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CASE REPORT

A Rare Case of a Tuberculosis Patient with Sarcoidosis

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Background: Sarcoidosis and tuberculosis are chronic diseases that rarely occur concomitantly. We present the case of a 39-year-old woman with microbiological confirmation of pulmonary tuberculosis and concomitant sarcoidosis. Four weeks after corticosteroid therapy for sarcoidosis was introduced we had positive findings of mycobacterium culture from bronchial aspirate. Based on these results, corticosteroid therapy was discontinued and the patient received anti-tuberculosis therapy for six months as required by the national guidelines. During this period, new nodes on face, nose, and ear appeared and the patient was diagnosed with skin sarcoidosis. The patient received colchicine and corticosteroids as per the national guidelines.

Conclusion: In cases of diagnostic uncertainty between sarcoidosis and tuberculosis we should administer corticosteroid therapy until we have microbiological confirmation of mycobacterium culture.

BACKGROUND

Systemic granulomatosis is frequently encountered in pneumology. Distinguishing sarcoidosis from pulmonary tuberculosis can be a great challenge to physicians, especially in Romania where tuberculosis is highly prevalent. Sarcoidosis and tuberculosis are chronic diseases that rarely occur simultaneously. Pulmonary tuberculosis is an infectious disease characterized by granulomas with caseous necrosis and in contrast, sarcoidosis is a granulomatous disorder characterized by the presence of non-caseating granulomas in the involved organs.[1] In few situations, tuberculosis develops as an opportunistic infection following corticosteroid treatment for sarcoidosis.

CASE REPORT

A 39-year-old female patient weighing 55 kilograms was admitted to the clinic because of weight loss (5 kilograms in over 2 weeks, 50 kilograms in total). The patient had no past history of sarcoidosis, had not been given BCG vaccine, had dry cough, night sweats, erythema nodosum, and mild effort dyspnea. She had no fever during admission, oxygen saturation was 90%, blood pressure - 135/80 mm Hg, was tachycardic (101 beats per second), she smoked 25 cigarettes daily for over 10 years, and was without other associated pathology. Laboratory results: she was HIV-negative, glucose 108 mg/dL, hemoglobin level 12.6 g/dl, white blood cells 10350/ mm^3, ESR 4.2/ mm^3 (severe anemia). The C reactive protein was 10.2 mg/L, alanine transaminase 67 U/I, aspartate transaminase 54 U/I, gamma-glutamyl transferase 90 U/L, antinuclear antibodies and antineutrophil cytoplasmic antibodies search were negative, hypergammaglobulinemia 15.6 g/L, proteinuria was positive at 0.3 g/24h, albumin 3.1 g/dL, total serum calcium 11.2 mg/dL, while urea and creatinine in serum were within normal range. Tuberculin skin test (2 IU) was 6 mm of induration in diameter (tuberculosis test was read 72 hours after injection and the induration was measured by the ball-point method in millimeters). Angiotensin converting enzyme was elevated (121 U/I), the immunohistochemical evaluation of biopsy specimen from a lymph node revealed immunoreactivity with CD68 in epithelial histiocytes. The result of

spirometry measured 81% of vital capacity, 91.5% of forced vital capacity, 72% of forced expiratory volume, 84.4% of forced expiratory volume in the first second and FEV1/FVC ratio index of 87.2%. Arterial blood gases: paO_2 9.6 kPa, $paCO_2$ 6.0 kPa, pH 7.43 and diffusing capacity of carbon monoxide 70%. Ophthalmologic examination found ocular hypertension, sequels of bilateral anterior uveitis with large basis iridocornean synechia.

The posterior-anterior projection of the chest radiography ***(Fig. 1)*** *showed bilateral micronodular interstitial infiltrations, with fibrous changes of hilus. Fibronodular changes in the area of both upper lobes with lung traction and ground glass pattern.*

