Epididymal Sarcoidosis: A Report of Two Cases and a Review of the Literature

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Two cases of epididymal sarcoidosis, presenting as scrotal masses, are described. Biopsies of the epididymis and scalene nodes established the diagnosis. The literature of epididymal sarcoid and its differential diagnosis is discussed.

Extrathoracic sarcoidosis usually results in one of several well-defined patterns [1,2,3]. In the differential diagnosis of scrotal and epididymal masses, sarcoidosis is rarely considered [3,4]. We describe two cases of systemic, histologically confirmed epididymal sarcoid presenting as scrotal masses to emphasize their clinical aspects and discuss the differential diagnosis.

CASE REPORTS

Patient 1 (A.F.): A 17-year old black male was admitted to the hospital with a chief complaint of left scrotal swelling. He had lost 20 pounds in two months. There was no history of hemoptysis, night sweats, or exposure to tuberculosis. The physical examination revealed a temperature of 37°C, blood pressure of 110/70, pulse of 80, and respiratory rate of 18. There was diffuse supraclavicular, cervical, axillary, and inguinal lymphadenopathy and a firm, tender mass at the superior pole of the left testicle, approximately 2 cm in diameter. The rest of the physical examination was normal.

Laboratory data, including hematocrit, white blood cell count, liver function tests, calcium, phosphorous, albumin, and globulin and urine analysis were within normal limits. A posterior-anterior chest radiograph and full chest laminograms revealed bilateral hilar and mediastinal lymph node enlargement, and bilateral, symmetrical, peripheral parenchymal nodules (Figs. 1,2). A gallium scan demonstrated activity around the eyes, parotid glands, and submandibular glands (Fig. 3). Considerable gallium uptake was noted also in the hilar regions and in the lower lung zones. An intravenous pyelogram was within normal limits. Pulmonary function tests, including spirometry, lung volumes, and the single breath diffusing capacity for carbon monoxide (DLCO) were normal.

Serum and urine human chorionic gonadotrophin values were negative. The serum angiotensin converting enzyme level was 60.2 nanomoles/ml (normal ± 2 S.D. 14.7–45.9) and the serum lysozyme level was 24.0 µg/ml (normal ± 2 S.D. 2.7–11.1). Skin tests for candida, intermediate purified protein derivative (PPD), and trichophyton were all nonreactive.

Biopsy and culture of the left epididymis and a palpable right scalene lymph node were done. Both specimens demonstrated numerous epithelioid, noncaseating granu-
lomata with multinucleated giant cells (Fig. 4). Acid fast and silver stains failed to reveal microorganisms; cultures of the specimens for acid-fast bacilli, fungi, and bacteria were negative.

Patient 2 (J.A.): A 27-year old black male was admitted to the hospital in 1973 for evaluation of generalized lymphadenopathy, a left scrotal mass and a 25-pound weight loss over 1-½ years prior to admission. For two months prior to admission, he noted increasing malaise, fatigability, and a left scrotal mass. The physical examina-
FIG. 3. Gallium scan demonstrating uptake in the lacrimal and submandibular glands, the hilar lymph nodes, peripheral lung zones.

FIG. 4. Epididymal biopsy specimen demonstrating noncaseating granuloma with multinucleated giant cells. Hematoxylin and eosin, magnification × 100.
tion revealed a temperature of 37°C, blood pressure of 110/70, pulse of 80, and a respiratory rate of 16. There were multiple palpable lymph nodes in the posterior auricular, anterior, and posterior cervical, axillary, and inguinal regions. Examination of the heart revealed a II/IV systolic ejection murmur at the apex, and on the abdominal examination, the liver was enlarged with a span of 13 cm. The spleen was not palpable. In the left epididymis, a 1 × 2 cm hard mass was palpable. The right epididymis and both testicles and the rest of the physical examination were normal.

The hematocrit, white blood count, calcium, phosphorous, albumin, globulin, and urine analysis were all normal. The alkaline phosphatase was 155 I.U./ml (normal range 30–85 I.U./ml). The serum glutamic-oxalacetic transaminase and bilirubin were normal. The chest radiograph demonstrated right paratracheal and bilateral hilar lymph adenopathy. Pulmonary function tests, including spirometry, lung volumes, and the DLCO were normal. The serum lysozyme was 27 μg/ml. Biopsies of the left testes, left epididymis, and a right supraclavicular lymph node all revealed noncaseating granulomata. Cultures of the biopsy material were negative for bacteria, tuberculosis, and fungi.

