

ACID FAST FILAMENTS IN STOOL SAMPLES FROM AN AIDS PATIENT

JAVIER BAVA¹, MARIA FRANCHI², ENRIQUE BELLEGARDE¹, RICARDO NEGRONI³¹ Sección Parasitología, ² Sala 16 y ³ Unidad Micología, Hospital de Infecciosas Francisco J. Muñiz, Buenos Aires

Abstract The presence of filamentous bacteria morphologically similar to *Nocardia* in a fresh stool sample from an AIDS patient with pulmonary nocardiosis is here reported. The material was submitted to our laboratory for a parasitologic examination and was stained by the Kinyoun method, revealing numerous delicate, irregularly stained, branching acid-fast filaments. *Nocardia asteroides* had been isolated from sputum samples of this patient. The patient was a 32 year-old HIV⁺ female admitted to our center on June 1997 because of productive cough, right-sided thoracic pain and weight loss. Chest X rays showed the presence of right superior lobe excavated pneumonia. This was the first time we had observed filamentous bacteria similar to *Nocardia* in a stool sample submitted to parasitologic examination. For similar cases, and when its presence was not detected in other specimens collected from the same patient, intestinal endoscopy and biopsy should be performed for eventual lesions and smear examination repeated with Kinyoun stain and cultures for *Nocardia*.

Resumen *Filamentos ácido resistentes en heces de una paciente con SIDA.* Comunicamos la presencia de bacterias filamentosas compatibles con *Nocardia* en muestras de materia fecal de una paciente con SIDA y nocardiosis pulmonar, obtenidas en fresco y enviadas a nuestro laboratorio para su estudio parasitológico. La tinción con la técnica de Kinyoun reveló filamentos finos irregularmente ácido resistentes similares morfológicamente al género *Nocardia*. La paciente era una mujer de 32 años, HIV⁺, internada en nuestro Hospital en Junio de 1997 por presentar tos productiva, pérdida de peso, dolor torácico con una radiografía de tórax que mostró una imagen cavitaria en el lóbulo superior derecho. Los cultivos de esputo desarrollaron *Nocardia asteroides*. Es esta la primera vez que observamos bacterias filamentosas similares a *Nocardia* en heces enviadas para un estudio parasitológico. En situaciones similares deberán realizarse endoscopia y biopsias de las eventuales lesiones intestinales así como cultivos para confirmar el hallazgo, si el diagnóstico no se realizó por otros medios.

Key words: *Nocardia asteroides* in AIDS

Nocardia asteroides is an acid-fast aerobic *Actinomycetales* that affects the lungs and can disseminate through the bloodstream with preferential involvement of the central nervous system¹.

The Kinyoun stain, employed as the standard method to visualize *Nocardia* microscopically, became a popular method in the 1980's for the diagnosis of intestinal infections caused by *coccidia* (*Cryptosporidium*, *Cyclospora* and *Isospora*). Our laboratory routinely employs this stain on all stool samples obtained from AIDS patients².

The aim of this communication is to report the finding of filamentous acid fast bacteria similar to *Nocardia* in fresh stool samples of an AIDS patient with pulmonary nocardiosis due to *N. asteroides*.

The patient was a 32 year-old female, diagnosed as HIV⁺ 6 years before the study, probably infected by he-

terosexual contact (husband HIV⁺). The admission occurred in June 1997 due to productive cough, right-sided thoracic pain and weight loss. Chest X rays showed the presence of right superior lobe excavated pneumonia (Figure 1). The CD4⁺ lymphocyte count at this moment was 11 cells/ μ L with a viral load of 13 250 copies/ml. She had been previously hospitalized due to community acquired pneumonia (April 1996) and disseminated *Mycobacterium avium-intracellulare* infection (December 1996).

In July 1997, during an episode of diarrhea, a Kinyoun stained, fresh stool smear, negative for *coccidia*, revealed numerous delicate, irregularly stained, branching acid-fast filaments, morphologically similar to *Nocardia* (Figure 2). The diagnosis of nocardiosis (isolation and typing of *Nocardia asteroides*) was achieved later, at the Unit of Mycology by cultures from sputum samples.

The patient initially was administered cotrimoxazole and amikacin, continuing with sulfadiazine alone. She responded clinically and radiologically well and was released from the Hospital after 30 days of treatment.