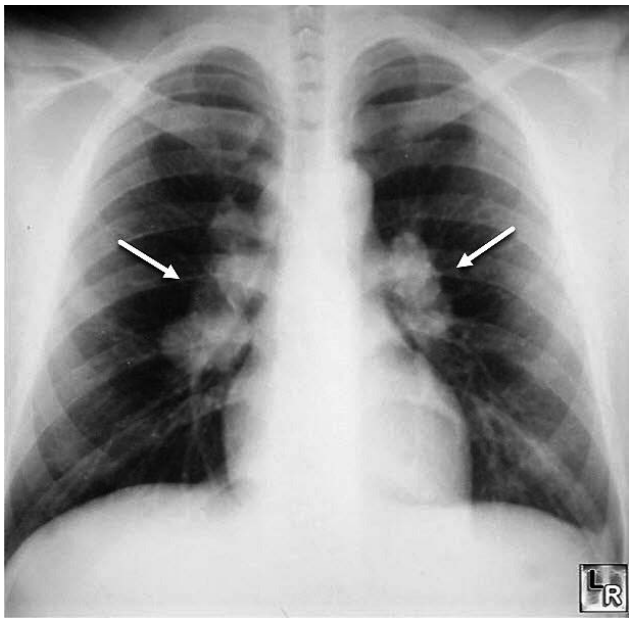

Figure 1. Postero-anterior chest radiography.

The thorax HRCT ***(Fig. 2)*** *showed interlobar and peribronchial thickness in upper lung lobes with subpleural fibroses and deformation of bronchi.[2] There was a cavity 7×11 mm large in apical posterior segment of the upper left lobe. The hilar lymph nodes were more than 2.2 cm in diameter, some of them had fibrous changes and some were calcified. HRCT showed hilar lymph nodes enlargement and granulomas with reticular interstitial pattern in the lower respiratory part.*

The bronchial biopsy ***(Fig. 3)*** *showed chronic granulomatous inflammation without caseous necrosis.*

In the bronchoalveolar lavage, CD4 lymphocytes and alveolar macrophages were predominant. The ratio of CD4/CD8 lymphocytes was 5.7:1. There was no overlapping of these conditions. Due to the lack of time and in the interest of the patient, respectively of the hospital equipment, the patient had to be diagnosed by the normal protocol. So, it was decided that in the best interest of the female patient, to put her on corticosteroid therapy, with prednisolone (1 mg/kg b. w.). 24 days after initiating the corticosteroid therapy, culturing the sample on Lowenstein-Jensen medium, mycobacterium tuberculosis was isolated. The strain of tuberculosis was sensitive to first-line antibiotics. Corticosteroid therapy was excluded after this new result and antituberculous therapy was introduced. The patient was treated according to national guidelines with vitamin B6 250 mg, rifampicin 600 mg, isoniazid 300 mg, etambuthol 1200 mg, and pyrazinamide 1500 mg depending on the weight of the patient, on a daily basis over 8 weeks.[3] The patient was all the

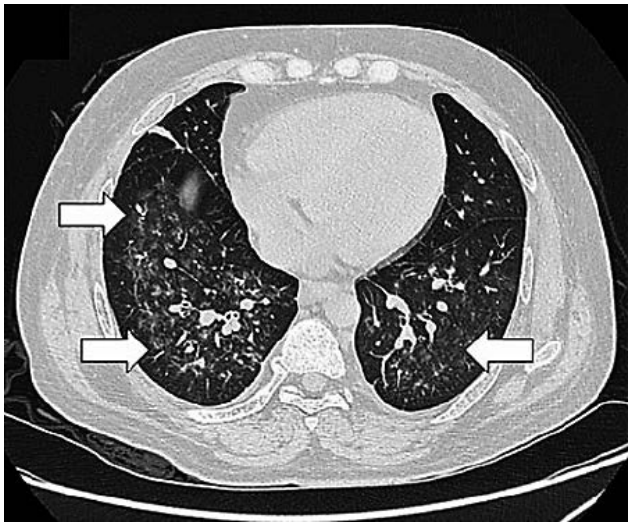

Figure 2. High resolution computed tomography.

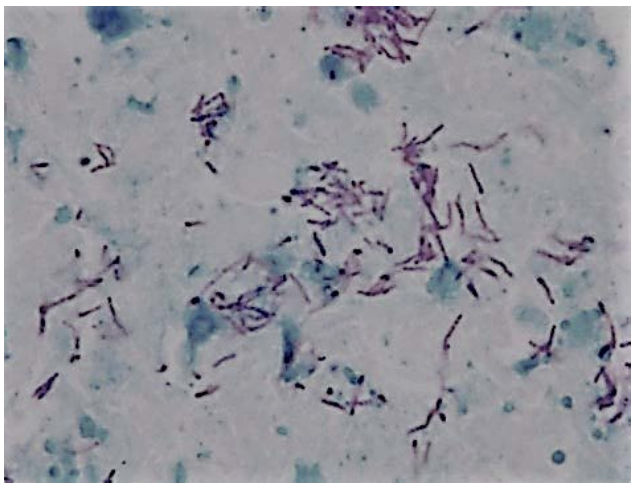

Figure 3. Histopathology sample 1.

