

# ZOONOTIC SPOROTRICHOSIS IN ARGENTINA: MOLECULAR CHARACTERIZATION OF SPOROTHRIX ISOLATES FROM HUMANS AND CATS INVOLVED IN THREE CASES OF FELINE SPOROTRICHOSIS IN THE PROVINCE OF BUENOS AIRES

Etchecopaz Alejandro<sup>1</sup>, Scarpa Miguel<sup>2</sup>, Mas Javier<sup>3</sup>, Brito Devoto Tomás<sup>4</sup>, Toscanini María Agustina<sup>4</sup>, Iovannitti Cristina<sup>4</sup>, Cuestas María Luján<sup>4</sup>

<sup>1</sup> Universidad de Buenos Aires. Facultad de Ciencias Veterinarias. Cátedra de Enfermedades Infecciosas. <sup>2</sup> Universidad de Buenos Aires. Facultad de Ciencias Veterinarias. Servicio de dermatología del Hospital Escuela de Pequeños Animales. <sup>3</sup> Universidad de Buenos Aires. Facultad de Ciencias Veterinarias. Cátedra de Microbiología. Laboratorio Diagnóstico. <sup>4</sup> Universidad de Buenos Aires-CONICET. Centro de Micología, Instituto de Investigaciones en Microbiología y Parasitología Médica. [aetchecopaz@fvet.uba.ar](mailto:aetchecopaz@fvet.uba.ar)

Sporotrichosis is considered a neglected disease of humans and animals in many regions of the world and is the most frequent implantation mycosis in Latin America. In the last few years the number of reported cases of zoonotic infections from feline-related sporotrichosis has undergone a geographical expansion in many areas of Brazil, a neighboring country of Argentina, where the number of feline sporotrichosis has reached alarming proportions and where sporotrichosis is now considered an emergent zoonotic fungal disease. This study aimed to contribute to illustrate the zoonotic importance of this emerging disease, describing three cases that occurred during November 2018 and May 2019 in three rural areas of the northern part of the province of Buenos Aires, Argentina.



Case 1

In November 2018, two cases of human sporotrichosis were diagnosed in Partido 3 de Febrero. They include a veterinarian (female, 30 years old) who was scratched by a sick cat (a 2-year-old female mongrel neutered free-roaming domestic cat) and the infant owner of it (female, 3 years old) who had contact with it. The veterinarian developed the lymphocutaneous form and the young girl the fixed form.



Case 2

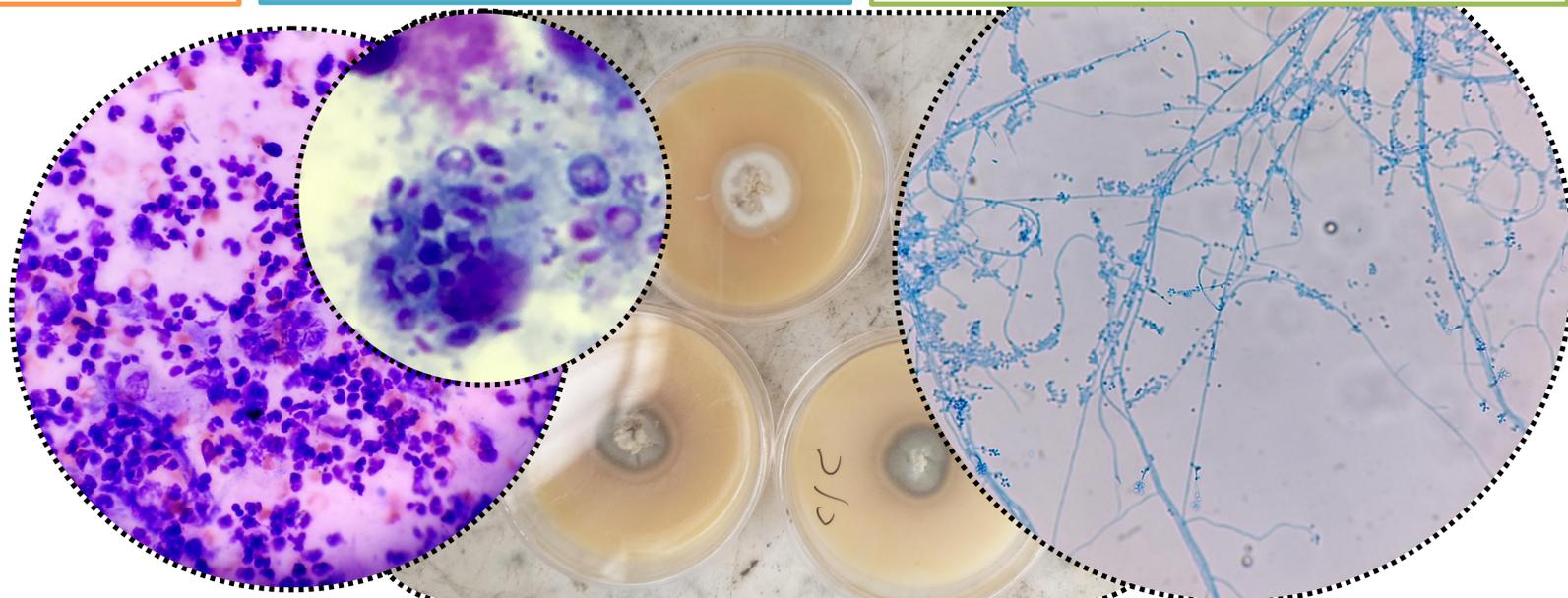
In February 2019, feline sporotrichosis was diagnosed in a 4-year-old male mongrel neutered free-roaming cat from Partido 3 de Febrero, that presented multifocal cutaneous crusted and ulcerated lesions that suggested a deep pyoderma or a deep mycotic infection.



Case 3

In May 2019, a novel case of human sporotrichosis was diagnosed in Partido de Tigre to a veterinarian (female, 37 years old) who was scratched by the sick cat (a 2-year-old male mongrel intact free-roaming domestic cat) and that developed the fixed form of the disease.

Samples of cutaneous exudates were collected through sterile swabs from the ulcerative lesions of all human patients and cats. Nail tip fragments from both thoracic members were also obtained from one cat. Direct examination of tissue samples from the three patients and feline lesions revealed the presence of *Sporothrix* yeast-like organisms. Fungal cultures and molecular identification of the strains were performed.



**Results:** In all cases, fungal isolates were identified as *Sporothrix schenckii* at the time of diagnosis. It was possible to characterize the species by reconstructing their phylogenetic origin using the ITS region of rDNA, the  $\beta$ -tubulin and calmodulin loci, which resulted in ***Sporothrix brasiliensis*** in all cases.

Argentina is an immense country, and many geographical areas have favorable conditions for *Sporothrix* growth, hence, the prevalence of cases must be much higher than is estimated according to the literature. However, the fact that sporotrichosis is not a reportable disease makes very difficult to determine the real scale of zoonotic sporotrichosis. Bearing in mind the epidemic magnitude of this mycosis in Brazil, a neighboring country of Argentina, is mandatory to control this fungal disease through basic educational, sanitarian and political measures. Consciousness of zoonotic and epizootic potential transmission of sporotrichosis should be promoted among veterinarians and animal-related-workers.