoidosis of penis; penile sarcoidosis. Thirty-nine (39) references were identified which were used in writing the chapter which has been divided into two parts: (A) Overview, and (B) Miscellaneous narrations and discussions from some case reports, case series, and studies related to sarcoidosis of the penis.

Results

[A] Overview

Definition, General statements, Practice Essentials. [12]

- Sarcoidosis has been defined as a multi-system inflammatory disease of unknown aetiology which predominantly affects the lungs and intrathoracic lymph nodes and is manifested by the presence of non-caseating granulomas (NCGs) within afflicted organ tissues of the body. [12]
- It has been iterated that Sarcoidosis is characterized by a seemingly exaggerated immune response against a difficult–to-discern antigen. [12] [13]
- The age-adjusted incidence of sarcoidosis has been stated to be 11 cases per 100,000 population in whites but 34 cases per 100,000 population in African Americans. [12] [13]

Signs and symptoms

The presenting signs and symptoms in sarcoidosis are stated to vary depending upon the extent and severity of the organ which is involved by sarcoidosis as follows: [13]

- Sometimes sarcoidosis may be asymptomatic, and incidentally identified upon chest radiography images in about 5% of cases. [12]

- It has been stated that in 45% of cases, sarcoidosis may present with systemic complaints including: fever, and anorexia in 45% of cases. [12]
- It has been documented that sarcoidosis in 50% of cases does manifest with pulmonary complaints including: dyspnoea on exertion, cough, chest pain, and haemoptysis on rare occasions. [12]
- It has been stated that at times, sarcoidosis may present as neuro-sarcoidosis including: cranial neuropathies, leptomeningeal disease, intraparenchymal lesions, and myelitis, which does occur in between 5% to 10% of cases. [14]
- It has additionally been stated that in sarcoidosis, Löfgren syndrome which manifests with fever, bilateral hilar lymphadenopathy, and poly-arthralgias does occur and this sarcoidosis affliction is common in Scandinavian patients, but it is not common in African-American and Japanese patients. [12]

The pulmonary findings on physical examination of patients affected by sarcoidosis had been summarized as follows: [12]

- Usually there has tended to be normal pulmonary examination of patients afflicted by sarcoidosis. [12]
- In some cases of sarcoidosis, clinical respiratory tract examination of affected individuals might demonstrate audible crackles. [12]
- In some individuals affected by sarcoidosis, their clinical examination may demonstrate exertional oxygen desaturation. [12]

It has been stated that dermatology manifestations of sarcoidosis may include the following: [12]

- Erythema nodosum. [12]
- A lower-extremity panniculitis with painful, erythematous nodules that often tend to be seen in association with Löfgren syndrome. [12]
- Lupus pernio, which is documented to be the most specific associated cutaneous lesion of sarcoidosis. [12]
- Violaceous rash on the cheeks or nose tend to be common in cases of sarcoidosis. [12]
- Maculopapular plaques tend to be visualised in some cases of sarcoidosis which has been stated to be an uncommon feature of sarcoidosis. [12]

It has been iterated that ocular involvement, in cases of sarcoidosis which may lead to blindness if untreated, may present as follows: [12]

- Anterior or posterior granulomatous uveitis, which is most frequently seen. [12]
- Conjunctival lesions as well as scleral plaques. [12]

Other possible presentations of sarcoidosis do include the ensuing: [12]

- Osseous involvement. [12]
- Heart failure from cardiomyopathy may be encountered on rare occasions. [12]
- Heart block and sudden death of the sarcoidosis affected individual. [12]
- On rare occasions lymphocytic meningitis of the sarcoidosis afflicted individual. [12]
- On rare occasions, individuals who are affected by sarcoidosis may manifest with stroke, seizure, intracranial mass, hypopituitarism, neuropsychiatric symptoms, and encephalopathy and all these manifestations are stated to be rare. [12]

Diagnosis

The radiology-image studies for sarcoidosis had been summarized as follows: [12]

