

Short Communication

Ocurrence of clinical and subclinical mastitis in dairy herd caused by *Trichosporon beigelii*

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Abstract

Trichosporon beigelii was isolated from four and three Holstein heifers with clinical and subclinical mastitis respectively, during the extension activities of Nucleus of Mastitis Research – NUPEMAS – FMVZ - UNESP – BOTUCATU – BRAZIL. This fungus is considered extremely important because it is responsible for superficial skin infections, known as “white piedra”. According with literature, there is no record of isolation of this agent from mastitis in Brazil. This fact confirms the importance of microbiological studies to lead the treatment correctly to prevent the increase of bacterial resistance and secondary fungal infections that uses the inefficient antimicrobial as substratum for its development.

Key-words:

Fungal mastitis.
Trichosporon beigelii.

Mastitis is a complex disease very important in milk production due economical and milk quality losses as well. It is a health public problem especially in developing countries where the consumption of raw milk and raw milk products is a reality.

Many researchers have reported the mastitis etiological complexity during the last decades, but only in 1988 Watts register 137 microorganisms associated with this disease. Acha and Szyfres¹, added zoonotic agents to this group like *Brucella* spp. and *Mycobacterium* spp. However, there are some microorganisms considered as in the top of the list due its isolation frequency and tissue damage capacity like *Staphylococcus aureus*², *Streptococcus agalactiae*, *Corynebacterium bovis*, and gram-negatives microorganisms like *Escherichia coli*, *Klebsiella* spp., *Pseudomonas* spp. and others^{3,4,5,6}. Beyond the microorganisms related above, fungal, yeasts and achlorophyllic algae has been reported in Brazil as mastitis agents. Langoni, Domingues and Dias⁷ and Costa et al.⁸ published, at the same time, the involvement of *Prototheca zopfii* in Brazil and since the half of last century it

was considered the possibility of the involvement of *Candida albicans* and *Geotrichum candidum* in the mastitic process^{9,10}.

During a technical visit at a milking farm located in Aguaí town in São Paulo State – Brazil, it was observed that several animals presented acute mastitis mainly observed in Holstein heifers. The owner reported that several antimicrobial drugs had been unsuccessfully used as treatment of the clinical cases and to prevent the new ones. Initially, the California Mastitis Test (CMT) was conducted, according to Schalm and Noorlander¹¹, to detect subclinical cases and to determinate which milk samples would be collected. After the teat disinfection with iodized-alcohol at 5%, milk samples from heifers and cows with clinical and subclinical mastitis with CMT results above one cross (+), were collected in sterile assay pipes. All samples was carried out under refrigeration to the Microbiology and Cytology Laboratory of the Nucleus of Mastitis Research, and then spread over petry dishes containing ovine blood agar at 8%, and MacConkey agar. Petry dishes were maintained at 37 degrees and observed at

24, 48, 72 and 96 hours of incubation. After 48 hours, it was observed, in four animals with clinical mastitis and three animals with subclinical mastitis, the presence of small grayish-white colonies that was transferred to Sabouraud's dextrose agar and maintained at 37 degrees. After 72 hours, the colonies expressed all its characteristics with yellowish cream colored and radial ridges. The microscopic morphology showed

pseudohyphae, arthroconidia and spherical blastoconidia positive at the Gram method. These microorganisms were classified in the Bioscience Institute at the Sao Paulo State University – UNESP – Botucatu – Sao Paulo State – Brazil, as *Trichosporon beigeli*, a very important fungus responsible for serious damages and maybe fatal intramammary infections¹².

Ocorrência de mastite clínica e subclínica causada por *Trichosporon beigeli* em um rebanho leiteiro

Resumo

Durante as atividades de extensão rural, desenvolvidas pelo Núcleo de Pesquisa em Mastites – NUPEMAS, do Departamento de Higiene Veterinária e Saúde Pública, da Faculdade de Medicina Veterinária e Zootecnia da Universidade Estadual Paulista – Botucatu - São Paulo - Brasil, no ano de 2002, foi isolado de uma propriedade leiteira do interior do estado, o fungo *Trichosporon beigeli*, em quatro animais com mastite clínica, e em três com mastite subclínica. Este fungo é de grande importância, pois é responsável pelo desenvolvimento de quadros de micose superficial, conhecidos como piedra branca. No Brasil, até o presente momento, não há relato de isolamento de *Trichosporon beigeli*, como agente causador de mastites. Este fato confirma a importância do exame microbiológico para o monitoramento das mastites, pois permite a identificação de patógenos tanto nas infecções intramamárias subclínicas como clínicas, evitando-se o tratamento com antimicrobianos, que nestes casos em particular, além de não exercer seu efeito terapêutico, pode predispor a infecções mistas por outros agentes fúngicos, na medida em que os antimicrobianos fornecem substrato para o desenvolvimento e manutenção destes.

Palavras chave:

Mastite fúngica
Trichosporon beigeli.

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