

Chronic meningitis by Acremonium sp.

Delzi Vinha Nunes de Gôngora¹
 Márcia Maria Costa Nunes Soares²
 Paulo Rodrigo dos Santos David³
 Mara Correa Lelles Nogueira¹
 Margarete Teresa Gottardo de Almeida¹

Abstract

Acremonium sp are rarely described as opportunistic pathogens in humans. This case report presents chronic meningitis caused by *Acremonium sp*. Woman, 56 years old, with fever, headaches in the frontal region of the face, irradiating to the nape, over a four-month period. When the patient was admitted in Hospital de Base, showed edema of the left papilla and was directed to the neurologist, because of the clinical suspicions of bacterial meningitis. Four samples of cerebrospinal fluid (CSF) were collected during the hospital stay, but the presence of bacteria was not detected. However, due to the increase of cellularity of CSF, the antibiotic therapy was introduced. Considering the decline of the general state, in the 26th day, the sphenoidectomy was realized with functional endoscope sinus surgery apart from the collection of secretion. Its macroscopic aspect suggested fungal disease, when than was introduced amphotericin B as treatment. The culture of secretion revealed the presence of *Acremonium sp*. In the 28th day, was required new sample of the CSF, where was isolated *Acremonium sp*. At this time, the patient presented convulsions and died. This report highlights the importance of investigations for uncommon microorganisms in patients without risk factors, and the necessity of diagnosis for early adoption of specific treatment against such agents, in order to reduce morbidity and mortality.

Keywords: Meningitis – *Acremonium sp*.

INTRODUCTION

Species of Acremonium are environmentally widespread as saprophytes in soil and as pathogens of plants and insects, but rarely described as opportunistic pathogens in humans or other mammals. Manifestations of these infections include keratitis, mycetoma, and generalized infection of various organs, including the brain. In recent years, the number and the diversity of

infections caused by Acremonium species have increased and several species having been implicated (GUARRO et al., 1997). Acremonium species have been considered as the cause of localized or generalized infections in patients presenting predisposing conditions, such as Addison's disease, neutropenia, immune suppression and intravenous drug abuse (GUARRO et al., 1997; FINCHER et al., 1991; ANADOLU et al., 2001).

¹ Dermatologic, Infectious and Parasitology Diseases Department of the Medical School in São José do Rio Preto.

² Microbiology Laboratory of the Medical School in São José do Rio Preto.

³ Student of the Medical School in São José do Rio Preto.

Correspondência para / Correspondence to:

Margarete Teresa Gottardo Almeida.
 Avenida Brigadeiro Faria Lima, 5416.
 15090-000 São José do Rio Preto-SP-Brasil.
 Fone: (55) (17) 3201-5741; fax: (55) (17) 3201-5734.
 E-mail: margarete@famerp.br

We report a case of sinusitis caused by *Acremonium* sp that evolved to chronic meningitis in a 56-year-old patient. The rarity reports of cases involving this microorganism as the agent of chronic meningitis justifies the presentation of this case, observed at a hospital in the northwestern region of Sao Paulo State.

CASE REPORT

A 56-year-old woman, cooker, originally from Baús (State from Mato Grosso do Sul), Brazil, living recently in Cassilândia, was admitted to the Hospital de Base in São José do Rio Preto, in August 31th, 2006, complaining of a headache in the frontal region of the face, irradiating to the nose and accompanied by fever, loss of appetite and asthenia. The patient reported that these symptoms had been observed during four months before this first medical appointment in our service. The patient received previous treatment in several other healthcare services, initially for sinusitis and later for dengue with improvement just for the fever. Previously, she had a history of hypertension, trigeminal neuralgia with surgical procedure and amaurosis of the right eye eight, occurred years before. The signal detected during ophthalmologic evaluation was edema of the left papilla, than the patient was directed to neurologist because of the

clinical suspicions of bacterial meningitis. After the 5th day of hospitalization in the Infectious and Parasitic Diseases Ward, the patient presented stiffness of neck. Five samples of cerebrospinal fluid (CFS) were collected, and submitted to laboratory tests, including cytological, biochemical and the microbiological investigation (Table 1). The Microbiological analysis (Gram Stain, Culture in Blood Agar and Mac Conkey Agar) did not detect the presence of bacteria. We emphasize that there is no standardized protocols to mycological analysis of CFS, except when requested by the doctor.

Considering the increase of cellularity, two courses of antibiotic therapy were provided: Ceftriaxone, + Ampicillin + RIP (Rifampicin, Isoniazida and Pirazinamid) and Vancomycin and Cefepime. On the 19th day, treatment with Metronidazol was prescribed. During hospital stay several symptoms decline in the general state, loss of appetite, nauseous, adynamia and weakness of the legs were reported. After 26 days, left sphenoidectomy with functional endoscope sinus surgery was performed and the secretion was collected. The macroscopic observation of this sample suggested fungal disease, and than, a mycological investigation was required. The direct mycological analyze was negative, but after culture in Agar Sabouraud Dextrose (DIFCO) and Agar Batata (DIFCO), the growth of *Acremonium* sp, after 15th day of incubation at 25° C, was observed.

Table 1. Results of laboratorial analysis of CFS.

