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Case Report

Mycobacterium terrae: case report

Mycobacterium terrae: reporte de caso

Palacios Vargas Doris Vanesa [a b] , vanessa135100@hotmail.com.
Moya Guerrero Iván Ricardo d. [c] , moguerr@hotmail.com.
Reimundo Díaz Diana [c] , carolinacdiana.reimundo.80@hotmail.com.
Avendaño Saquisilí Cristian Valentín.[d] , luke-vass@hotmail.com.
a. Specialist in Internal Medicine. General Teaching Hospital Ambato, Ambato, Ecuador.
b. Professor at the Technical University of Ambato, Ambato, Ecuador
c. Resident Physician in Internal Medicine, Hospital General Docente Ambato, Ambato, Ecuador.
d. Specialist in Pediatrics. University of Guayaquil, Guayaquil, Ecuador.

Correspondence: Special Doris Palacios Vargas Email: vanessa135100@hotmail.com

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Abstract

Mycobacteria can be divided into four groups: Mycobacterium tuberculosis complex, Mycobacterium leprae and Mycobacterium ulcerans, and non-tuberculous mycobacteria (NTM). Infection with Mycobacterium terrae can cause a debilitating illness that can become resistant to antibiotics. Mycobacterium terrae complex comprises three species of regularly saprophytic mycobacteria, exceptionally producing disease in humans. We present a case of M. terrae infection with disseminated infection in a patient without immunodepression in other risk factors. Its clinical management has brought difficulties due to the absence of defined therapeutic guidelines. It is suggested that the investigation in certain cases of a particularized treatment is suggested.

Keywords: Mycobacterium terrae, Mycobacterium, Mycobacterium infections.

Resumen

Las micobacterias se pueden dividir en cuatro grupos: complejo Mycobacterium tuberculosis, Mycobacterium leprae, Mycobacterium ulcerans y micobacterias no tuberculosas (MNT). La infección por Mycobacterium terrae puede ocasionar una enfermedad debilitante que puede tornarse resistente a antibióticos. Mycobacterium terrae complex comprende tres especies de micobacterias regularmente saprofitas, excepcionalmente producen enfermedad en humanos. Presentamos un caso de infección por M. terrae con infección diseminada en un paciente sin inmunodepresión ni otros factores de riesgo. Su manejo clínico ha planteado dificultades por la ausencia de pautas terapéuticas definidas. Por ello se sugiere la investigación en determinados casos de un tratamiento particularizado.

Palabras clave: Mycobacterium terrae, Mycobacterium, Infecciones por Mycobacterium.

Introduction

The family Mycobacteriaceae belongs to the other Actinomycetales. The genus Mycobacterium encompasses in the present time more than 180 officially recognized species [(1)]. The mycobacteria can be divided into four large groups: Mycobacterium tuberculosis, Mycobacterium leprae and Mycobacterium ulcerans, and MNT complex.(two). Non-tuberculous mycobacteria are mycobacteria unrelated to the Mycobacterium tuberculosis and Mycobacterium leprae complex.[(3)]

A common feature among Mycobacterium spp. Its presence of mycolic acids in your cellular wall, this content creates resistance to decolorization with acid alcohol during the dyeing of acid-resistant bacilli. [(4)]

Infection by tuberculous mycobacteria may present itself as a progressive nodular pulmonary infiltrate or a mild skin infection, which may progress to a multiorganic infection. The infection can also originate by direct inoculation. Usually, the management of these infections requires a prolonged stay of antimicrobial therapy.[(5)].

At a global level, several case reports have been reviewed to acquire a notable clinical experience for the management of the disease of M. terrae. In fact, the methods to identify the M. terrae complex have changed over the years since the first case report was reported. Generally speaking, several reports from this series did not include enough biochemical data to confirm the taxonomic status of the organisms in accordance with current standards. From now on, the identification of species using high-performance liquid chromatography (HPLC) analysis of mycolic acid patrons was carried out in very few cases. [(6)].

Case presentation

A 50-year-old male patient, born in Manabí and residing in Ambato, incomplete primary education, merchant, toxic habit of consuming marihuana during adolescence, reports a history of respiratory symptoms five years ago, characterized by coughs with purulent expectoration, in times of hemoptysis.

The patient attends the consultation with a history of exacerbated symptoms in the last five months. In addition, after the fall of 50 cm with impact in the lumbar region, it presents pain in the lower limbs of a continuous type, excruciating, of slight intensity that intensifies six days ago and is accompanied by muscle weakness. It highlights the difficulty for walking and daily activities and sphincter incontinence. Together, it presents progressive weight loss in the quantified four months ago, and dysphonia one year ago.

In physical exploration, no significant anomalies were detected (blood pressure: 130/80, heart rate: 72 barks per minute, respiratory rate: 20 breaths per minute, temperature: 36.4°C, oxygen saturation: 96 %. Patient is alert, oriented, afebrile, rests in semi-fowler, ectomorphic biotype, foriel wet and elastic and fan in regular condition. En oropharynx structural changes are evidenced at the level of the glottis and supraglottis, whitening lesions at the level of the epiglottis, in the glottic region important edema with anatomical changes at the level of the buccal muscles. En where are you? preserved movement, if palpable adenopathy 0.5 cm painful in anterior infrahyoidea left region. En chest shows symmetry, expansibility, and adequate thrill, rhythmic and normophonetic heart sounds, without apparent murmurs. En pulmonaryes are auscultated decreased vesicular murmur at lung bases. In the abdomen, hydro-aerial noises are evident and the palpation is soft, depressible in painful

Regarding the neurological examination, the patient in the mental examination is vigil, oriented in space and person time, with memory language and preserved cognitive functions, Glasgow 15/15, no meningeal signs are observed. In the examination of cranial pairs, no alterations are sub-radiated. It emphasizes

the abolition of cutaneous-abdominal reflections. In the motor examination is observed symmetric upper ends with tone, adequate trophism, strength 5/5 and preserved sensitivity. Decreased tone, 1/5 muscle strength, hypoesthesia, 3/4 osteotendinous reflexes, Babinski's sign, presence of bilateral fasciculations is observed in the lower extremities.