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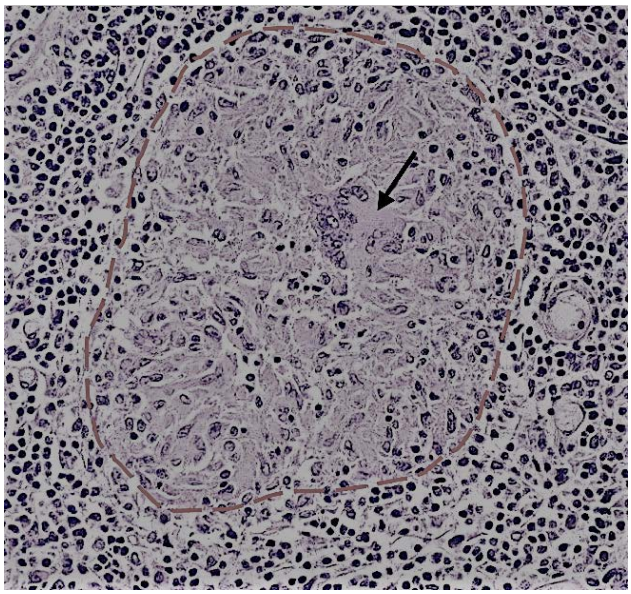

Figure 4. Histopathology sample 2.

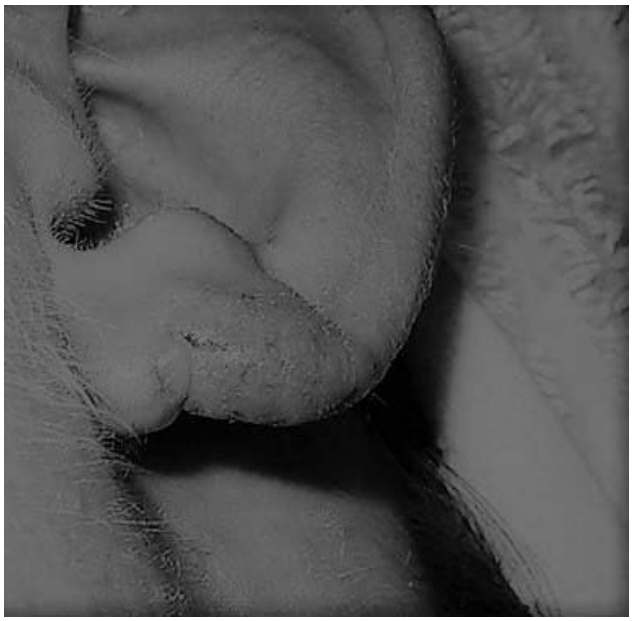

Figure 5. Ear nodule.

Table 1. Differential diagnosis between sarcoidosis and tuberculosis (synthesized)

	Clinical differences	
Skin lesions	Common	Rare (lupus vulgaris)
Lupus pernio	Diagnostic	None
Erythema nodosum	Common	Rare
Eye disease	Common	Rare
Pleural disease	Very rare	Common
Cranial nerve VII palsy	Common	Rare
Pattern of organ involvement	Uveal tract, salivary and lacrimal glands, heart and skeletal muscles, liver and spleen and small bones of hand and feet are commonly involved in sarcoidosis but are rarely seen in tuberculosis.	Adrenal glands may be involved in caseating tuberculosis but almost never in sarcoidosis. Involvement of small intestine is common in TB but rare in sarcoidosis.
Marked constitutional symptoms (night sweats and weight loss)	12%	More suggestive of tuberculosis

time in a good clinical condition. However, angiotensin converting enzyme was continuously raised (98 U/I). After 16 weeks of antituberculous therapy, chest radiography showed complete regression of the tiny infiltrates in both upper lobes. Antituberculous therapy was administered for the next two months until negative mycobacterium culture in new collected sputum was obtained. During the last month of antituberculous therapy, firm nodes appeared on face, nose ***(Fig. 6)*** *and ear* ***(Fig. 5)*** *and histological tests (****Fig. 4*** *- sample 2) indicated sarcoidosis of the skin. After 24 weeks of antituberculous treatment, the female patient received daily prednisolone 40 mg and colchicine 200 mg for sarcoidosis. After 16 weeks (four months total) of corticosteroid therapy, chest radiography showed almost complete regres-*

