

ajava

Asian Journal of Animal and Veterinary Advances



Academic
Journals Inc.

www.academicjournals.com

Suspected Cases of Rhinosporidiosis in Ducks and Geese in Babol, Iran

¹Gholampour Azizi, ²S.J. Hashemi and ³M. Hashemi

¹Department of Veterinary Science, Islamic Azad University, Babol Branch, Iran

²Department of Medical Mycology, Tehran University of Medical Sciences, Tehran, Iran

³Islamic Azad University, Tonekabon Branch, Iran

Abstract: Studies on the presence of Rhinosporidiosis in ducks and geese were conducted in villages around Babol in Northern of Iran between October 2004 and December 2005. A total number of 5800 birds were examined including 4700 native ducks, 800 Muscovy ducks and 300 geese. Physical examination of the nasal parts of the birds revealed polyp like lesions in 4(0.08%) native ducks and 4(0.5%) Muscovy ducks while none of the geese examined had such lesions. Histological examination and culturing of samples from suspected positive cases were however negative for *Rhinosporidium seeberi* species.

Key words: Rhinosporidiosis, polyp, duck, geese, Iran

INTRODUCTION

Rhinosporidiosis is a chronic granulomatous disease in human and animals. It appears with chronic granuloma lesions along with large tumoral polyps, papilloma or wart like hyperplastic lesions (Rippon, 1998; Arseculeratne, 2002). Lesions are seen in nose, eyes, larynx and genital tract and they may obstruct respiratory canal. The disease is associated with stagnant water and dust. In wet regions, working or swimming in stagnant water and in dry regions breathing dust can predispose to the infection (Rippon, 1998; Arseculeratne, 2002). The causative agent has been attributed to *Rhinosporidium seeberi*. This organism was considered a fungus but now it is categorized as aqua- protozoa and it is classified in Mesomycetozoea class and Dermocystida order (Chao and Loh, 2004). Microscopically, the organism produces spherule in an infected tissue (Sevtap, 2003). In the late 19th century, the disease was reported in Argentina, India and the United States. In 1892 a human infection in nose was reported in Buenos Aires and four years later, was reported a case in a 19-year-old farmer (Fadl *et al.*, 1995). In 1941 the disease was reported in urethra (Dhayagude, 1941). In India detected out of 510 patients, 233 eye lesions were reported by Moses *et al.* (1990). Fadl *et al.* (1995) reported 4 cases among India workers. The infection has also been documented as having occurred in several animals. Lengfelder and Pospichil (1980) and Leeming *et al.* (2007) have reported rhinosporidiosis in horse. The infection in Wood Dock was reported by Davidson and Nettles (1977). Fain and Herin (1957) observed 2 cases of nasal rhinosporidiosis in wild geese and ducks. The disease in cat was studied by Moisan (Moisan and Baker, 2001). Caniatti *et al.* (1998) observed nasal rhinosporidiosis in dogs. Disease was reported in cow and buffalo (Moses and Balachandran, 1987).

In the Ardebil and Tabriz (two Iran provinces) in during 9 month, of the doubtful cases effective rhinosporidiosis was not detected this disease (Salehpour and Rangdostfam, 1999). Hundred human

nasal polyp, was not detected *Rhinosporidium seeberi*. The disease has been reported in some countries in geese and ducks but in Iran, no study was found to be done on animals and birds, hence we began to study the infection on them in Babol located in Northern of Iran (Sabokbar, 1988).

MATERIALS AND METHODS

Babol, a sea side city is located in 52° longitudinally and 35° latitude in northern of Iran with the lowest temperature between -5 and 10°C in winter and the highest temperature between 15 and 34°C and a relative humidity from 70 to 95%. Babol were surrounded by 556 villages. Firstly, the places for keeping ducks and geese were in Babols villages identified. Randomly 95 villages were selected for the study and in these areas the nose of geese and ducks were inspected first and suspected lesions were taken in sterile condition by a vet surgeon. Generally this study was done on 4700 native ducks, 800 Muscovy ducks and 300°, totally 5800 cases, randomly from October 2004 to December 2005. Out of the total samples examined, 4(0.08%) native ducks and 4(0.5%) Muscovy ducks were suspected to have polyp lesions. No geese had such lesions. A portion of the lesions were directly examined using KOH by microscopy, then another portion of each were cultured in Sabourauds Dextrose agar medium at 25 and 37 centigrade. The remained pieces were put into chloroform and histological sections were stained with H and E and PAS techniques (Rippon, 1998; Arseculeratne, 2002).

RESULTS AND DISCUSSION

Out of the total samples examined, 4(0.08%) native ducks and 4(0.5%) Muscovy ducks were suspected to have polyp lesions. No geese had such lesions (Table 1). No spore and sporangium were observed (Fig. 1). The organism does not grow in the SDA media. No growth was observed in the cultured samples. Histopathological examination did not detect any organism utilizing H and E and PAS.

