Chapter 45
Sarcoidosis

Diletta Bonciani, Federico Perfetto, Costanza Marchiani, and Alberto Moggi Pignone

Definition

Sarcoidosis is a multisystemic disorder of unknown origin characterized by the accumulation of lymphocytes and mononuclear phagocytes that induce the formation of noncaseating epithelioid granulomas with secondary derangement of normal tissue or organ anatomy and function. It occurs throughout the world, at any age, in person of either gender, and in all races. The incidence peaks between the second and third decades, with a second upsurge occurring in women between the fourth and sixth decades.

Virtually any organ can be affected; however, granulomas most often appear in the lungs or the lymph nodes. The disease also often affects the eyes and the liver. Although less common, sarcoidosis can affect the heart and brain. Symptoms usually appear gradually but can occasionally appear suddenly. The clinical course generally varies and ranges from asymptomatic disease to a debilitating chronic condition that may lead to death [1].

Cutaneous disease occurs in up to 20 % of cases; lesions often appear at the onset of systemic illness, providing a valuable opportunity for early diagnosis. The cutaneous manifestations are variable, sometimes being very obvious and at other time perplexing. They mimic a wide array of dermatological conditions posing a diagnostic challenge to dermatologists worldwide.

D. Bonciani, M.D.
Area Critica Medico-Chirurgica, Dermatologia, Casa Di Cura Santa Chiara, Florence, Italy

F. Perfetto, M.D. • C. Marchiani, M.D.
Department of Internal Medicine, Azienda Ospedaliera Universitaria Careggi, Florence, Italy

A.M. Pignone, M.D., Ph.D. (✉)
Department of Internal Medicine, University of Florence, Largo Brambilla No. 3, 50134 Florence, Italy
e-mail: alberto.moggipignone@unifi.it

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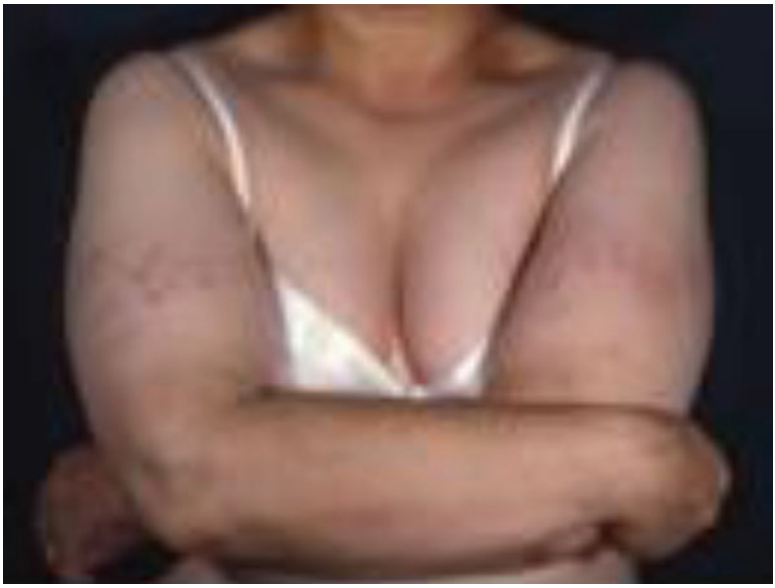


Fig. 45.1 Specific lesions of sarcoidosis: Erythematous maculopapules, in a patient with cutaneous sarcoidosis, involving in a symmetrical way the upper extremities

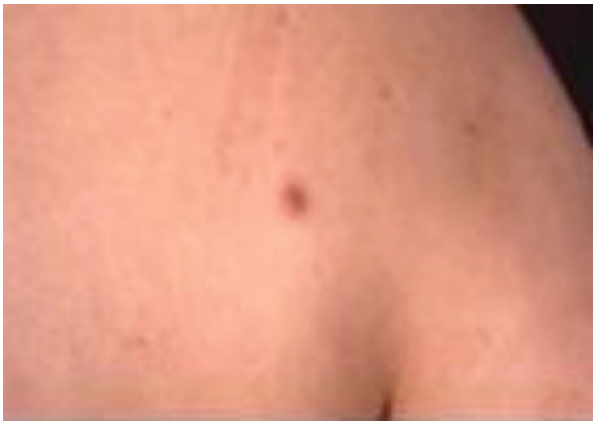


Fig. 45.2 The same patient of Fig. 45.1. Erythematous-isolated nodule on the back, this is the first lesion appeared