- Chest radiography: It has been iterated that chest radiograph is central to the evaluation of sarcoidosis. [12]
- Routine chest computed tomography (CT): It has been iterated that the undertaking of computed tomography of the thorax adds little to radiography findings. [12]
- High-resolution CT (HRCT) scanning of the chest: It has been iterated that high-resolution CT (HRCT) scan may be helpful, in that it does identify active alveolitis versus fibrosis, and findings correlate with biopsy yield. [12]
- Gallium scans: It has been pointed out that Gallium scans are undertaken infrequently and that Gallium scan has a-low sensitivity and specificity, but may be helpful when the clinical picture remains confusing despite histology examination evidence of non-caseating granulomas, for example in differentiating chronic hypersensitivity pneumonitis from sarcoidosis. [12]

Staging of sarcoidosis had been summated as follows: [12]

- Stage 0: Normal chest radiographic findings
- Stage I: Bilateral hilar lymphadenopathy
- Stage II: Bilateral hilar lymphadenopathy and infiltrates
- Stage III: Infiltrates alone
- Stage IV: Fibrosis

It has been stated that pulmonary function tests and a carbon monoxide diffusion capacity test of the lungs for carbon monoxide (DLCO) are used routinely in evaluation and follow-up of individuals afflicted by sarcoidosis. [12] and that some of the possible findings of the tests do include the following: [12]

- An isolated decrease in DLCO is the most common abnormality found in cases of sarcoidosis. [12]
- A restrictive pattern is seen in patients with more advanced pulmonary sarcoidosis disease. [12]
- About 15% to 20% of sarcoidosis patients are iterated to have obstruction. [12]
- It has been iterated that cardiopulmonary exercise testing is a sensitive test for the identification and quantification of the extent of pulmonary involvement. [12]

- Cardiopulmonary exercise testing also may indicate cardiac involvement that otherwise is not evident. [12]
- Impaired heart rate recovery during the first minute ensuing exercise had been demonstrated to be an independent predictor for cardiovascular and all-cause mortality, [15] and it might identify patients who are at high risk for the development of arrhythmias and sudden death.[16]
- It had been advised that all patients with sarcoidosis should have an annual electrocardiogram, and that patients who report palpitations should have a thorough evaluation with at least Holter monitoring.[12]
- Diagnosis of sarcoidosis requires biopsy in most cases. [12]
- Endobronchial biopsy via bronchoscopy is often undertaken. [12] The yield is stated to be high; and it has been iterated that results of the biopsy may be positive even in patients with normal chest radiographs. [12] The central histopathology examination finding is the presence of non-caseating granulomas with special stains negative for fungus and mycobacteria. [12]

Routine laboratory evaluation is stated to be often unrevealing, but possible abnormalities include the following: [12]

- Hypercalcemia (about 10-13% of patients)
- Hypercalciuria (about a third of patients)
- Elevated alkaline phosphatase level
- Elevated angiotensin-converting enzyme (ACE) levels.

Management

The management of sarcoidosis has been summarized as follows: [12]

It has been iterated that non-steroidal anti-inflammatory drugs (NSAIDs) are indicated for the treatment of arthralgias and other rheumatic complaints. [12] It has also been stated that patients with stage I sarcoidosis often do require only occasional treatment with NSAIDs. [12]

Treatment in sarcoidosis patients with pulmonary involvement has been summated as follows:

- Asymptomatic patients may not require treatment at all and would need to be observed.
- In sarcoidosis patients with minimal symptoms, serial re-evaluation is important. [12]
- Treatment is indicated for sarcoidosis patients with significant respiratory symptoms. [12]
- Corticosteroids can produce small improvements in the functional vital capacity and in the radiographic appearance in sarcoidosis patients with more severe stage II and III disease. [12]

For extrapulmonary sarcoidosis involving such critical organs such as the heart, liver, eyes, kidneys, or central nervous system, corticosteroid therapy is stated to be indicated. [12] It has been iterated that topical corticosteroids are effective for ocular disease. [12] For pulmonary sarcoidosis disease, it has been iterated that prednisone is generally given daily and then tapered over a 6-month course. It has also been stated that high-dose inhaled corticosteroids could be an option, particularly in sarcoidosis patients with endobronchial disease.