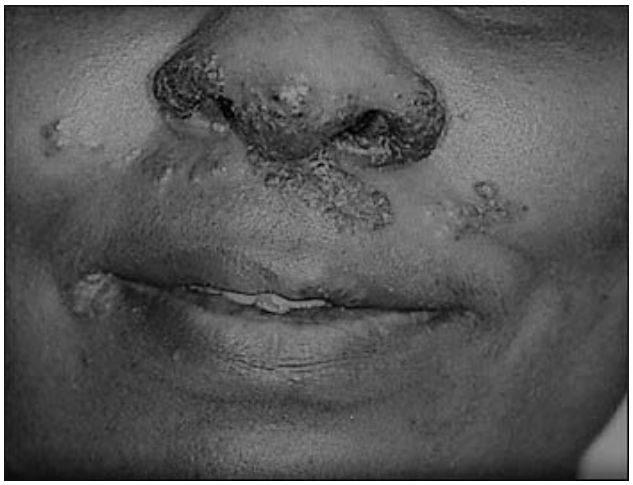

Figure 6. Nose nodule.

sion of nodular infiltrates in lung parenchyma, and skin changes were considerably smaller. The patient recovered from tuberculosis. This is an interesting case of multi-organ sarcoidosis with positive mycobacterium culture obtained from bronchial aspirate. Histological findings of lung and bronchial wall suggested sarcoidosis, but the confusing fact was positive tuberculosis skin test. Sarcoidosis may present with a wide range of symptoms. The presented case is interesting because it is very rare that pulmonary tuberculosis and lung sarcoidosis concur in the same patient.

DISCUSSION

I have presented the interesting case of a patient with microbiological confirmation of pulmonary tuberculosis and also pulmonary and skin sarcoidosis at the same time and have emphasized the diagnostic problems that may occur when these conditions coexist. The beginning of steroid therapy in patients with underlying infection may accentuate life threatening complications.[4] In the majority of cases when there is a dilemma in diagnosis between tuberculosis and sarcoidosis, if we can, we should apply a rapid molecular assay for TB like Xpert MTB/RIF or LPA or in cases where we do not have access to this technology we can advance with corticosteroid therapy until we have microbiological confirmation of mycobacterium culture.

REFERENCES

1. Rosen Y. Sarcoidosis. In: Dail DH, Hammer SP, eds. Pulmonary pathology. New York, NY: Springer-Verlag; 1994; 13-645.
2. Smithuis R, van Delden O, Schaefer-Prokop C. Lung - HRCT Common diseases. Radiology Assistant 2007; December 20.
3. National Institute of Pneumology "MARIUS NASTA" The Program for Prevention, Supervision and Control of Tuberculosis, 2015 Methodological Guide. Bucharest, Ministry of Health, 2015; 29-40.
4. Paramonthayan S, Lasserson T. Treatments for pulmonary sarcoidosis. Respir Med 2008; 102: 1-9.

Редкий случай больного туберкулёзом с саркоидозом

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Введение: Саркоидоз и туберкулёз являются хроническими заболеваниями, которые редко возникают одновременно. Мы сообщаем о случае 39-летней женщины с микробиологическими признаками туберкулёза лёгких и сопутствующего саркоидоза. Через четыре недели после введения кортикостероидов при саркоидозе мы установили положительные результаты в отношении микобактериальной культуры бронхиального аспирата. На основании этих результатов терапия кортикостероидами была прекращена, и пациентке была назначена противотуберкулёзная терапия в течение шести месяцев в соответствии с требованиями государственного стандарта. В этот период появились новые узелки на лице, носу, ухе и у больной был диагностирован саркоидоз кожи. Больной давали колхицин и кортикостероиды в соответствии с государственным стандартом.

Заключение: В случае сомнений относительно диагноза между саркоидозом и туберкулёзом нам необходимо назначить терапию кортикостероидами, пока мы не получим микробиологическое подтверждение на основе микобактериальной культуры.