Cerebrospinal Fluid (CFS)	Date				
	08/31/06	09/08/06	09/18/06	09/25/06	09/28/06
Turbidity	positive	positive	positive	positive	positive
Leukocytes	1400	1520	5493	4400	7360
Erythrocytes	11	03	107	720	120
Neutrophils%	78	63	96	81	83
Lymphocyte%	17	29	03	14	10
Monocyte%	05	05	01	05	05
Protein mg%	210	304	378	327	254
Glucose mg%	09	32	09	37	58
Pandy	positive	positive	positive	positive	positive
China Ink	negative	negative	negative	negative	negative
Bacteria culture	ND*	negative	negative	negative	negative
Fungi culture	ND*	ND*	ND*	ND*	<i>Acremonium</i> sp

Note: *ND= no donea

On the 27th day the patient presented confusion and hallucinations. Meropenem and amphotericin B were added to the treatment regimen. A sample of CFS was collected on the 28th day, and submitted to mycological analyses, that revealed after the culture the presence of *Acremonium* sp. At this moment, the patient presented convulsion and respiratory arrest and died.

DISCUSSION

The genus *Acremonium* includes about 100 species, most of which are environmental contaminant and saprophytes of the soil and plants. Besides, they are not frequently reported as pathogens in humans. The main clinical aspect of the chronic infection of soft tissues, the mycetoma, in particular of wounds, is specially reported in patients living in the tropical and subtropical regions. However, other infections, such as pneumonia, osteomyelitis, sinusitis, arthritis and peritonitis (FINCHER et al., 1991;

SCHELL; PERFECT, 1996) have been reported. These infections are common in patients presenting predisposing factors, such as the use of corticosteroids, chemotherapy, insufficient nutrition, malignant tumors, and the use of central venous catheters (CORNEJO-JUÁREZ et al., 2007; NEDRET KOÇ; MUTLU SARIGÜZEL; ARTIS, 2009).

This case reported herein illustrates the rare presence of an opportunistic fungal as the etiologic agent of a sinusitis evolved to meningitis in immunocompetent patient. Cassilândia city has as main economical activity the soybean culture, making this geographic area a potential source for *Acremonium*.

This report also calls attention to the symptoms of the infection caused by this opportunistic pathogen. In this case, the patient was diagnosed as harbouring a bacterial infection and did not receive the proper treatment. We consider that the early diagnostic of these fungal infections are imperative to establish the right therapy and to improve the prognosis.

Meningite crônica por *Acremonium* sp.

Resumo

Acremonium sp raramente são descritos como patógenos oportunistas em seres humanos. Este relato de caso apresenta meningite crônica causada por *Acremonium* sp. Em uma mulher de 56 anos, com febre, dores de cabeça na região frontal do rosto, com irradiação para a nuca, durante um período de quatro meses. Quando a paciente foi internada no Hospital de Base, mostrou edema da papila esquerda e foi encaminhada ao neurologista, tendo em vista a suspeita clínica de meningite bacteriana. Quatro amostras de líquido cefalorraquidiano (CFS) foram coletadas durante a internação, mas a presença da bactéria não foi detectada. No entanto, devido ao aumento da celularidade no CFS, a antibioticoterapia foi introduzida. Considerando a queda do estado geral, no 26º dia, a esfenoidectomia foi realizada com a cirurgia endoscópica sinusal funcional, além da coleta de secreção. O aspecto macroscópico da amostra sugeriu doença fúngica, quando então a anfotericina B entrou como tratamento. A cultura da secreção revelou a presença de *Acremonium* sp. No dia 28, foi necessária uma nova amostra do CFS, onde foi isolada *Acremonium* sp. Neste momento, o paciente apresentou convulsões e morreu. Este relatório destaca a importância dos inquéritos para microorganismos incomuns em pacientes sem fatores de risco, bem como a necessidade do diagnóstico precoce para a adoção de tratamento específico contra esses agentes, a fim de reduzir a morbidade e mortalidade.

Palavras-chave: Meningite – *Acremonium* sp.

REFERENCES

- ANADOLU, R. et al. Indolent *Acremonium strictum* infection in an immunocompetent patient. *Int. J. Dermatol.*, Lewiston, v.40, p.451-453, 2001.
- CORNEJO-JUÁREZ, P. et al. Fungemia asintomática causada por *Acremonium* sp. asociada a colonización de catéter venoso central (CVC). *Gac. Méd. Mex.*, México, DF, v.143, n.3, p.193-196, 2007.
- FINCHER, R.M. et al. Infection due to the fungus *Acremonium* (*Cephalosporium*). *Medicine*, Hagerstown, v.70, p.398-409, 1991.
- GUARRO, J. et al. *Acremonium* species: new emerging fungal opportunists- in vitro antifungal susceptibilities and review. *Clin. Infect. Dis.*, Chicago, v.25, p.1222-1229, 1997.
- NEDRET KOÇ, C.A.; MUTLU SARIGÜZEL, F.; ARTIS, T. Isolation of *Acremonium strictum* from pleural fluid of a patient with colon adenocarcinoma. *Mycoses*, Berlin, v.52, n.2, p.190-192, 2009.
- SHELL, W.A.; PERFECT, J.R. Fatal disseminated *Acremonium strictum* infection in a neutropenic host. *J. Clin. Microbiol.*, Washington, DC, v.34, p.1333-1336, 1996.

Recebido em / Received: 13/10/2009

Aceito em / Accepted: 29/12/2009