With respect to the analytical determinations of laboratory reports in hematic biometry: leukocytes 6920, Hb 14.7, Hcto 43.7%, platelets 356000, neutrophils 76.3%, lymphocytes 16.4%. PCR 0.88. The biochemical profile reports glucose: 103.4, urea: 16.3, creatinine: 0.95, CKD-EPI: 110,814 ml/min/1.73m2, TGO: 32, TGP: 18, Uric acid: 6, electrolytes (Na: 140, K: 2.89 Cl: 99). Serological examination of non-reactive human immunodeficiency virus (HIV), non-reactive VDRL, sputum smear: negative, urine smear: positive.

It was evidenced in the CSF examination, al physical examination: rock water, appearance: transparent. In cell count: leukocytes: 950 cells/mm3, pyocytes 0-1/c hematite's 0-1/c PMN 1.8%, lymphocytes: 98.2%, scarce bacteria. In chemical exam: glucose 23mg/dl, total proteins: 653mg/dl, LDH: 21 u/l, in Gram stain: no bacteria are observed, in culture: in bacterial development up to 48 hours, Ziehl Neelsen stain: negative, Lowenstein culture: strain n 122 positive 1 colony. In the report of the National Institute of Investigation in Public Health - INSPI - the presence of Mycobacterium terrae is detailed. In the laryngeal biopsy, a nonspecific chronic inflammation stands out.

In the magnetic resonance of the lumbar column it was evident Vertebral bodies aligned with normal shape and size, preserved dorsal kyphosis, vertebral discs not present. The spinal cord is thickened and has an abnormally high signal intensity at T2, which affects the central position of the spinal cord, which includes the dorsal segment D4 up to D9. The findings are in relationship with myelopathy.

In this case, an anti-tuberculosis treatment was implemented, according to the National Program for the Control of Tuberculosis in Ecuador, although new samples of cultivation in CSF were taken to modify the treatment for Mycobacterium terrae.

Discussion

According to data published by the Pan American Health Organization, it is estimated that in 2019 they will be sick with tuberculosis in the world: 5.6 million men, 3.2 million women and 1.2 million children. In fact, tuberculosis is present in all countries and age groups. In the news there is a disease that requires a specific treatment and that can be prevented.[7]

Ecuador is considered as one of the ten countries in America with the highest prevalence of tuberculosis and as the fourth with respect to multidrug-resistant tuberculosis [8]. However, it highlights a significant number of cases related to infections by atypical mycobacteria [9]. It should be noted that MNT isolations have been recovered from the south, water, animals and even food products[3].

In general terms, the Mycobacterium terrae (MTC) complex is a group of environmental mycobacteria most commonly implicated as causal agents in bone and joint infections arising from direct environmental inoculation lesions. It is emphasized that in the first isolations there were found slow growing species: M. terrae and M. non-chromogenicum. It currently includes other genetically similar mycobacteria: M. kumamotonense, M. senuense, M. paraterrae, Mycobacterium type JDM601, M. engbaekii, M. Longobardum, M. heraklionense, M. virginianus, and M. virginianus [10].

Infection by disseminated MNT is considered exceptional, but it can be observed in immunodepressed individuals, congenital or acquired immunity defects, individuals with malignant disease, recipients of solid organ transplants and patients undergoing long-term treatment with steroids, cytotoxics or TNF inhibitors[3].

In literature reports, tenosynovitis of the upper extremity, often after trauma, was the presentation informed with higher frequency (59% of cases), and pulmonary disease was present in an additional 26% of cases [11].

It is required to identify antibiotics that are more effective in the treatment of M. terrae infections. Therefore, until new medications are identified, it is necessary to consider each case individually, summing up the value of combined medical and surgical therapy for individuals with localized illness. The use of aminoglycoside beads is interesting, limited to reduced tissue spaces, in infections of bone and joint tissue to achieve high concentrations of local drugs and to reduce systemic toxicity[11].

Infection by M. terrae is considered a relatively uncommon problem that can be confused with an inflammatory joint process in the infectious. The

formal exclusion of a mycobacterial infection or other chronic infectious etiologies can avoid the undesirable consequences of corticosteroid therapy in patients with M. terrae. In vitro antibiotic sensitivity measures for the isolation of microbacteria may be useful to refine the therapy, which may have to be continued for a prolonged period to increase the possibility of cure[11].

Conclusions

There was a rare case with a diagnosis of Mycobacterium terrae with disseminated infection in a patient without immunodepression in other risk factors in the General Hospital of Ambato, with the identification of the pathogen in crops. It should be noted that its clinical management has created difficulties due to the absence of defined therapeutic guidelines. Therefore, investigation is suggested in certain cases of individualized treatment.

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