



Clinical Case

Cecília Pacheco

Rui Rolo



Medical history



- Male, 37 years old, non-smoker.
- Mechanical engineer.
- Referred to outpatient *follow-up* on Pneumology department with suspected sarcoidosis (2009).

+ Past medical history



- Recurrent pulmonary tract infections since childhood
- Hospitalar admission (2008) due to right pneumonia with pleural effusion.
- Common variable immunodeficiency (CVID) – diagnosis on 2008, replacement therapy with IgG since 2009.
- No allergies.
- No pets.



Outpatient *follow-up* (2009)



Reports shortness of breath and cough.

Physical examination

- Vital signs stable.
- Respiratory system: clear to auscultation bilaterally, no wheezing, ronchi or crackles.
- No clubbing.

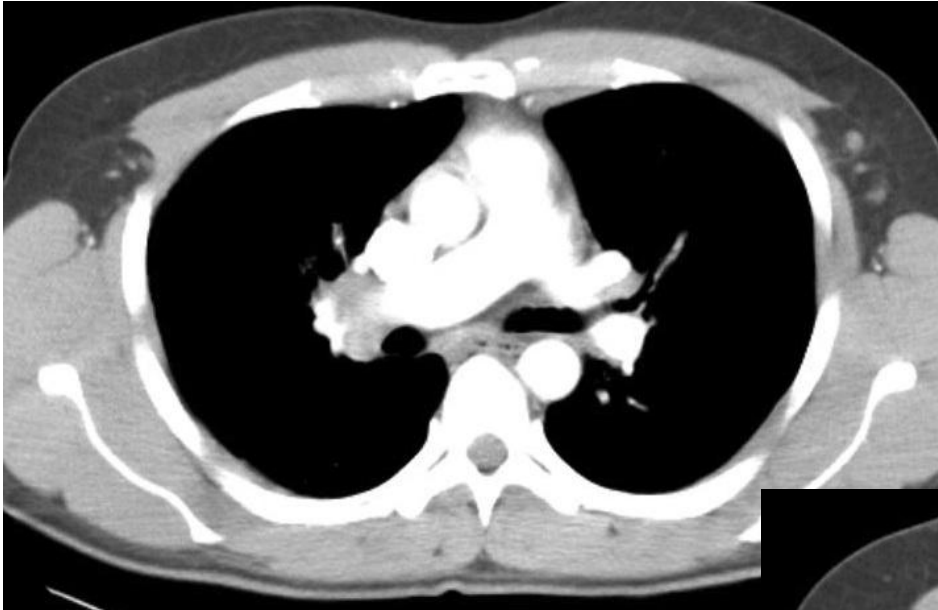
Lung function test

- Small airway obstruction

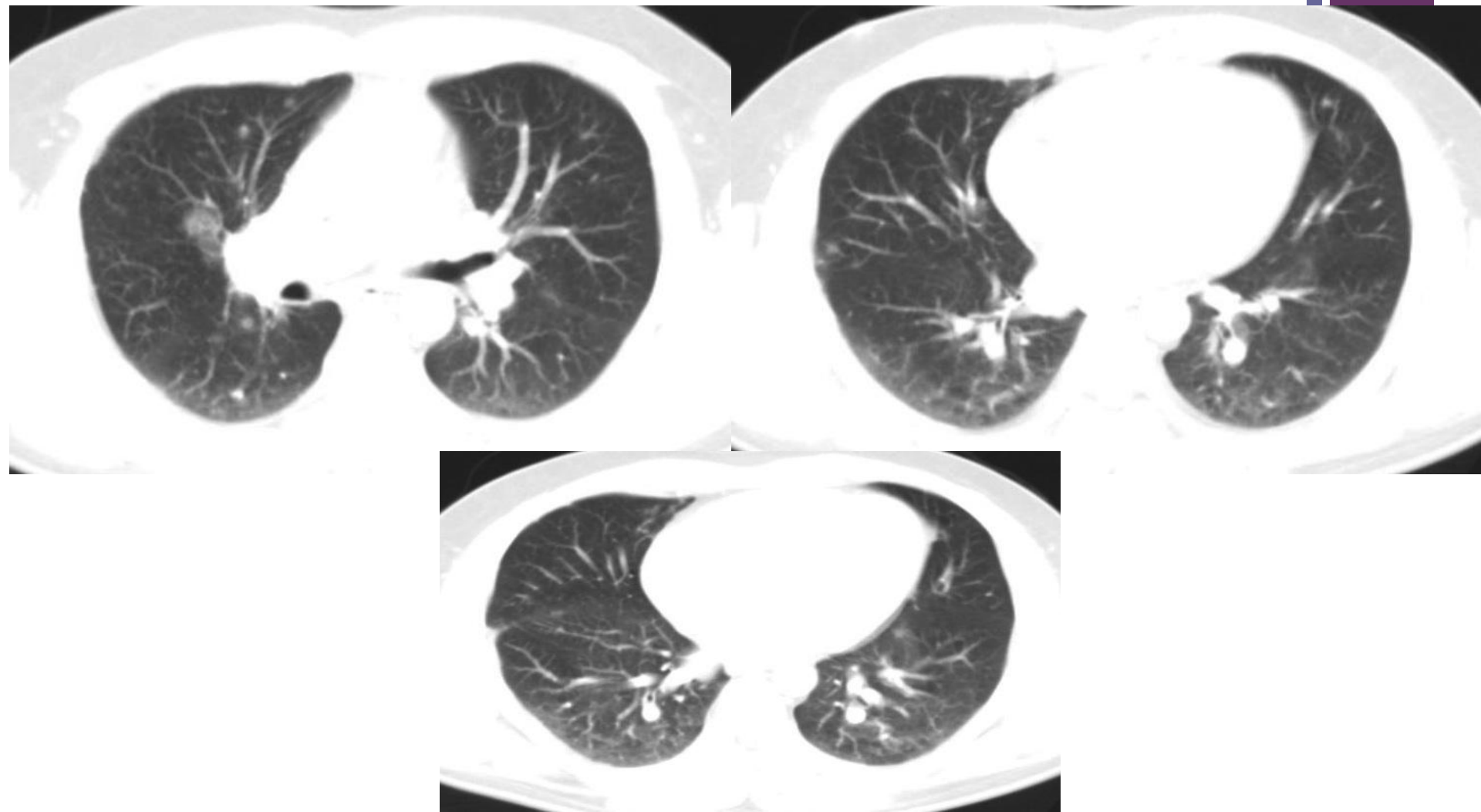
+ Thorax CT (September, 2009)



