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(CASE REPORT)

Association of pleural tuberculosis and hydatid cyst revealed by hydropneumothorax

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Abstract

Morocco is an endemic country for both pleural tuberculosis and hydatid cysts. The coexistence of these two conditions in the lung is rare, especially in the same lesion. In this article, we report the case of a lung hydatid cyst associated with tuberculosis infection, diagnosed by pleural biopsy. We report this case as a reminder that such an association exists and should be borne in mind, especially in endemic countries.

Keywords: Hydatid cyst; Tuberculosis; Co-infection; Surgery

1. Introduction

Pleural tuberculosis and pulmonary hydatidosis are two infectious diseases that are endemic in Morocco. Coexistence of the two conditions in the same lesion is rare; only a few cases have been reported in the literature, mainly from Asia [1-6]. This association poses a diagnostic problem, often leading to pleural tuberculosis being overlooked before histopathological diagnosis of the surgical specimen. We report a new case of pleural tuberculosis diagnosed on pleural biopsy, with a review of the literature.

2. Case report

This 45-year-old patient, a housewife with no toxic habits, never treated for tuberculosis and no recent tuberculosis contagion, with a 10-year history of contact with dogs, not known to be diabetic or hypertensive, had been presenting for a week with stabbing right chest pain aggravated by deep inspiration, associated with Sadoul stage III dyspnea and a chronic dry cough with no notion of hemoptysis or other associated signs. All this evolved in a context of feverish sensations, night sweats and altered general condition with asthenia and weight loss of 06 kilos in 2 months.

Clinical examination reveals a conscious patient, saturation 96% on room air, heart rate 89 bpm, respiratory rate 20 cpm, blood pressure 14/7, presence of a mixed effusion syndrome of the right hemithorax (basithoracic fluid syndrome topped by air effusion). A frontal chest X-ray (fig. 1) showed a right basithoracic opacity of homogeneous dense watery tone obliterating the diaphragmatic dome and the diaphragmatic cul-de-sac, surmounted by avascular hyperclarity in favor of a hydropneumothorax. The patient was admitted to hospital, and an exploratory pleural puncture was performed, revealing an exudative citrine-yellow fluid. A pleural biopsy was then performed, and the patient was drained. The thoracic CT scan (fig2) showed a 4/4.5 cm thick-walled cavitary image of the middle parahoracic lobe, parascissural and peripheral, with hypodense intra-cavity material taking up contrast; there was also a hydroaeric right pleural effusion with drain in place.

Blood tests were normal, and sputum was negative for koch bacilli. Histological examination of the pleural biopsy revealed pleural tissue containing an inflammatory granulomatous infiltrate of epithelioid cells with caseous necrosis.

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The diagnosis of a ruptured pulmonary hydatid cyst was based on contact with dogs, positive hydatid serology and the radiological appearance on thoracic CT. The patient underwent a right thoracotomy, perikystectomy, decortication and pleurectomy, with forwarding of the surgical specimen for anatomopathological examination, which revealed a hydatid cyst with a wall composed of two layers. The inner germinative layer gives rise to proligeral vesicles containing scolex. The second parietal layer is an anhistatic cuticle.

Antibacillary treatment with isoniazid, rifampicin, ethambutol and pyrazinamide was prescribed in accordance with the national tuberculosis control program, with good clinical and radiological progression. The postoperative course was straightforward, with removal of the postoperative drain. The patient was regularly monitored for 6 months and no recurrence or complications were noted.

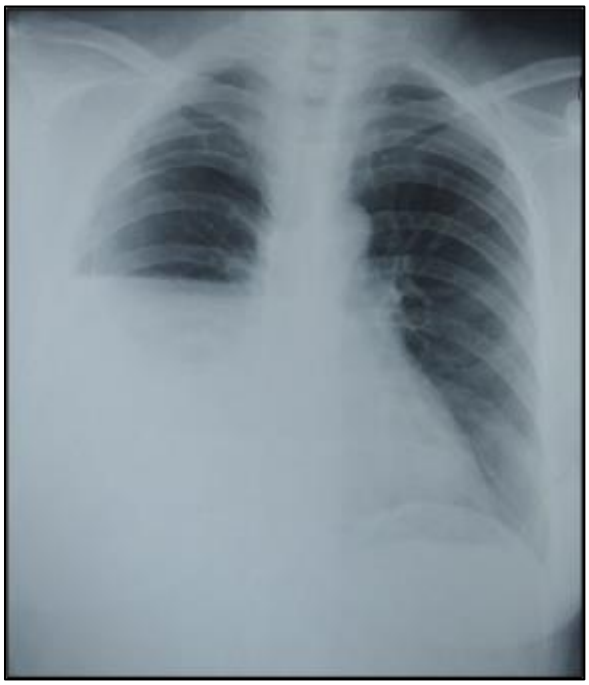

Figure 1 Right basithoracic opacity of homogeneous dense watery tone obliterating the diaphragmatic dome and the diaphragmatic cul-de-sac surmounted by avascular hyperclarity in favor of a hydropneumothorax

