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CASE REPORT

Evolution of a case of lung plasma cell granuloma

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Evolution of a case of lung plasma cell granuloma. J.E. Gonzalez-Moya, J. Hueto, A.V. Ruiz de Azua, J. Sanchez, T. Franquet.

ABSTRACT: Plasma cell granuloma, on lung inflammatory pseudotumour, is a localized benign proliferation of plasma cells and mesenchymal cells. We report the case of a 45 yr old male, who first presented with mild pain in the left side of the chest. Chest radiography was normal. Eight weeks later he had more pain and an opacity in the left and lower zones of his left chest. After another 7 weeks he had fever and cough with yellowish-green sputum. Chest X-ray then showed a round density in the left upper lobe. The final diagnosis was established after thoracotomy histological examination.

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Plasma cell granuloma (PCG) or lung inflammatory pseudotumour, is a localized benign proliferation consisting mainly of plasma and mesenchymal cells. Since first described by UMIKER and IVERSON [1] in 1954 as "postinflammatory tumours", more than 300 cases have been reported [2]. The pathogenesis of this entity is unknown, and references in this respect are uncertain. We present a case, the development of which we have been able to follow over a short period of time. There was no history of previous infection.

Case report

A 45 yr old male, attended an Emergency Service on October 3, 1988, presenting with mild pain in the left side of the chest, which had appeared a few days previously. He had no other symptoms. He was a smoker of more than 40 cigarettes per day and had brucellosis when he was 17 yrs old. There were no factors associated with increased risk of pulmonary embolus. Laboratory tests, electrocardiogram (ECG) and a chest radiograph were normal. Diagnosis was non-specific chest pain, and he was given paracetamol. Pain was relieved but it did not disappear.

On November 28, the chest pain became more severe, and a low density peripheral opacity in left middle and lower zones was seen (fig. 1). The patient was treated with erythromycin with no improvement.

He was admitted to our hospital on January 16, 1989 with fever and cough productive of yellowish-greenish sputum during the previous 48 h. Physical examination revealed a temperature of 38.2°C, and some deep inspiratory rales at the left base. The rest of the physical examination was normal. Laboratory data were unremarkable except for a sedimentation rate of 56 $mm \cdot h^{-1}$. Sputum for acid-fast bacilli, skin test for tuberculosis and serology for influenza A and B virus, respiratory syncytial virus, adenovirus, *Mycoplasma pneumoniae, Coxiella burnetti* and *Chlamydia psittaci* were all negative. Chest X-rays revealed a well-circumscribed round density in the left upper lobe (fig. 2). Computed tomography of the chest showed no evidence of cavitation or calcification, and no hilar adenopathy could be detected.

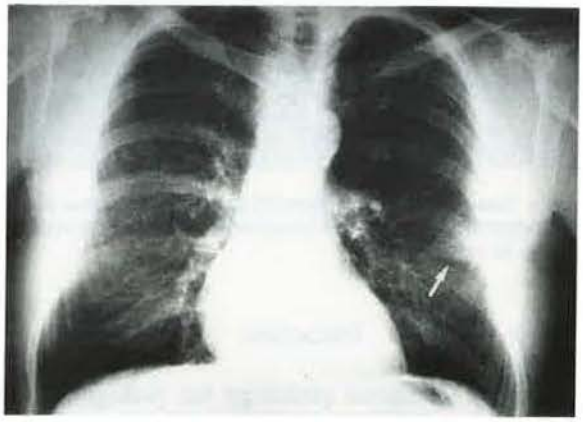

Fig. 1. - Two months after a slight lung condensation in the left upper lobe is observed (arrow).

No endobronchial lesion was found on bronchoscopy. Bronchial washings showed inflammatory cells only and *Streptococcus pneumoniae* were cultured. A needle biopsy was performed. The histology of the lesion showed the alveolar spaces completely obliterated by an infiltrate, predominantly of plasma cells with Russell bodies, lymphocytes, fibroblast-like cells and histiocytes.

The fungal stains and acid-fast smears were negative. The patient underwent a thoracotomy and a wedge resection of the tumour located in the left upper lobe with final pathological diagnosis of plasma cell granuloma (fig. 3). He has remained well in the eleven months elapsed since surgery.