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+ Test results

Blood tests		Broncoalveolar lavage	
Leucocytes ($10^3/\text{uL}$)	4,1	Total cell count	$4,6 \times 10^5$
Platelets ($10^3/\text{uL}$)	127 ↓	Macrophages (%)	60
IgG (mg/dL)	287 ↓	Linfocytes (%)	28
IgM (mg/dL)	8 ↓	Neutrophils (%)	5
IgA (mg/dL)	6 ↓	Eosinophils	4
ACE (U/L)	61 ↑	CD4/CD8	2,2



Test results



- Other results:
 - Serologic markers HIV, HCV, HBV negative.
 - Autoimmune markers (ANAs, ANCAs) negative.
- Bronchial biopsy negative for Micobacterium or other pathogens. Negative for neoplastic cells.
- Bone marrow biopsy with non-caseous granulomatous inflammation. Negative for Micobacterium or other pathogens.



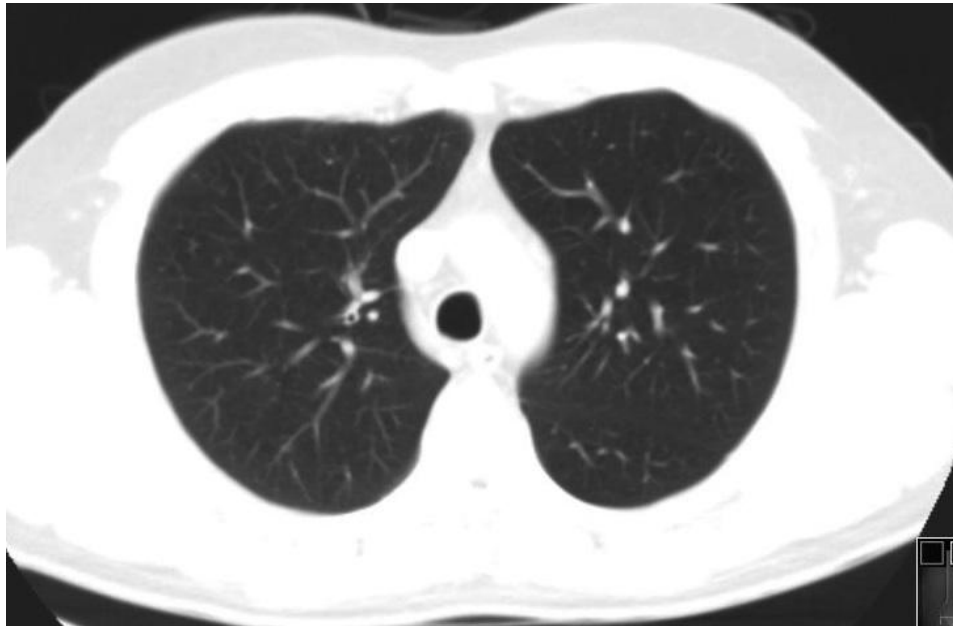
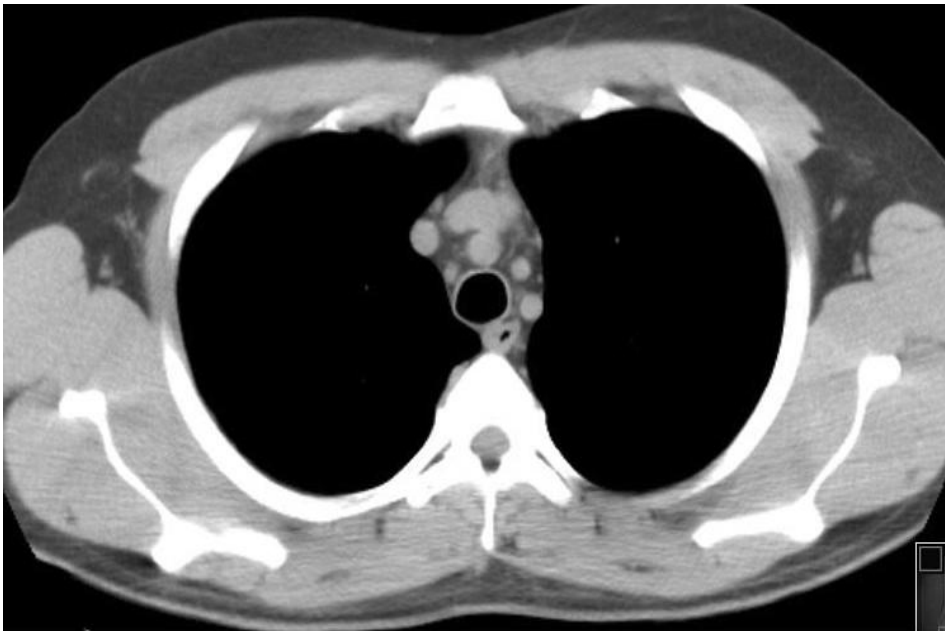
Treatment (September 2010)



