



CASE REPORT

# Disseminated aspergillosis with thyroid and bone localization: A case report

Cheikhrouhou Fatma<sup>a</sup>, Makni Fattouma<sup>a</sup>, Sellami Hayet<sup>a</sup>,  
Sellami Amira<sup>a</sup>, Hadrach Ines<sup>a</sup>, Mahfoudh Abdelmajid<sup>b</sup>,  
Hachicha Mongia<sup>b</sup>, Chtourou Khalil<sup>c</sup>, Guermazi Fadhel<sup>c</sup>,  
Ayadi Ali<sup>a,\*</sup>

<sup>a</sup> Laboratory of Parasitology and Mycology, Habib Bourguiba UH, Sfax, Tunisia

<sup>b</sup> Pediatric Ward of Sfax Hedi Chaker UH, Sfax, Tunisia

<sup>c</sup> Nucleic Medicine Ward of Habib Bourguiba UH, Sfax, Tunisia

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## KEYWORDS

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**Summary** We describe an original case of disseminated aspergillosis (pulmonary, thyroid and vertebral) in a 13-year-old girl from Tunisia. The patient had presented a thyroid node and a knee mass. The scintigraphy confirmed the cold thyroid node and an increased bone uptake in the left knee, the 5th left coast, the femur and the hip. The histological and mycological examinations concluded to an aspergillosis with *Aspergillus flavus*. The outcome was rapidly fatal.

Few reports have been published on thyroid aspergillosis localization. This major mycosis occurs in children with septic family granulomatosis whose forecast remains dark.

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## 1. Introduction

Disseminated aspergillosis has a poor prognosis. Extra-pulmonary involvement is rare and occurs at an advanced stage and represents an ominous sign for immunocompromised patients. We describe an

original case of disseminated aspergillosis (pulmonary, thyroid and vertebral).

## 2. Case reports

A 13-year-old girl, from Sfax (south of Tunisia), was hospitalized for cervical tumefaction, pain in the left knee with deterioration of the general state.

She had recurrent pulmonary infections and bronchial dilatation at the age of 8 and 10 years. After 1

\* Corresponding author at: Fungal and Parasitic Molecular Biology Laboratory, School of Medicine, Sfax, Tunisia.  
Tel.: +216 74247130; fax: +216 74247130.

E-mail address: ali.ayadi@rns.tn (A. Ali).



Fig. 1 X-ray: a femur and tibia bone lysis.

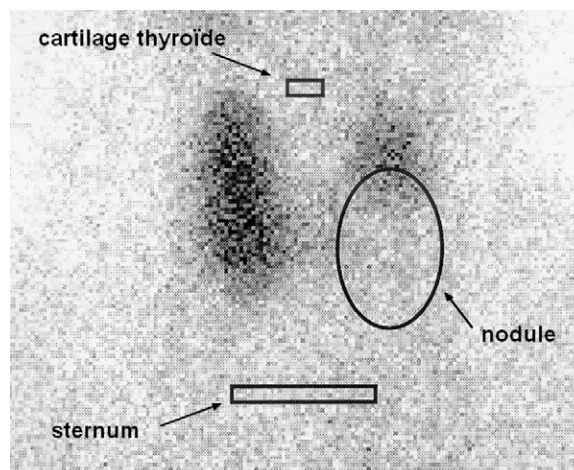


Fig. 2 Thyroid scintigraphy: abnormal uptake in the left lobe of thyroid.

year, the patient had presented a left thyroid node without hyperthyroidism.

The clinical examination showed a thyroid node and a left knee mass. The X-ray visualized a multiple bone lysis (Fig. 1) in the femur and the knee. The scintigraphy showed abnormal uptake in the left lobe of thyroid (Fig. 2), a decrease in perfusion in the right lower lobe of the lung (Fig. 3) and an increased bone uptake in the left knee, the 4th and 5th left coast, the femur and the hip (Fig. 4).

The neoplastic origin was evoked, and the patient had a thyroidectomy. Extensive necrosis

with infiltration of fungal hyphae was observed in the thyroid gland (Fig. 5). The histological and mycological examinations concluded to aspergillosis with *Aspergillus flavus*. The *Aspergillus* antigenemia was positive.

