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Multifocal Tuberculosis with Bilateral Adrenal Involvement: A Case Report

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SUMMARY

Tuberculosis can affect all endocrine glands including the hypothalamus, pituitary gland, thyroid and adrenal glands. The endocrine gland most affected by tuberculosis is the adrenal gland. The adrenal location of tuberculosis accounts for less than 2% of adrenal incidentalomas. It is the most common infectious cause of adrenal insufficiency. We report the case of a 31-year-old patient hospitalized for confirmed tuberculous spondylodiscitis. The CT scan showed a discal-vertebral damage of the dorsal- lumbar-sacral spine with epiduritis and multiple abscessed prevertebral collections and of the iliac psoas muscle, complicated by a posterior wall recession considered as a dorsolumbar and sacral pott's disease, considering the context, associated with the discovery of deep necrotic abdominal adenopathies with bilateral involvement of the adrenals involving the body and the internal arm of the left adrenal gland and the two arms of the right adrenal gland, which are the site of hypodense collections.

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Introduction

Tuberculosis can affect all endocrine glands including the hypothalamus, pituitary gland, thyroid and adrenal glands. The endocrine gland most affected by TB is the adrenal gland. The adrenal location of tuberculosis accounts for less than 2% of adrenal incidentalomas. It is the most frequent infectious cause of adrenal insufficiency. In the absence of a suggestive context where the diagnosis is easy, histological evidence is necessary.

Patient and observation

This is the case of a 31 year old patient, hospitalized for confirmed tuberculous spondylodiscitis, who presented on the CT scan of the cervical-dorsal-lumbar-sacral spine, layered and destructive discoid involvement of the dorsal-lumbosacral spine, with epiduritis and multiple abscessed prevertebral collections and of the iliac psoas muscles, complicated by a posterior wall recession at the D10 level, which, in view of the context, can be considered as a dorsolumbar and sacral pott's disease. This involvement is associated with multiple deep necrotic abdominal adenopathies with bilateral adrenal involvement involving the body and the medial arm of the left adrenal gland and both arms of the right adrenal gland which are the site of hypodense collections.

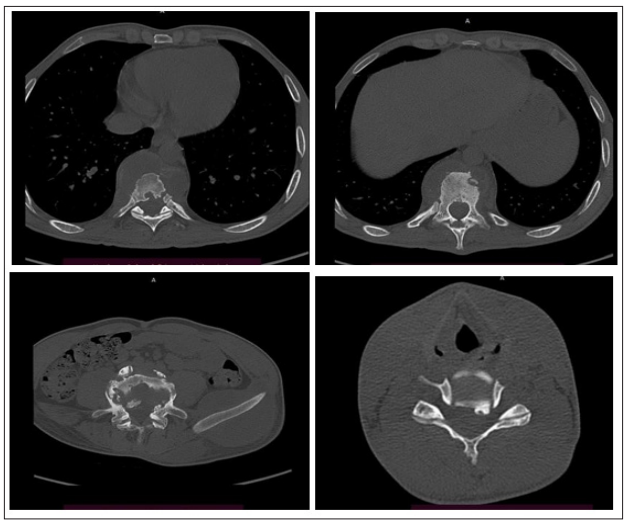

Figure 1: CT scan of the cervical-dorsal-lumbar-sacral spine in axial section, bone window

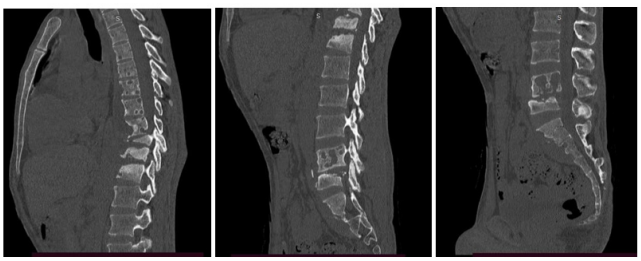

Figure 2: CT scan of the cervical-dorsal-lumbar-sacral spine in sagittal section, bone window

Figure 1 and 2: CT scan of the cervical-dorsal-lumbar-sacral spine in axial and sagittal section, bone window showing the destructive and layered dorsal-lumbosacral lytic macrogeodic and condensing vertebral damage with layered vertebral settlements and posterior wall recession responsible for a reduction in the anteroposterior diameter of the vertebral canal. Associated with a posterior marginal osteophytic spout in the canal and filling the epidural recess.