Based on the histological findings, skin lesions of sarcoidosis have been classified as "specific" (when a typical granulomatous infiltrate is present in the sample tissue) and "nonspecific" (not contain granulomas and represent a reactive process).

Specific lesions include lupus pernio, maculopapular eruptions, subcutaneous nodules, infiltrative scars, and plaques. Of these, maculopapular and nodular eruptions are the most common (Figs. 45.1 and 45.2). Nonspecific manifestations,

except for erythema nodosum, are uncommon, such us calcifications, erythema multiforme, prurigo, nail clubbing, and Sweet syndrome (an acute febrile neutrophilic dermatosis).

If the diagnosis of sarcoidosis is strongly suspected on clinical and pathological grounds, then further investigation should be tailored to identify systemic disease and establish a baseline of disease activity. Mandatory baseline investigations should include chest X-ray, pulmonary function tests (including measurement of transfer factor), electrocardiogram, full blood count, biochemistry, serum immunoglobulins, and a 24-h urinary calcium assay. Measurement of serum angiotensin-converting enzyme (ACE), which is produced by sarcoidal granulomas, may be helpful in monitoring disease activity. It is not a particularly useful diagnostic test as levels may be raised in other conditions such as diabetes and alcoholic liver disease.

Differential Diagnosis

There is a large group of skin diseases that can enter in the differential diagnosis with cutaneous sarcoidosis manifestations, either clinically or/and pathologically. In fact cutaneous sarcoidosis is known as the "great imitator" because of its widely variable morphologies. A high index of clinical suspicion is needed to consider sarcoidosis.

Papules and maculopapules, the most common types of specific lesion, may resemble xanthelasma, acne, rosacea, syphilis, polymorphous light eruption, lupus erythematosus, adenoma sebaceum, lichen planus, syringoma, and granuloma annulare. Micropapular sarcoidosis is an unusual variant; it should be included in the differential diagnosis of lichen nitidus and lichen scrofulosorum.

Sarcoidal plaques (angiolupoid and annular plaques) may mimic lupus vulgaris, necrobiosis lipoidica, morphea, leprosy, leishmaniasis, lichen planus, nummular eczema, cutaneous T-cell lymphoma, B-cell lymphoma, Kaposi sarcoma, secondary syphilis, and gyrate erythema. Moreover, sarcoidosis may manifest as psoriasiform plaques.

Subcutaneous nodules are an unusual manifestation that should be clinically distinguished from tuberculosis, deep mycosis, cutaneous metastases of visceral neoplasm and melanoma, epidermoid cysts, lipomas, rheumatoid nodules, and erythema induratum.

Lupus pernio is the most characteristic skin lesion of sarcoidosis; the differential diagnosis includes lupus erythematosus, benign or malignant lymphocytic infiltrate, and rhinophyma.

In the differential diagnosis of scar sarcoidosis, keloid should be considered.

Scalp sarcoidosis is a rare manifestation, but insidious progressive alopecia caused by sarcoidosis should also be differentiated from lupus erythematosus, lichen planopilaris, pseudopelade, and alopecia neoplastica.

The clinical differential diagnosis of hypopigmented lesions includes postinflammatory hypopigmentation, pityriasis alba, pityriasis lichenoides chronica,

mycosis fungoides, pityriasis versicolor, leprosy, vitiligo, idiopathic guttate hypomelanosis, and chemical-induced hypopigmentation.

Nail involvement is rare, and usually it is a marker of chronic disease, the differential diagnosis including fungal infection, psoriasis, lichen planus, trauma, drug eruption, and subungual warts [2].

