COMUNICACIÓN TECNICA Nº 430
AREA PRODUCCIÓN ANIMAL

PARY ASPERGILLOSIS IN A GREAT RHEA (RHEA AMERICANA)


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2002

CENTRO REGIONAL PATAGONIA NORTE
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Pulmonary Aspergillosis in a Great Rhea (Rhea americana)

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Received 3 December 2001

SUMMARY. A 5-mo-old great rhea (Rhea americana) gradually became emaciated over a 1-wk period and died. Necropsy revealed several small yellow nodules in the lungs. Microscopically, the nodules consisted of granulomas containing numerous thin, 4-μm-diameter, septate, branching fungal hyphae. Aspergillus fumigatus grew readily on Sabouraud dextrose agar. This report appears to be the first of mycotic pneumonia in great rheas.

RESUMEN. Reporte de Caso—Aspergilosis pulmonar en un ñandú (Rhea americana). Durante una semana, un ñandú (Rhea americana) de 5 meses de edad perdió una cantidad considerable de peso y murió. A la necropsia se observaron varios nódulos pequeños y amarillos en los pulmones. Microscópicamente los nódulos consistían de granulomas que contenían numerosas hifas delgadas, de 4 μm de diámetro, septadas y con ramificaciones. En el medio agar Sabouraud dextrosa, el Aspergillus fumigatus creció fácilmente. Este parece ser el primer reporte de una pneumonia micótica en ñandús.

Key words: Aspergillus fumigatus, pneumonia, great rhea

The six species of ratites are cassowary (Casuarius casuarius), emu (Dromaius novaehollandiae), kiwi (Apterix australis), ostrich (Struthio camelus), great rhea (Rhea americana), and lesser rhea (Pterocnemia pennata) (6). The great rhea and the lesser rhea are naturally distributed in South America. Recently, commercial farming of great rheas has begun in Argentina. This is an important economic advance in diversification of primary industry in that country. Information about diseases of wild or farmed rheas in the literature is scant.

Aspergillosis is the most common mycotic infection of the respiratory tract in pet and wild birds (3,5,7). Several Aspergillus infections have been described in the respiratory tract of ostriches (2,4,8). However, to the best of our knowledge, no mycotic infection has been reported in the respiratory tract of rheas. This paper describes the occurrence of pulmonary aspergillosis in a farmed great rhea.

CASE REPORT

Case history and clinical signs. A 5-mo-old great rhea weighing approximately 10 kg was kept in an outdoor pen (surface 200 m²) with 35 other juvenile great rheas. Several chickens were also present in the farm and they had free access to the rheas' pen. All the great rheas had been raised in the same farm from eggs incubated artificially. The birds were fed a mixture of alfalfa hay and a concentrate ration ad libitum, but during the month before the clinical signs were detected, the concentrate ration had been changed to a mixture of corn,
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soybean, and wheat. No antibiotic or antifungal treatment was supplied.

Lethargy, weight loss, and progressive weakness were the only clinical signs reported by the owner. The affected bird became recumbent a week after first showing clinical signs, and it died soon after that.

**Gross postmortem findings.** A necropsy was performed. The carcass was in poor condition, and several yellow nodules approximately 1 cm in diameter were scattered throughout the lungs and on the parietal pleura. No lesion was observed in the upper respiratory tract or in other organs.

**Histopathology.** Samples of lung were collected, fixed by 24-hr immersion in 10% buffered formalin, pH 7.2, embedded in paraffin wax, sectioned at 4 μm, and stained with hematoxylin and eosin, periodic acid–Schiff, and Grocott. Microscopic examination revealed multiple granulomas with eosinophilic necrotic centers surrounded by giant cells, macrophages, lymphocytes, and fibrous tissue. Among the inflammatory exudate were large numbers of 4-μm-diameter, parallel-walled, septate, regularly branching fungal hyphae. These hyphae were visible with hematoxylin and eosin as well as with the periodic acid–Schiff and Grocott stains.

**Culture.** Samples of lung were cultured on Sabouraud dextrose agar, with and without antifungal (cycloheximide 0.5 mg/ml), and incubated at 28 C. A pure culture of *Aspergillus* sp. was obtained on plates without antifungal after 5 days. This isolate was subcultured on Sabouraud dextrose agar plates without antifungal and incubated at 28 C and 37 C for 7 days. On the basis of its macroscopic and microscopic morphological features, the isolate was identified as *Aspergillus fumigatus* Fresenius.

**REFERENCES**


ACKNOWLEDGMENT

We thank S. J. Uzal for review of this manuscript.