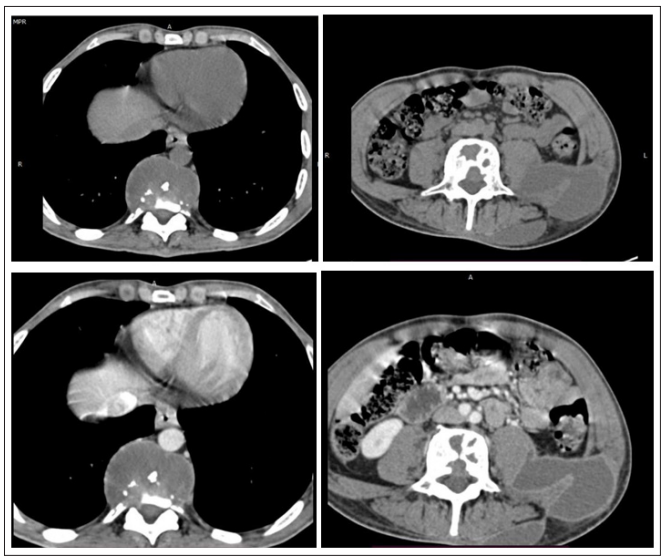

Figure 3: CT scan of the cervical-dorsal-lumbar-sacral spine without and with PDC injection in axial section, parenchymal window

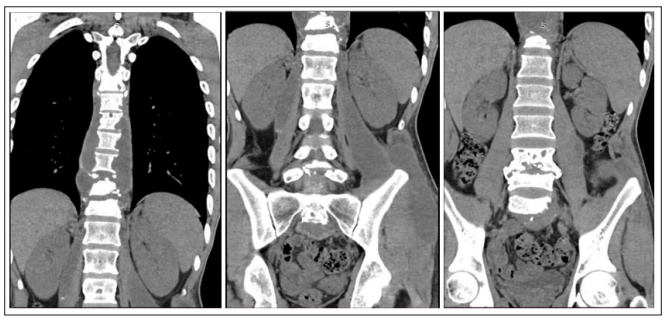

Figure 4: CT scan without injection of the cervical-dorsal-lumbar-sacral spine in coronal section, parenchymal window

Figure 3 and 4: CT scan of the cervical-dorsal-lumbar-sacral spine with injection of iodinated contrast in axial section in parenchymal window, showing voluminous spindle-shaped pre and latero vertebral collections, spontaneously hypodense, seat of bone sequestration and calcifications in places, with enhanced walls after injection of iodinated contrast. As well as in the two iliac psoas muscles: On the left, a hypodense collection, peripherally enhanced after injection of iodinated contrast, fistulated at the level of the left posterolateral wall and communicating with another collection of the quadratus lumborum and external oblique muscle extended down to the gluteal muscle. On the right, two well-limited, hypodense collections, enhanced in the periphery after injection of iodinated contrast.

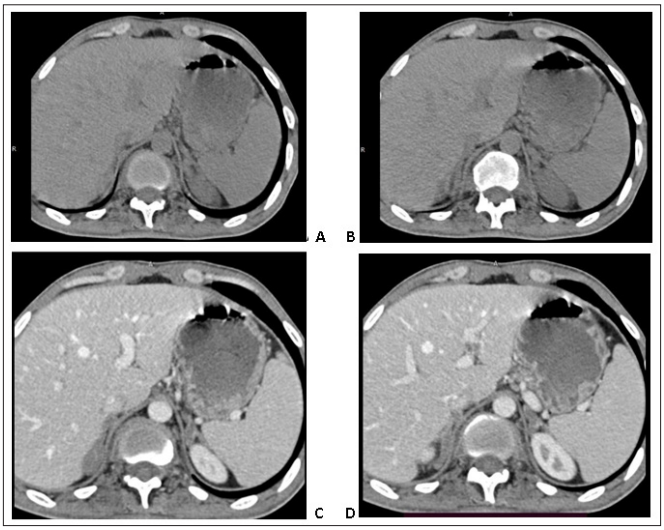

Figure 5: CT scan without and with injection of the cervical-dorsal-lumbar-sacral spine in axial section, abdominal level, in parenchymal window

Figure 5: CT scan with injection of iodinated contrast of the cervical-dorsal-lumbar-sacral spine in axial section, at the abdominal level, in parenchymal window showing at the abdominal level a bilateral involvement of the adrenals involving the body and the internal arm of the left adrenal gland and the two arms of the right adrenal gland which are the site of hypodense collections.