Common indications for non-corticosteroid agents in cases of sarcoidosis had been stated to include the ensuing: [12]

- Steroid-resistant disease
- Intolerable adverse effects of steroids
- Patient desire not to take corticosteroids

Non-corticosteroid agents that tend to be used in sarcoidosis include the ensuing: [12]

- Methotrexate (MTX) had been a successful alternative to prednisone. [12]
- Chloroquine and hydroxychloroquine had been used for cutaneous lesions, hypercalcemia, neurologic sarcoidosis, and bone lesions. [12]
- Chloroquine had been found to be effective for acute and maintenance treatment of chronic pulmonary sarcoidosis. [17] [18]
- Cyclophosphamide had been rarely used with modest success as a steroid-sparing treatment in patients with refractory sarcoidosis. [19] [20]
- It has been iterated that Azathioprine is best used as a steroid-sparing agent. [12] [21]
- It has been iterated that Chlorambucil might be beneficial in patients with progressive disease unresponsive to corticosteroids or when corticosteroids are contraindicated. [12] [22]
- It had been stated that cyclosporine might be of limited benefit in skin sarcoidosis or in progressive sarcoid resistant to conventional therapy. [12] [23]
- It has been documented that Infliximab, [24] [25] and thalidomide, [26] [27] had been utilised for the treatment of refractory sarcoidosis, particularly for cutaneous disease, as well as for the long-term management of extrapulmonary sarcoidosis. [28]
- It had furthermore, ben stated that Infliximab appeared to be an effective treatment for patients with systemic manifestations such as lupus pernio, uveitis, hepatic sarcoidosis, and neuro-sarcoidosis. [12]

It had also been iterated that for sarcoidosis patients with advanced pulmonary fibrosis from sarcoidosis, lung transplantation remains the only hope for long-term survival and that indications for transplantation include either or both of the following. [29]:

- Forced vital capacity below 50% predicted [12]
- Forced expiratory volume in 1 second below 40% predicted. [12]

[B] Miscellaneous Narrations and Discussions from Some Case Reports, Case Series, And Studies Related to Sarcoidosis of The Penis.

Al-Riyami et al. [11] reported a 63-year-old African man, who presented to the University Health Centre of Sultan Qaboos University, Muscat, Oman with a six-month history of painless swelling of his penis. He denied having any history of genital trauma, urethral discharge, or any other urinary tract symptom. He did not have any other skin lesions. He was married and he did not have any extra-marital relationships. His clinical examination showed a 1 cm × 2 cm firm and non-tender nodule within the ventral part of his penis. He was referred to the urology clinic where he had an excisional biopsy of

the swelling. Histopathology examination of the lesion revealed epithelioid histiocytes palisading around a nuclear dermis with mucin deposition, which was indicative of granuloma annulare (see figure 1)

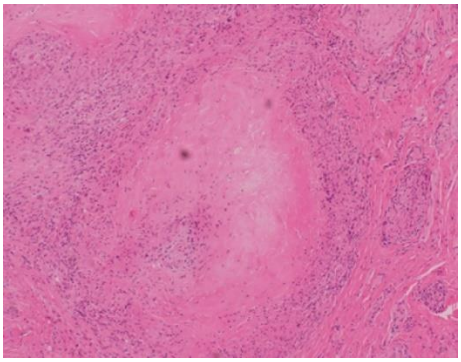

Figure 1

Histological section of the penile lesion showing granuloma annulare. Localized necrotic collagen surrounded by lymphocytes. Magnification = 10 ×. Reproduced from: [11] under the Creative Commons Attribution License.