Table 1: Distribution of doubtful polyps and positive cases rhinosporidiosis in ducks and geese nose

Samples	No.	Doubtful samples	Positive cases
Native ducks	4700	4(0.08%)	0
Muscovy ducks	800	4(0.5%)	0
Geese	300	0	0
Sum	5800	8(0.14%)	0



Fig. 1: Histological sections prepared from ducks nose polyp lesions seem not to be sporangium lesions but micro-abscess

Rhinosporidiosis has been reported from about 70 countries with diverse geographical features in which highest incidence has been from India and Sri Lanka (Arseculeratne, 2002). In addition to the cases in humans, the infection has also been documented as having occurred in several animals such as ducks, swans, geese and water fowl (Rippon, 1998; Moisan and Baker, 2001).

In this study, rhinosporidiosis was not observed in native ducks, Muscovy ducks and geese, although previous study indicated rhinosporidiosis in these animals (Kennedy *et al.*, 1995; Fain and Herin, 1957). Rippon believes that the organism lives in water and migratory birds can carry it to distant places (Rippon, 1998). It has also to be explained why the disease was not found in these certain species of birds. This negative result probably is related to natural habitat, the chemical and physical characteristics and aquatic micro organisms might also be relevant to a possible synergistic action in the establishment of natural rhinosporidiosis. On the other hand our finding was support by similar studies that showed aquatic animal and water plants that have been examined microscopically and experimentally with negative results (Arseculeratne, 2002). It must be mentioned that in Iran, study on rhinosporidiosis in animals hasn't done previously by someone that we compare our finding to and this is the first of its kind. Human infections occur sporadically worldwide but are most commonly reported from tropical endemic areas, such as India, Sri Lanka and Argentina. In veterinary medicine, rhinosporidiosis has been reported worldwide in horses and dogs and to a much lesser extent, in cattle, cats, foxes and avian species.

In about human infection in Iran the previous studies showed different findings for example Firouz Abadi *et al.* (1971) has reported the disease in Ardebil, north western of Iran, but Sabokbar (1988) examined 100 nasal polyps without positive results. Therefore, in order to promote peoples knowledge and, it is necessary to determine the reservoir and sources of the organism in future studies in other regions of the country.

REFERENCES

- Arseculeratne, S.N., 2002. Recent advances in Rhinosporidiosis and *Rhinosporidium seeberi*. Indian J. Med. Microbiol., 20: 119-131.
- Caniatti, M., P. Roccabianca, E. Scanziani, M. Finazzi, C.M. Mortellaro, S. Romussi and G. Mandelli, 1988. Nasal rhinosporidiosis in dogs: Four cases from Europe and a review of the literature. Vet. Rec., 13: 334-338.
- Chao, S.S. and K.S. Loh, 2004. Rhinosporidiosis: An unusual cause of nasal masses gains prominence. J. Singapore Med., 5: 224-226.
- Davidson, W.R. and V.F. Nettles, 1977. Rhinosporidiosis in a wood duck. J. Am. Vet. Med. Assoc., 9: 989-990.
- Dhayagude, R.G., 1941. Unusual Rhinosporidial infection in man. Indian Med. Gazette, 76: 513-515.
- Fadl, F.A., H.G. Gugnani and D.J.B. Perera, 1995. Rhinosporidiosis in Saudi Arabia: Report of four cases. Mycoses, 38: 219-221.
- Fain, A. and V. Herin, 1957. Two cases of nasal rhinosporidiosis a wild goose and duck in Astrida. Mycopathol. Mycol., 1: 54-61.
- Firouz Abadi, A., M. Moghimi and Y. Azad, 1971. Rhinosporidiosis in Iran (Persia). A study of seventy four cases. Mycopathol. Mycol. Applic., 44: 249-260.
- Kennedy, F.A., R.R. Buggage and L. Ajello, 1995. Rhinosporidiosis: A description of an unprecedented outbreak in captive swans (*Cygnus* sp.) and a proposal for revision of the ontogenic nomenclature of *Rhinosporidium seeberi*. J. Med. Vet. Mycol., 3: 157-165.
- Leeming, G., U. Hetzel, T. Compbel and N. Kipar, 2007. Equine Rhinosporidiosis: An exotic disease in the UK. Vet. Rec., 160: 552-554.

- Moisan, P.G. and S.V. Baker, 2001. Rhinosporidiosis in a cat. *J. Vet. Diagn. Invest.*, 4: 352-354.
- Moses, J.S. and C. Balachandran, 1987. Rhinosporidiosis in bovines of Kanyakumari district, Tamil Nadu, India. *Mycopathologia*, 1: 23-26.
- Moses, S. *et al.*, 1990. Ocular rhinosporidiosis in Tamil Nadu, India. *Mycopathologia*, 111: 5-8.
- Rippon, J.W., 1998. *Medical Mycology, the Pathogenic Fungi and the Pathogenic Actinomycetes*. 3rd Edn., W.B. Saunders Company, pp: 362-373.
- Sabokbar, A., 1988. Survey of the Rhinosporidiosis in Tehran hospital bedridden patients that surgical operation of nasal polyp. Ph.D Thesis, Tehran University, pp: 143.
- Salehpour, M. and A. Rangdostfam, 1999. Survey of the seroepidemiological doubtful cases to Rhinosporidiosis in Ardebil and Tabriz. Ph.D Thesis, Tehran University, pp: 110.
- Sevtap, A., 2003. (About 3p.). *Mycology in the News*. The new taxonomic classification of *Rhinosporidium seeri*: Not a fungus anymore. Available from: <<http://www.doctorfungus.org/mail/archive/December2003.htm>>.