- Corticotherapy (prednisolone 60 mg/day), 2 months with progressive dosage reduction.
- Replacement therapy with IgG
- *Follow-up*

+ Reevaluation (October 2010)

- Asymptomatic
- Prednisolone 50 mg/day + replacement therapy with IgG





Reevaluation (January 2011)



- Asymptomatic
- Prednisolone 10 mg/day + replacement therapy with IgG

+ April, 2011

- Fever, cough, shortness of breath.
- Bilateral ronchi

Blood tests			
Leucocytes (10 ³ /uL)	2,1 ↓	Direct Billirubin (mg/dL)	0,28 ↑
Platelets (10 ³ /uL)	48 ↓	LDH (U/L)	363 ↑
AST (U/L)	60 ↑	CRP (mg/L)	21 ↑
ALT (U/L)	83 ↑		
Total Billirubin (mg/dL)	1,05 ↑		

+ Test results

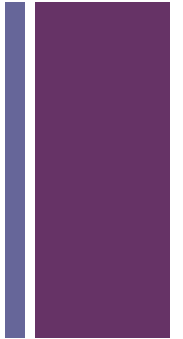
- Other results:

Autoimmune markers (ANAs, ANCA) negative.

- Bone marrow biopsy with non-caseous granulomatous inflammation. Negative for *Micobacterium* or other pathogens.



+ Treatment (April 2011)



- Levofloxacin 500 mg, PO, once a day (10 days)
- Corticotherapy (prednisolone 60 mg/day), 2 months with progressive dosage reduction.
- Replacement therapy with IgG

+ Reevaluation (June 2011)