Received: 25-IX-98

Accepted: 28-X-98

Dirección postal: Dr. Javier Bava, Darregueyra 2470, 1425 Buenos Aires, Argentina.
E-mail: javibava@fmed.uba.ar

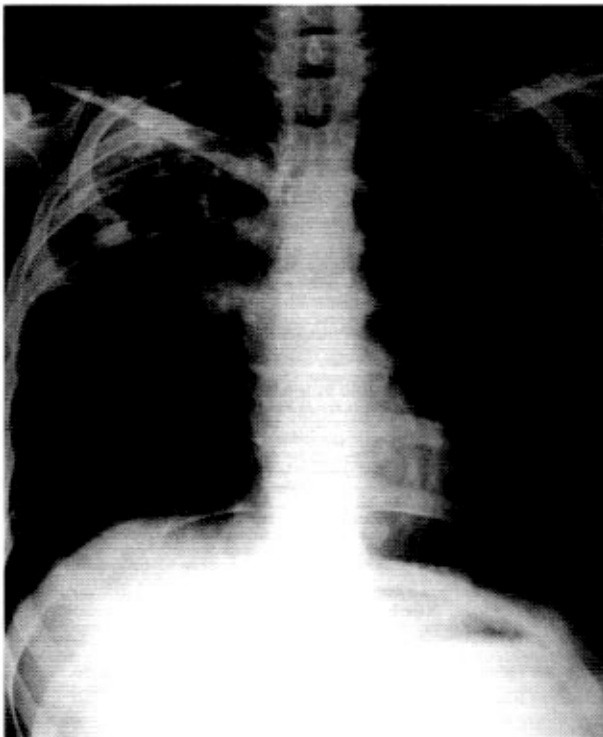


Fig. 1.- Chest X rays with right superior lobe excavated pneumonia

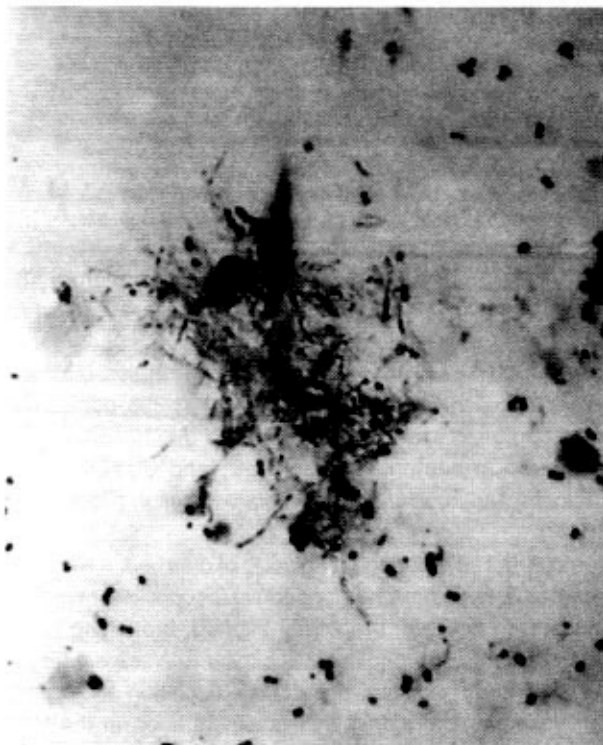


Fig. 2.- Delicate, irregularly stained acid-fast filamentous in fecal smear stained with Kinyoun method

A new stool sample obtained on day 15 of treatment and stained with the Kinyoun technique again revealed acid fast filaments, compatible with *Nocardia*. A parasitological analysis repeated prior to the patient's release was microscopically negative for *Nocardia*.

The use of Kinyoun stain on fresh-collected stool samples obtained from AIDS patients for parasitologic study has allowed us the occasional observation of acid-fast bacteria (*Mycobacterium* species). In our laboratory this was the first time we had observed *Nocardia* in stool; the prospective microscopic examination of stool samples from two other AIDS patients with pulmonary nocardiosis was also negative.

Several factors can probably influence the finding of *Nocardia*, as well as that of other bacilli with morphologic aspect of *Mycobacterium*: swallowing *Nocardia*-containing expectorations, specially by female patients, who usually expectorate less than males, and the marked hypochloridia present in AIDS patients, which facilitates the passage of pathogens through the gastric filter.