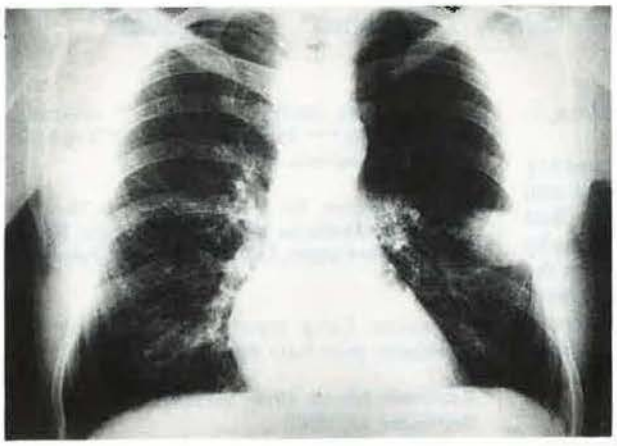

Fig. 2. – Well-circumscribed round density in the left upper lobe.

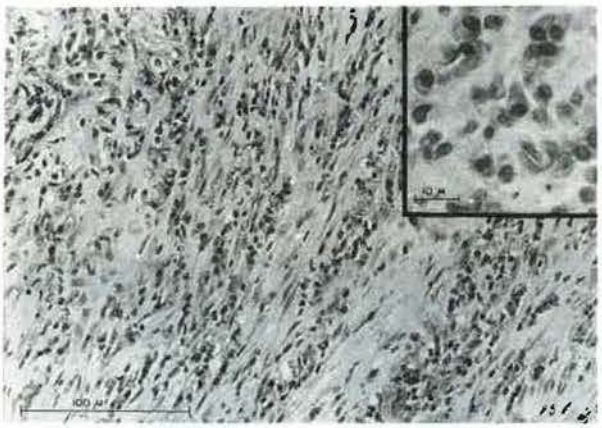

Fig. 3. – Superimposed on a fusocellular stroma, numerous plasma cells interspersed with isolated lymphocytes can be observed. Enlargement in top right corner.

Discussion

PCG is an infrequent pathology the pathogenesis of which remains unknown. It has been speculated that it could be a non-specific, inflammatory response to a variety of agents, the most common being pulmonary infection [1, 3–6], with a history of pneumonia or acute respiratory infections described in up to a third of the cases in some large series [7, 8]. Although some cases have been reported as associated with different infections, the following point to a viral origin: 1) the existence of an inflammatory infiltrate similar to those produced by viral pneumonia [7]; and 2) the presence of presumed viral particles in the bronchial epithelium in electron microscopic study [9]. Other authors point out the possibility of its appearance with no prior history of respiratory infection [10]. A possible vascular origin of the lesions has also been proposed [11], with even a myxomatous histological variety similar to the auricular myxomas [12] having been described. Very recently, the inducement of lesions in mice by instillation of endobronchial substances has been achieved [13]. PCGs are described as already formed lesions, which are discovered in routine X-ray examinations or after the appearance of some acute respiratory symptoms. These lesions usually remain stable [5, 7], although some cases of a fast growth have been reported [14, 15]. It is the view of MATSUBARA *et al.* [8] that the lesion can start to develop months or years before X-ray detection. We have found in the literature no case which started with a normal X-ray and in which the neoformation process could be observed. Only ARMSTRONG *et al.* [16] have reported an endobronchial PCG in an 11 yr old patient with wheezing, cough and haemoptysis and normal X-rays, who five weeks later and concomitantly with an episode of fever showed a peripheral opacity in the right upper lobe. We suppose that the X-ray image was caused by an obstructive pneumonitis, as the lesion was located at the entrance of the right upper lobe.

In our case, chest X-rays were normal at the appearance of the first symptoms. In the subsequent controls, as the subacute symptomatology did not disappear, we observed the radiological appearance of the pseudotumour, first as a slight infiltrate and afterwards as a round homogeneous opacity. There were no data of acute infection until two months after the onset of symptomatology, when the X-ray image showed the lesion was already formed. When the infection appeared as an associated process, it could be controlled with antibiotics, but the X-ray image underwent no modification.

In our opinion, our case supports the hypothesis of PCG appearance without a prior history of infection and we believe that these lesions can develop in a short period of time.

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Evolution d'un cas de granulome pulmonaire à plasmocytes.
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RÉSUMÉ: Le granulome à plasmocytes, ou pseudo-tumeur inflammatoire pulmonaire, est une prolifération bénigne localisée de plasmocytes et de cellules mésenchymateuses. Nous présentons l'observation d'un homme de 45 ans, dont les plaintes initiales étaient une douleur légère hémithoracique gauche. Le cliché thoracique était normal. Après 8 semaines, la douleur s'est accentuée et l'on a vu apparaître une opacité dans l'hémithorax gauche. Après 7 semaines, une poussée fébrile s'accompagne de toux et d'expectoration jaune-verdâtre. A ce moment, le cliché thoracique révèle une opacité arrondie dans le lobe supérieur gauche. Le diagnostic final fut obtenu après thoracotomie à visée diagnostique accompagnée d'examen histo-pathologique.
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