One year subsequently, he re-presented with similar painless skin nodules, but over his right upper limb. These skin nodules had subsequently spread to involve his thorax and trunk. He did not have any respiratory symptoms, fever, or joint pain. His family history was unremarkable, particularly for any similar manifestations or malignancies. Upon examination, he was noted to be well-built, and he looked comfortable. He did not have any palpable cervical or axillary lymph nodes. He was found to have multiple 1 cm × 2 cm, firm and non-tender subcutaneous nodules over his right arm, chest, and trunk. His chest was clear, and his cardiovascular examination was normal. The results of his laboratory tests, which included complete blood count, fasting blood glucose, and liver function tests, were all normal. His renal function tests demonstrated features indicative of an acute kidney injury with high creatinine level and low glomerular filtration rate (GFR). The levels of his potassium and bicarbonate were within the normal range. A summary of the results of his laboratory tests is illustrated in table 1.

Tests	**Results**	**Normal range**
Hemoglobin	13.1	12.1–16.3 g/dL
WBC	8	4.0–11.1 × 10^9/L
Platelet count	316	150–400 × 10^9/L
BUN	8.8	2.8–8.1 mmol/L
Creatinine	205	59–104 umol/L
GFR	28	1.73 mL/min/m^2
K	4.8	3.5–5.1 mmol/L
Bicarbonate	25	22–29 mmol/L
ESR	37	0–22 mm/hr
ALT	23	0–41 U/L
AST	87	0–40 U/L
Calcium	3.35	2.15–2.55 mmol/L
PTH	0.4	1.6–9.3 pmol/L
Albumin	45	35–52 g/L
CRP	<1	0–5 mg/L
ACE	243	12–68 ACEU

Table 1: Summary of laboratory test results in a 68-year-old male with a history of penile swelling.

WBC: white blood count; BUN: blood urea nitrogen; GFR: glomerular filtration rate; K: potassium; ESR: erythrocyte sedimentation rate; ALT: alanine aminotransferase; AST: aspartate aminotransferase; PTH: parathyroid hormone; CRP: C-reactive protein; ACE: angiotensin-converting enzyme. Reproduced from: [11] under the Creative Commons Attribution License. His chest radiography demonstrated a superior mediastinal mass with a bilateral hilar enlargement (see figure 2). He had computed tomography of his thorax, which demonstrated multiple enlarged mediastinal and hilar lymph nodes with no parenchymal infiltrations (see figure 3). He underwent a repeated excisional biopsy of one of the nodules

upon his right arm which upon histopathology examination was noted to show non-caseating discrete granulomata with minimal lymphocytic cuff without vasculitis or panniculitis (see figure 4). Based upon the clinical features of the lesions and the results of the investigations, a diagnosis of sarcoidosis was made.

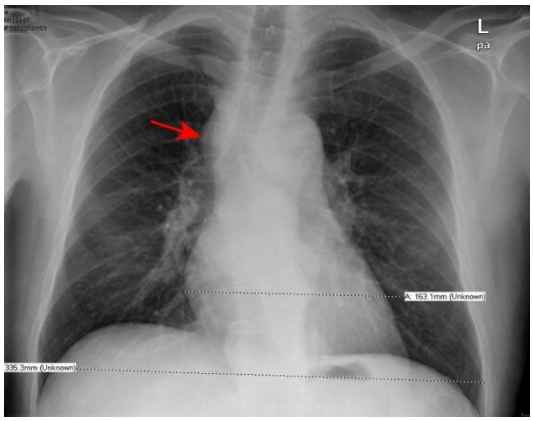

Figure 2: Chest X-ray showing superior mediastinal mass (red arrow). Reproduced from: [11] under the Creative Commons Attribution License.