No endoscopic studies for investigation of probable intestinal lesions were carried out. Cultures of fecal samples to isolate *Nocardia* were not attempted, mainly because the diagnosis was reached in sputum and also due to the difficulty in isolating this pathogen from stool.

The presence of *Nocardia* in stool samples at the onset of diarrhea and again after 15 days of treatment is noteworthy, despite the clinical amelioration of the patient.

The pathogenic significance of the observation of *Nocardia* as well as other acid-fast bacteria (*Mycobacterium* species) in stool samples from AIDS patients, remains uncertain. Nevertheless, its presence in parasitological studies must be informed to the physicians.

Some authors believe that stool or gastrointestinal biopsy specimens from AIDS patients with diarrhea and *Mycobacterium* infection should be routinely examined with cultures and stains. They are of the opinion that repeated demonstration of acid-fast bacilli in fecal samples might suggest mycobacterial infection^{3, 4}. We believe that these criteria might be applied to AIDS patients with nocardiosis and diarrhea, when *Nocardia* is not observed nor isolated from other specimens.

Due to the lack of published references on the presence of *Nocardia* in stool samples of AIDS patients with diarrhea, at least in a medline search, the role of *Nocardia* in fecal samples deserves further investigation.

Acknowledgement: We are indebted to Dr. Kathy Miller Corbera, for helpful discussion and review of the manuscript.

References

1. Lerner PL. *Nocardia* species. In: Mandell, Douglas, Bennett. Principles and Practice of Infectious Diseases. Fourth Ed. New York: Churchill Livingstone, 1995, p 1423-7.
2. Hendrickson DA, Krenz HM. Reagents and strains. In: Ballows A; Huslet WJ, Hermann KL, Isemberg HD, Shadomy HJ. Manual of Clinical Microbiology. 5th ed. Washington: American Society for Microbiology, 1991. p. 1289-314.
3. Kiehn TE, Edwards FF, Brannon P, Tsang AY, Maio M, Gold JW, et al. Infections caused by *Mycobacterium avium* complex in immunocompromised patients: diagnosis by blood culture and fecal examination, antimicrobial susceptibility tests and morphological and seroagglutination characteristics. *J Clin Microbiol* 1985; 21: 168-73.
4. Wolke A, Meyers S, Adelsberg BR, Bottone EJ, Damsker B, Schwartz IS, et al. *Mycobacterium avium-intracellulare*-associated colitis in a patient with the Acquired Immunodeficiency Syndrome. *J Clin Gastroenterol* 1984; 6: 225-9.

En fait, les scientifiques s'attaquent à ce qui leur semble le plus important parmi les problèmes qui leur paraissent accessibles; c'est-à-dire ceux qu'ils ont, à tort ou à raison, l'impression de pouvoir résoudre. Car leur métier, ce n'est pas uniquement de se débattre au milieu des questions. C'est aussi de leur trouver des solutions. Comme dans beaucoup d'activités humaines, comme dans la vie en général, le scientifique navigue entre deux pôles: le désirable et le possible. Sans possible, le désirable n'est qu'un rêve. Sans désirable, le possible n'est qu'ennui. Il est souvent difficile de résister au rêve et à l'utopie. Mais l'expérimentation permet de contenir l'imagination. A chaque étape, le scientifique est obligé de s'exposer à la critique et à l'expérience pour limiter la part du rêve dans la représentation du monde qu'il élabore. La démarche scientifique consiste à confronter sans cesse ce qui pourrait être et ce qui est.

Los científicos acometen aquellos problemas que consideran más interesantes de entre los que les parecen accesibles; es decir, aquellos que creen, con razón o sin ella, que pueden resolver. Porque su oficio no es sólo debatirse en medio de preguntas. Es también hallarles solución. Como en muchas otras actividades humanas, como en la vida en general, la ciencia navega entre dos polos: lo deseable y lo posible. Sin lo posible, lo deseable no es más que un sueño. Sin lo deseable, lo posible no es sino fastidio. Pero la experimentación permite poner límites a la imaginación. En cada etapa, el científico está obligado a exponerse a la crítica y a la experiencia para limitar la parte que hay de sueño en la representación del mundo que construye. La ciencia avanza confrontando incesantemente lo que podría ser con aquello que es.

François Jacob

La souris, la mouche et l'homme. Paris: Editions Odile Jacob, 1997, p 12
(trad. *El ratón, la mosca y el hombre.* Barcelona: Crítica, 1998, p 11)