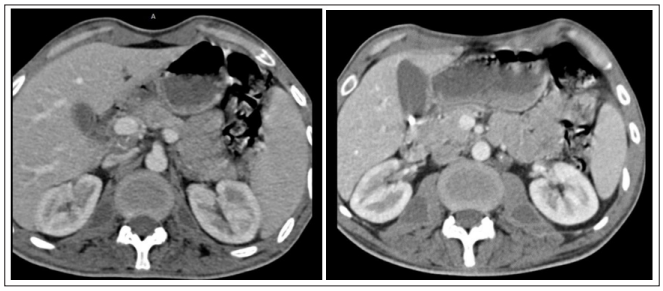

Figure 6: CT scan with injection of the cervical-dorsal-lumbar-sacral spine in axial section, abdominal level, in parenchymal window

Figure 6: CT scan with injection of iodinated contrast of the cervical-dorsal-lumbar-sacral spine in axial section, at the abdominal level, in the parenchymal window showing the presence of necrotic deep abdominal lomboaortic and hepatic pedicle adenopathies.

Discussion

First described by Addison in 1855, adrenal tuberculosis is a rare cause of adrenal masses (less than 2%) [1]. In an autopsy series in patients with active tuberculosis, adrenal location accounted for 6% [2]. In a series of 238 incidentalomas tuberculosis accounted for only 1.3%. Tuberculosis spreads by hematogenous route to the adrenal glands. It is most often secondary to untreated or inadequately treated genitourinary tuberculosis, or more rarely primary due to reactivation of the disease [3,4]. The clinical signs of isolated adrenal involvement are not specific (general signs, pain or feeling of heaviness...). The signs of adrenal insufficiency are delayed and appear only after at least 90% of the gland has been destroyed (chronic or inactive phase) [5]. Ultrasound shows a uni or bilateral adrenal mass. CT is more sensitive and allows a better characterization. The radiological appearance depends

on the stage of the disease. In the acute phase, CT shows adrenal hypertrophy, often bilateral. Injection of iodinated contrast may reveal an area of central necrosis (caseous necrosis). The disease in this phase is almost always asymptomatic (incidentaloma). In the chronic phase, atrophy and calcifications are frequent [6]. The radiological appearance of adrenal tuberculosis is not specific [7]. Several diagnoses (Table 1) can be discussed in case of adrenal incidentaloma [8]. It is imperative to rule out a pheochromocytoma before performing any invasive diagnostic procedure [3]. The diagnosis of certainty is based on an ultrasound or scannoguided biopsy with histological study, which shows an epitheliocellular granuloma with caseous necrosis specific to tuberculosis. Adrenal biopsy is not necessary in patients with extra-adrenal tuberculosis [9]. Probationary therapy is initiated in these cases. The work-up to look for other localizations is of particular interest in urogenital, pulmonary and bone forms: (search for Koch's bacilli in urine, sputum...) Hormone replacement therapy (glucocorticoids and mineralocorticoids) is administered in cases of adrenal insufficiency. Specific treatment is based on antibacillary drugs (rifampicin; isoniazid; pyrazinamide; ethambutol) according to an established regime. Follow-up is mainly based on clinical examination (weight gain, disappearance of clinical signs, etc.). Scannographic monitoring may be necessary, especially in the case of acute diagnosis, to assess the reduction of adrenal mass.

Table 1: Etiologies of adrenal incidentalomas

Secreting (≥ 15%)
Adenoma (aldosterone or cortisol)
Carcinoma
Pheochromocytoma
Nodular hyperplasia
Massive macro nodular hyperplasia
Non-secreting
Adenoma
Myelolipoma
Neuroblastoma
Ganglioneuroma
Hemangioma
Carcinoma
Metastasis
Cyst
Hemorrhage
Granuloma
Amyloidosis
Infiltrative pathology

Conclusion

Adrenal tuberculosis is a rare cause of incidentalomas. CT scan and ultrasound or CT-guided biopsy play an important role in the diagnosis and early management. Treatment is based on antibacillary drugs. Early treatment and good compliance improve the prognosis.

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