Histology

Punch or incisional wedge biopsy is typically used to obtain a sample of skin that includes the dermis. If noncaseating granulomas are found, tissue culture may be necessary to exclude infectious causes.

The characteristic histological features of sarcoidosis are noncaseating epithelioid granulomas, with minimal or absent associated lymphocytes or plasma cells (naked granuloma), and within the giant cells, Schaumann bodies and asteroid bodies may be found but are not specific for sarcoidosis. Schaumann bodies are rounded, laminated basophilic inclusions that represent degenerating lysosomes, whereas asteroid bodies represent engulfed collagen seen as eosinophilic stellate inclusions (Figs. 45.3 and 45.4).

See Also

Identify in the book where the lesion or the disease is also mentioned and described

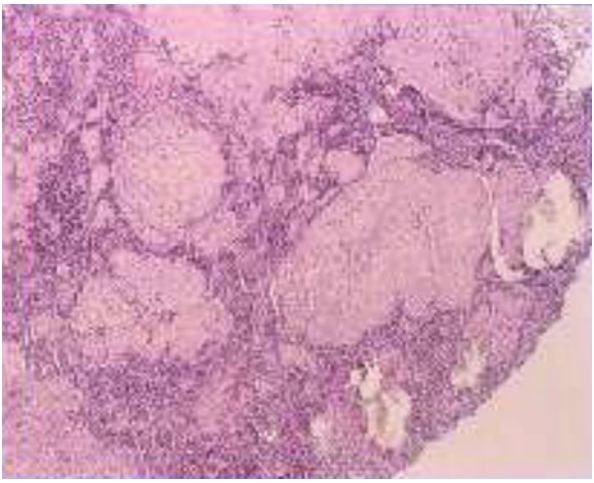


Fig. 45.3 The dermis is replaced by uniform circumscribed nests of noncaseating granuloma