- Asymptomatic
- Prednisolone 30 mg/day + replacement therapy with IgG

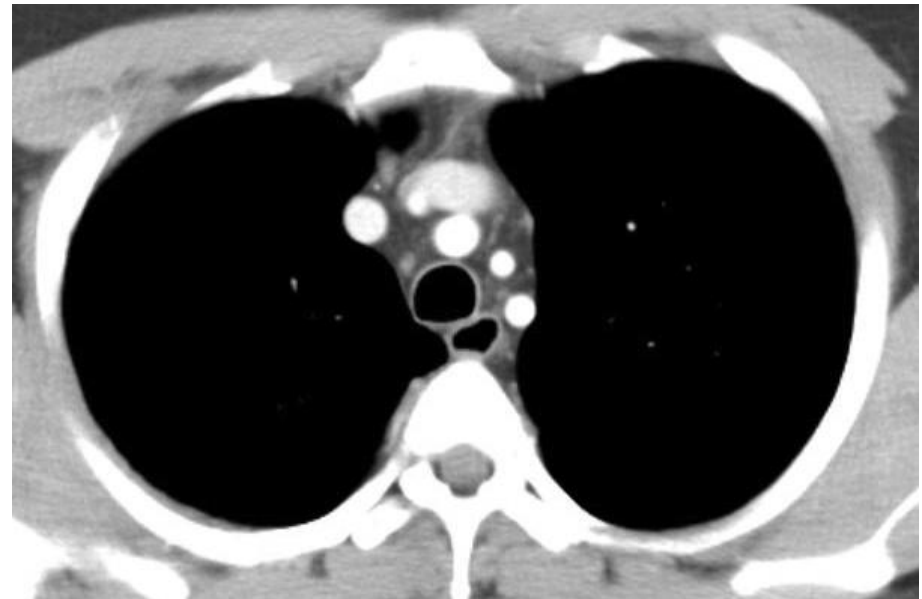
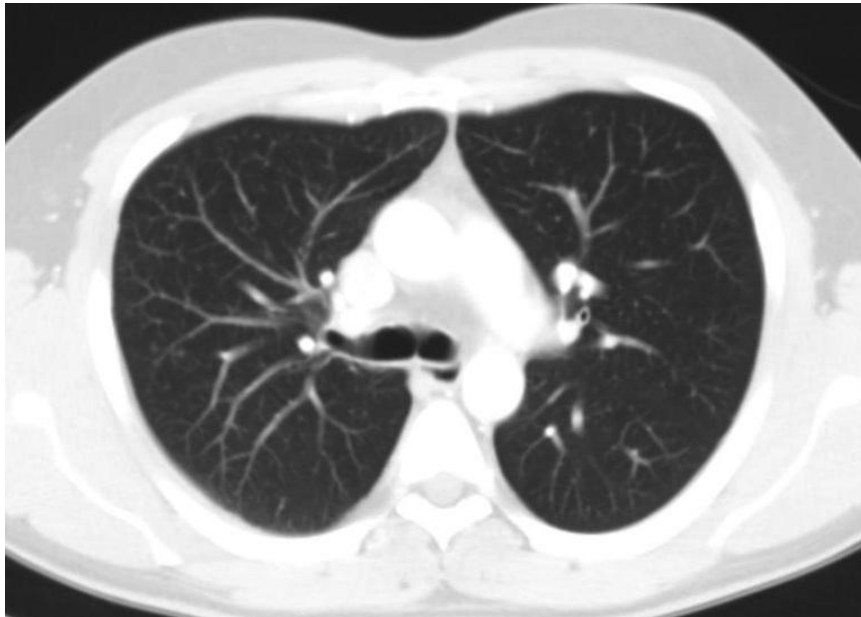
+ Reevaluation (August 2011)



- Asymptomatic
- Prednisolone 10 mg/day + replacement therapy with IgG

+ Reevaluation (September 2011)

- Asymptomatic
- Prednisolone 5 mg/day + replacement therapy with IgG





Reevaluation (January 2012)



- Asymptomatic
- Prednisolone 5 mg/day + replacement therapy with IgG
- *Follow-up*



Final diagnosis



- Multisystemic granulomatous disease in common variable immunodeficiency (CVID) ?
- Sarcoidosis and common variable immunodeficiency (CVID) ?



Common variable immunodeficiency (CVID)



- Incidence: 1:10.000 (male:female 1:1)
- Usually presents in the second and third decade
- Unclear pathophysiology: diminished ability to produce immunoglobulins
- Hypogammaglobulinemia + poor antibody responses + recurrent bacterial infections



Common variable immunodeficiency (CVID)



- CVID patients have a higher prevalence of autoimmune disease
- Some of them develop multisystemic granulomatous disease - its presence is associated with significant morbidity and early mortality.
- Lung is the most common organ system affected.
- Respiratory disease is a significant cause of morbidity and mortality among patients with CVID.



Common variable immunodeficiency (CVID) and Sarcoidosis



- Incidence of sarcoidosis in CVID is unknown.
- Sarcoidosis should be considered among patients with CVID and CVID should be considered in patients with sarcoidosis.
- Similar features with some differences.
- Unknown pathophysiology responsible for the association between these 2 disorders
- Optimal treatment of sarcoidosis vs. sarcoidosis and CVID remains to be established.
- Multisystemic granulomatous disease + CVID and sarcoidosis + CVID -> different diseases?



Common variable immunodeficiency (CVID) and Sarcoidosis



Differences	
Sarcoidosis	CVID + Sarcoidosis
No recurrent infections	Recurrent infections
Hypergammaglobulinemia	Hypogammaglobulinemia
No thrombocytopenia	Thrombocytopenia
More rare splenic involvement	Frequent splenic involvement



Bibliography



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- 6) Hampson FA et al. Respiratory disease in common variable immunodeficiency and other primary immunodeficiency disorders. PubMed 2012.
- 7) Fasano MB et al. Sarcoidosis and common variable immunodeficiency. Report of 8 cases and review of the literature. *Ann NY Acad Sci* 2012. Jan (Epub ahead of print)