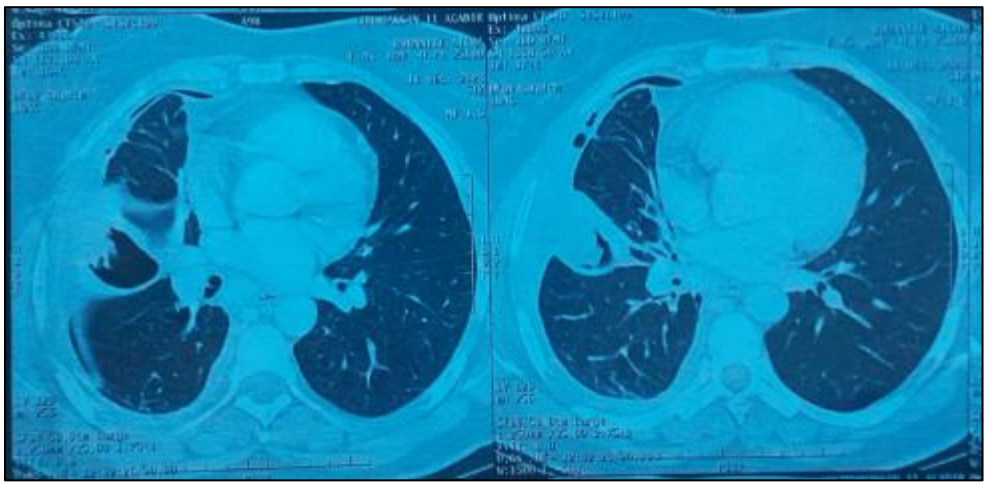

Figure 2 a 4/4.5 cm thick-walled cavitary image of the middle para hilar lobe, parascissural and peripheral, with intracavitary hypodense and contrast-enhancing material; there was also a hydroaeric right pleural effusion

3. Discussion

Morocco is an endemic country for both pleural tuberculosis and pulmonary hydatidosis, despite the efforts made by health authorities to combat these two scourges. Low socio-economic status and unhygienic practices contribute to the emergence of these diseases. The incidence of human echinococcosis is closely linked to the prevalence of the disease in domestic animals. Humans are exposed to tapeworm eggs after close contact with a contaminated dog or its environment. In general, larvae that pass through the liver are trapped in pulmonary arterial capillaries and develop into hydatid cysts. According to data from the Ministry of Public Health, the number of cases of hydatidosis operated on amounted to 5.6 cases/100,000 inhabitants. Tuberculosis remains the world's most deadly infectious disease, with devastating health, economic and social consequences. In Morocco, tuberculosis remains a real public health problem, and a priority for the Ministry of Health and Social Protection. Tuberculosis is a social disease, most often found in disadvantaged communities and among individuals suffering from economic and social problems. Indeed, between 2000 and 2023, tuberculosis incidence and mortality fell by 19% and 6% respectively. Despite these rather encouraging results, tuberculosis still persists as a complex multi-sectoral phenomenon that is slowing down our nation's progress towards achieving sustainable development goals. The association of pleural tuberculosis with other parasitoses has been published, hydatidosis being the least frequent [2]. In fact, the coexistence of a pulmonary hydatid cyst and tuberculosis is rare, and only a few cases have been reported in the literature [1-6], even more rarely in the same pleural lesion as in our patient. Alterations in the host's immune response to parasitosis are thought to favor such associations, by promoting the outbreak of tuberculosis [2]. Over time, hydatidosis modifies the immunological profile of tuberculosis patients, increasing the Th2 immune response and suppressing the Th1 response [7].

The symptomatology of both diseases is essentially the same, ranging from a mild cough with or without expectoration to chest pain, fever and sometimes hemoptysis. It may be impossible to differentiate one from the other on the basis of disease history and physical examination alone. Precise diagnosis and subsequent treatment would depend on radiological features as well as histopathology.

Hydatid cysts of the lung are often asymptomatic when healthy, and are often discovered radiologically. Once complicated, the clinical picture becomes more revealing, but the clinical signs are non-specific, apart from the possibility of hydatid vomiting [8,9]. As a result, thoracic imaging cannot differentiate between a complicated hydatid cyst and an atypical presentation of pulmonary tuberculosis [5], especially if they are located in the same lesion. Biologically, hydatid serology can be negative [1], and the phthisiological work-up can be non-contributory even with recent molecular biology methods, which are only available in major cities with university hospitals. All these factors make diagnosis difficult. Treatment of hydatid cysts is essentially surgical, with priority given to conservative techniques [10,11]. Medical treatment, based on an antiparasitic agent such as albendazole, the most widely used in our country, is prescribed at a dose of 10 to 12 mg/kg in 2 doses, in 30-day courses separated by 15 days. It is indicated in cases of surgical contraindication, or postoperatively in complicated or multivesicular hydatid cysts [8]. Treatment of pleural tuberculosis is essentially medical. Surgery, which was widely indicated before the era of antibacillaries, has seen its role reduced to indications concerning complications, sequelae or simply to provide a diagnosis [12].

Sporadic reports of the concomitant occurrence of these two diseases have been reported in the literature. Hijazi et al. presented a rare case of ruptured hydatid cyst with tuberculosis in a pregnant patient presenting with anaphylactic shock and acute respiratory failure . She was managed by resection of the cyst, followed by treatment with antituberculosis drugs and albendazole. Yucel et al. reported on a 21-year-old man with concomitant pulmonary tuberculosis and hydatid cyst. The coexistence of tuberculosis and a pulmonary hydatid cyst makes surgery more difficult and increases the risk of complicated operative sequelae due to increased systemic blood flow around the lesions, with the risk of intraoperative and postoperative bleeding [5].

4. Conclusion

Pleural tuberculosis and pulmonary hydatidosis are two infectious diseases that are endemic in many countries. The association of these two conditions is rare and often unrecognized, which can worsen the patient's condition, leading to therapeutic difficulties and complicated operative sequelae. This association should always be borne in mind in the presence of any atypical radiological presentation, and histological examination should be carried out, especially in a country with a high incidence of these two conditions.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no competing interests in this section.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study

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