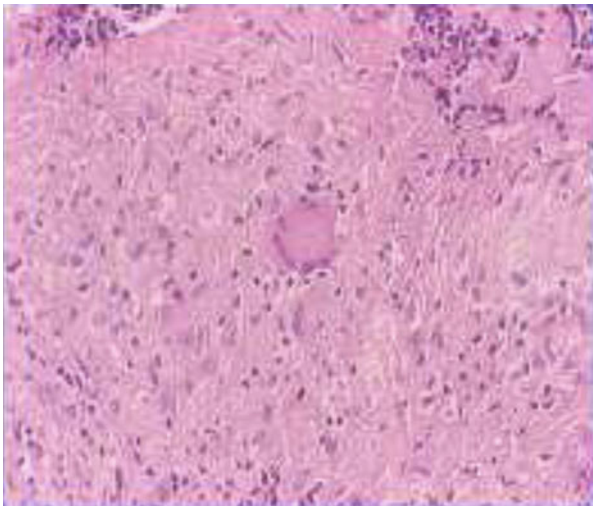
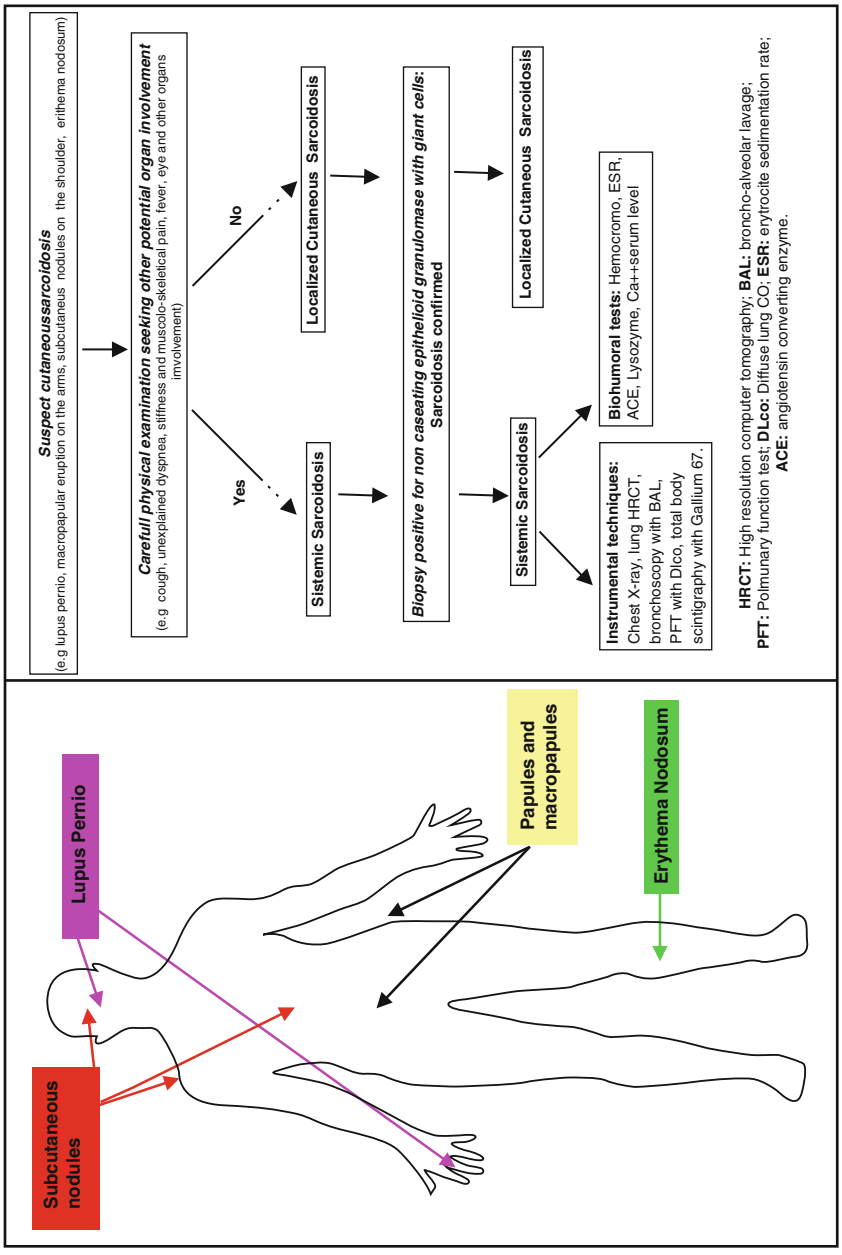


Fig. 45.4 The dermis is replaced by uniform circumscribed nests of noncaseating granuloma


Suspect cutaneoussarcoidosis
(e.g lupus pernio, macropapular eruption on the arms, subcutaneus nodules on the shoulder, erithema nodosum)
Carefull physical examination seeking other potential organ involvement
(e.g cough, unexplained dyspnea, stiffness and muscolo-skeletical pain, fever, eye and other organs involvement)
Yes
No
Sistemic Sarcoidosis
Localized Cutaneous Sarcoidosis
Biopsy positive for non caseating epithelioid granulomase with giant cells: Sarcoidosis confirmed
Sistemic Sarcoidosis
Localized Cutaneous Sarcoidosis
Instrumental techniques: Chest X-ray, lung HRCT, bronchoscopy with BAL, PFT with Dlco, total body scintigraphy with Gallium 67.
Biohumoral tests: Hemocromo, ESR, ACE, Lysozyme, Ca++serum level
HRCT: High resolution computer tomography; BAL: broncho-alveolar lavage;
PFT: Polmunary function test; DLco: Diffuse lung CO; ESR: erytrocite sedimentation rate;
ACE: angiotensin converting enzyme.
Subcutaneous nodules
Lupus Pernio
Papules and macropapules
Erythema Nodosum

References

1. Ali MM, Atwan AA, Gonzalez ML. Cutaneous sarcoidosis: updates in the pathogenesis. J Eur Acad Dermatol Venereol. 2010;24(7):747–55.
2. Fernandez-Faith E, McDonnell J. Cutaneous sarcoidosis: differential diagnosis. Clin Dermatol. 2007;25:276–87.