She was treated with Amphotericin B (30 mg/day) combined with Itraconazole (300 mg/day). She also developed a femur and tibia osteomyelitis (Figs. 1 and 6). Aggressive surgical debridement was done. Culture from intra-operative bone tissue grewed *A. flavus*. The magnetic resonance imaging showed extension of infiltrative process into the mediastinum, the lung and pleural cavity with vertebral body destruction (Fig. 7). The evolution was marked by cervical abscess and multiorgan deterioration. The outcome was rapidly fatal.

The immunizing assessment of deficit could not be carried out for neither the patient nor her

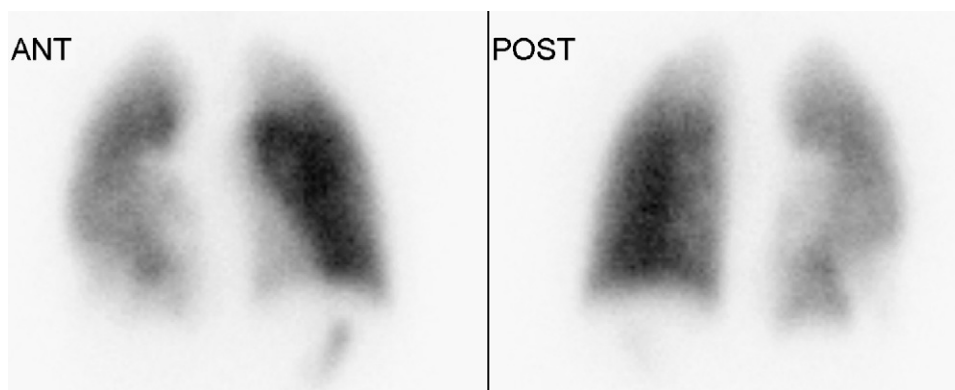
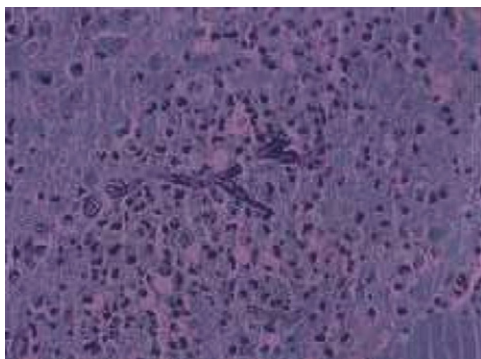


Fig. 3 A decrease in perfusion in the right lower lobe of the lung.



**Fig. 4** Bone scintigraphy: an increased bone uptake in the left knee, the 4th and 5th left coast, the femur and the hip.



**Fig. 5** Histologic examination: extensive necrosis with infiltration of fungal hyphae.

brother who died few years ago in septic shock with severe immunodeficiency.

### 3. Discussion

The incidence of *Aspergillus* infection has increased dramatically during the last decade [1]. However few reports have been published on extra-pulmonary aspergillosis and its clinical features have not been fully clarified [2]. The organ distribution was described by autopsy studies [1]. Osteomyelitis is the fourth most common site of infection for aspergillosis follow-



Fig. 6 MRI: femur and tibia osteomyelitis.

ing pulmonary, sinus and cerebral infections [3,4].

We have isolate *A. flavus* from thyroid and bone tissues. Frequency of thyroid localization varied

from 9% to 15% [2]. *Aspergillus* was the most common cause of fungal thyroiditis [5]. A majority of patients with thyroid aspergillosis remained asymptomatic as in our case. The thyroid node was suspected to be neoplastic. The diagnosis of thyroid fungi invasion is delayed in most cases and it is usually difficult to diagnose in the ante mortem period [1]. *Aspergillus* antigenemia is a key for early diagnosis and gallium scintigraphy might be useful to determine the site of fungal infection [6].

In the literature, invasive aspergillosis is usually caused by *A. fumigatus* and less commonly by *A. flavus* [5,7].

Thyroiditis was diagnosed at autopsy as part of disseminated infection in a substantial number of patients without clinical manifestations and laboratory evidence of thyroid dysfunction [5].

In our case, the immunizing assessment has not been carried. This type of major mycosis usually occurs in the children with septic family granulomatosis whose forecast remains always dark [8]. The extra pulmonary aspergillosis contributes to a high morbidity and a high mortality. Early recognition of these entities, prompt initiation of new, highly active antifungal therapies and adjunctive surgical management may improve the prognosis of these conditions [1].



Fig. 7 MRI: infiltrative process and vertebral body destruction.

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