**DISCUSSION**

Recent reviews of epididymitis have failed to mention sarcoidosis as an etiology [5,6]. We were able to find 21 reported cases of epididymal sarcoid; these are summarized in Table 1 [7–23]. In three of these cases [8,11,13], mycobacterium tuberculosis had been isolated in culture from either the lungs or hilar lymph nodes. While this does not exclude the occurrence of tuberculosis and sarcoidosis together, it does suggest that the epididymal involvement in these cases may have been due to tuberculosis [24]. Mayock et al. [25] reported in their collected review series of 625 cases of systemic sarcoidosis an incidence of less than 1%.

Ricker and Clarke [10] and Scadding [3] have shown a similarly low rate of involvement. The majority of cases had several organ systems involved concomitantly. In only two previously described cases [17,21] did sarcoidosis present with a scrotal mass as occurred in both cases in the present series. Epididymal involvement with sarcoidosis is predominantly unilateral, nodular, diffuse, and painless in character. This was the case in our patients except for the tenderness on palpation of the mass in the first case. Bilateral epididymal lesions are less common, occurring in less than one-third of cases.

Both acute and recurrent epididymitis due to sarcoidosis have been described. Winnacker et al. [19] described a patient with sarcoidosis for 11 years whose primary manifestation was bilateral recurrent episodes of epididymitis. Excisional biopsy of the left epididymis resulted in permanent relief of symptoms on the left side. Oral corticosteroid therapy resulted in an initial cessation of the right-sided epididymitis; however, a right epididymovasectomy was eventually required. Singer et al. [17] noted the occurrence of acute epididymitis at the time of presentation in a patient with erythema nodusum and iritis. Gartman [14] reported 25 cases of chronic epididymitis, of which six were of a granulomatous origin. Sarcoidosis was associated with one case, and mycobacterium tuberculosis was isolated from the remaining five.

Epididymal involvement has been detected in patients receiving corticosteroid therapy for other manifestations of disseminated sarcoidosis. Rudin et al. [22] reported a patient who was receiving corticosteroids for progressive pulmonary involvement and developed an epididymal mass one month after the institution of the therapy. Despite continued therapy and observation, an excision was done five
months later, confirming, histologically, the sarcoid involvement. McGowan et al. [20] reported a case of sarcoidosis of five years’ duration who developed a scrotal mass. The patient was receiving corticosteroid therapy, but it is unclear if the mass preceded the institution of therapy. Spontaneous resolution of the epididymal involvement has been reported twice. While under treatment with local corticosteroid drops for ophthalmologic complications, a patient underwent resolution of biopsy-proven epididymal sarcoidosis [17]. Hines et al. [18] described one patient who had spontaneous resolution of the epididymal involvement.

Epididymal and testicular tumors are most frequent in the twenty to forty age range, similar to sarcoid involvement in these organs. In Table 1, it can be seen that
of the 20 cases where the ages could be determined were in this age range. Epididymal tumors are most often benign; Gibson reviewed 134 cases, of which 74 percent were benign [4]. The diagnosis of carcinoma of the epididymis is often difficult as it may simulate recurrent epididymitis. Carcinoma of the epididymis is often painful, similar to epididymitis, in contrast to the usually painless character of sarcoid involvement. Malignancies of the epididymis and testicles are often rapidly fatal with pulmonary metastases frequent in the terminal stage of the disease, while sarcoidosis in these organs in self-limited.

Spermatic granulomata of the epididymis must be separated from those due to sarcoidosis. These are usually distinguished by a history of trauma to the testes, previous genito-urinary surgery and tenderness on palpation. Histopathologically, a thorough search for spermatozoa must be made and special stains may be necessary to exclude this entity. Spermatozoa are not infrequently found within tuberculose granulomas of the epididymis [19].

Azospermia and fertility problems may arise from sarcoidal involvement of the epididymis. The periductal distribution of the granulomas may cause extrinsic ductal compression and/or Leydig cell damage. Rudin et al. [22], therefore, have recommended a semen analysis in patients with sarcoidosis, prior to scrotal exploration. However, to our knowledge, there have been no cases reported of infertility related to sarcoidosis.

The two cases presented and the review of the literature demonstrate that sarcoidosis, as well as other better recognized entities such as tuberculosis, tumor, and spermatic granuloma should be considered in the differential diagnosis of scrotal masses. The natural history of the disease remains unclear but can resolve spontaneously. We suggest that it is not necessary to biopsy patients who, at presentation, have sarcoidosis in many organ systems. However, should the lesion develop on therapy or the problems of excluding tuberculosis and tumor arise, then epididymal biopsy should be mandatory.

Note Added in Proof

The simultaneous occurrence of asymptomatic intrathoracic sarcoidosis and a symptomatic testicular tumor has recently been reported [26].

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