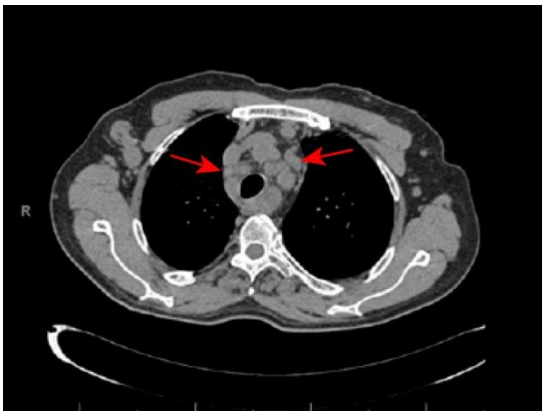

Figure 3: Axial computed tomography scan showing lymphadenopathy at the mediastinal area (red arrows) with clear lung parenchyma. Reproduced from: [11] under the Creative Commons Attribution License.

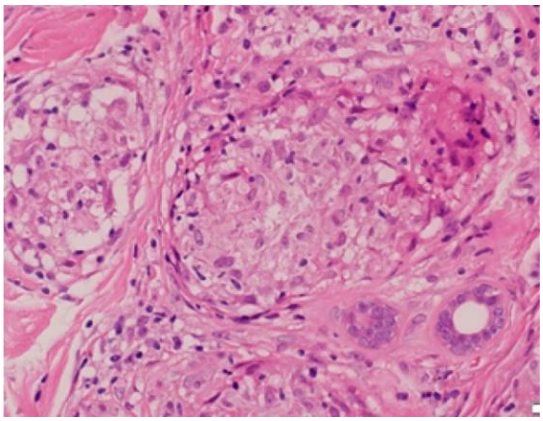

Figure 4

Histological section of right arm nodule showing a collection of epithelioid histiocytes surrounded by a thin cuff of lymphocytes, which composes non-caseating discrete granulomata. Magnification = 20 ×. Reproduced from: [11] under the Creative Commons Attribution License. Given the patient's acute kidney injury and hypercalcemia, he was admitted to the hospital for hydration and treatment with calcitonin, following which he improved, and his renal function test results became better. He was commenced on prednisolone 35 mg/day (0.4 mg/kg) and this was tapered down later once his clinical and biochemical parameters had improved. During his follow-up assessment after four weeks, he was asymptomatic. His serum calcium level and renal function tests had normalized. He had a repeat chest radiograph, which was undertaken three months subsequently, which demonstrated

regression in the size of the mediastinal and hilar lymphadenopathy (see figure 5). The dose of his steroids was reduced gradually until a maintenance dose of 10 mg daily was reached. He had been seen regularly at the outpatient clinic and had remained in good condition since his discharge from hospital.

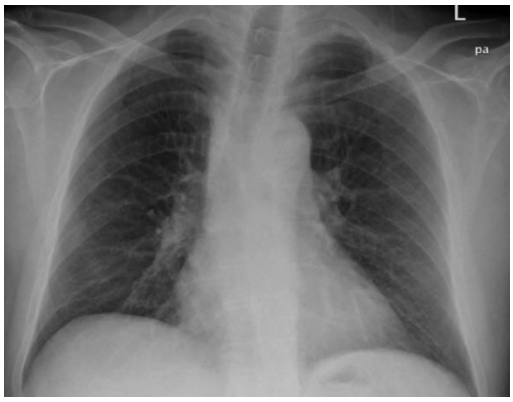

Figure 5: Chest X-ray showing regression of the superior mediastinal mass after treatment with steroid. Reproduced from: [11] under the Creative Commons Attribution License.

Al-Riyami et al. [11] made the ensuing educative discussions and iterations:

- Sarcoidosis is stated to be a systemic disease of unknown aetiology affecting multiple organs of the body and which is characterized by the presence of non-caseating granulomas. [1]
- Even though about 80% of cases of sarcoidosis affect people between the ages of 20 years and 50 years, a second peak of sarcoidosis may occur in those between 50 years and 65 years of age. [1] [30]
- Even though sarcoidosis may affect anyone, it is more commonly found in specific ethnic populations such as Swedes, Danes, and African-Caribbeans.[1]
- Dry cough, dyspnoea, and chest pain are stated to be the common clinical manifestations of sarcoidosis and they occur in almost 50% of cases. [1]
- Constitutional symptoms such as pyrexia, weight loss, and fatigue are stated to occur in one-third of patients.[1]
- Lungs, lymphoid system, liver, and skin are often involved in cases of sarcoidosis.
- The penis is stated to be rarely affected by sarcoidosis.
- Diagnosis is stated to be usually made based upon the clinical manifestation and radiology-image findings. Nevertheless, the presence of non-caseating granuloma is typical and needed to confirm the diagnosis of sarcoidosis. [3]
- Other differential diagnoses such as tuberculosis, infections, and malignancies need to be excluded before confirming the diagnosis to be due to sarcoidosis.
- It is very uncommon for patients with sarcoidosis to manifest initially with a penile lesion only.
- A total of five similar case reports had been published prior to the publication of their case.
- The manifestation of the first was similar to their reported case in which a patient had manifested with a six-month history of a penile mass and he was subsequently diagnosed with sarcoidosis based upon the histopathology examination findings of specimens of the lesions. [6]
- The second case was a reported case of a 29-year-old man, who developed a penile lesion five years after being diagnosed with sarcoidosis. [7]
- The third and fourth case reports were similar as they had both reported patients who had ulcerated penile lesions and they responded well initially to steroids, but the penile lesions recurred subsequently. Both patients underwent partial penile amputation and one of them required ablation by radiotherapy due to recurrence of the lesion at the scar site. [8] [9]
- The fifth case report involved a 53-year-old man, who presented initially with tender and erythematous swelling together with multiple yellowish subcutaneous nodules upon the dorsal aspect of his glans penis and he was diagnosed subsequently with sarcoidosis. [10]
- The first histopathology report of their reported patient demonstrated features of granuloma annulare. This is stated to be a self-limiting and benign inflammatory skin lesion of unknown aetiology. [31]
- Even though it is rare, penile granuloma annulare should have raised the clinician's suspicion of chronic granulomatous disease given the suggestive clinical presentation of the patient. [32]
- Their patient subsequently developed widespread skin lesions over his chest and trunk. This is stated to be a much more common manifestation of the disease and had been reported to occur in 25% to 35% of patients. [33]
- Acute kidney injury had been reported as a rare and serious presentation of the sarcoidosis disease. [34] The most common underlying pathology was iterated to be tubulointerstitial nephropathy. [34] Hypercalcemia is stated to occur in 2% to 10% of patients with sarcoidosis and is stated to be due to dysregulation of calcium metabolism. [3]
- The inflammatory process in sarcoidosis has been iterated to enhance the conversion of the inactive 25-hydroxyvitamin D to the active 1,25 dihydroxy-vitamin D, which does lead to increased absorption of calcium and hence the occurrence of hypercalcemia and/or hypercalciuria. [33] It has been iterated that although serum angiotensin-converting enzyme is raised in 75% of patients with sarcoidosis, it has low specificity. [35] It has been stated that while utilisation of systemic corticosteroids in sarcoidosis has remained controversial, certain features may

necessitate its use. Hypercalcemia, cardiac, and neurological involvement are considered clear indications for treatment with steroids. [1]

- With regard to the prognosis of sarcoidosis, it has been iterated that nearly two-thirds of patients with sarcoidosis would experience spontaneous remission while 10% to 30% might progress to develop a chronic and progressive stage of the disease. [1]

Al-Riyami et al. [11] made the ensuing conclusions:

- Because of the multi-system involvement of sarcoidosis, it could manifest in many different ways.
- Clinicians need to consider sarcoidosis as one of the possible differential diagnoses, whenever they encounter a patient with a suspicious penile lesion.
- Sarcoidosis should be considered a possibility even if histopathology examination of the specimen demonstrates only granuloma annulare in the presence of suggestive clinical features.
- Steroids, when indicated, are the mainstay of treatment for this clinical condition.

Herodotou et al. [36] reported the case of a man, who manifested with several months' history of distal penile swelling and progressive inability to retract the foreskin. Firm, non-tender subcutaneous nodules were palpated near the base of his penis during his examination. He ultimately underwent penile skin resection, partial scrotal resection, and split thickness skin graft to the penis after failure of multiple conservative treatments. Pathology examination of the specimen showed non-caseating granulomatous lesions which in addition to his computed tomography (CT) scan of thorax findings of bilateral hilar adenopathy suggested a diagnosis of sarcoidosis of the penis.

Semiz and Kobak. [36] stated the following:

- Sarcoidosis may present with bilateral hilar lymphadenopathy, skin lesions, eye, and musculoskeletal system involvement.
- Rare involvement of the genital organs including the prostate gland, the testis, and the epididymis had also been reported.
- Nevertheless, sarcoidosis involvement of the penis is observed quite rare.

Semiz and Kobak. [36] reported a patient with penile mass who was diagnosed with sarcoidosis on the basis of the laboratory, radiological, and pathological investigations. Semiz and Kobak. [36] made the ensuing conclusions:

- The diagnosis of sarcoidosis of the penis was made as a result of the biopsy and the other investigations.
- In patients with penile and genital lesions, sarcoidosis should be kept in mind, and biopsy should be considered to establish the true diagnosis.

Rubinstein et al. [37] reported a case of sarcoidosis which was identified histologically as the cause of chronic painful erythematous induration of the penis with several subcutaneous nodules and cutaneous ulceration in a 37-year-old African-American man, who presented with a 3-month history of an extensive, pruritic, eczematous eruption upon his scrotum with associated oedema and tenderness. Clusters of dark papules and plaques had developed upon his face over the preceding one month. He also reported having recent fevers, intermittent nausea and vomiting, difficulty in voiding, and occasional wheezing but he did not have any shortness of breath. Pathology examination of biopsy specimens of his lesions demonstrated features indicative of sarcoidosis. The lesions improved in response to topically applied corticosteroids but they reappeared later and persisted despite treatment. Rubinstein et al. [37] suggested that sarcoidosis, even though rare, should be considered in the differential diagnosis of any chronic lesion involving the penis in adults.

Algoet et al. [38] stated that sarcoidosis is a systemic disease of unknown origin affecting patients who are aged between 25 years and 40 years, and it has a higher incidence in women and in patients of African descent. Algoet et al. [39] reported the first case of sarcoidosis of the glans penis and penis, without systemic manifestations, in a patient of North African descent. Local treatment was commenced for the treatment of the sarcoidosis. Algoet et al. [38] advised that regular monitoring should be undertaken to assess for the possibility of systematization.

Wei et al. [39] reported a 31-year-old African-American man, who presented with cutaneous lesions upon his penis and scrotum over the preceding 2 years. The genital lesions were so prominent as to interfere with his coital life. Sarcoidosis was demonstrated upon pathology examination of biopsy specimens of his lesions on the penis and scrotum. Wei et al. [39] made the ensuing conclusions:

- Sarcoidosis lesions may affect any skin area, but are rarely reported arising on the genitalia.
- Dermatologists need to be aware that genital sarcoidosis is a rare entity which should be included in the differential diagnosis of genital papules and nodules.
- Furthermore, genital sarcoidosis may cause urinary problems and may represent a therapeutic challenge.

Conclusions

- In view of the multi-system involvement of sarcoidosis, it can manifest in many different ways and in many organs of the body.
- Clinicians need to regard sarcoidosis as one of the possible differential diagnoses whenever they encounter a patient who has a suspicious lesion of his penis.
- Clinicians including pathologists should consider sarcoidosis as a possible diagnosis even if histopathology examination of the specimen of the penile lesion and lesions elsewhere demonstrates features of only granuloma annulare in the presence of suggestive clinical features.
- Steroids, when indicated, have most often been the mainstay of treatment for this clinical condition.

Conflict of Interest – none

Acknowledgements

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