

Hence, immunocompromised persons, children, and others involved in the breeding of exotic birds should avoid contact with birds with clinically suspected *M. avium* subsp. *hominissuis*.

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**Edmealem Jembere Shitaye,
Veronika Grymova,
Martin Grym, Roman Halouzka,
Alica Horvathova,
Monika Moravkova,
Vladimir Beran,
Jana Svobodova,
Lenka Dvorska-Bartosova,
and Ivo Pavlik**

Author affiliations: Veterinary Research Institute, Brno, Czech Republic (E.J. Shitaye, A. Horvathova, M. Moravkova, V. Beran, L. Dvorska-Bartosova, I. Pavlik); University of Veterinary and Pharmaceutical Sciences, Brno (E.J. Shitaye, R. Halouzka); Veterinary Clinic AvetuM, Brno (V. Grymova, M. Grym); and Regional Institute of Public Health, Brno (J. Svobodova)

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References

1. Tell LA, Woods L, Cromie RL. Mycobacteriosis in birds. *Rev Sci Tech*. 2001;20:180–203.
2. Hoop RK, Böttger EC, Pfyffer GE. Etiological agents of mycobacteriosis in pet birds between 1986 and 1995. *J Clin Microbiol*. 1996;34:991–2.
3. Pavlik I, Svastova P, Bartl J, Dvorska L, Rychlik I. Relationship between IS901 in the *Mycobacterium avium* complex strains isolated from birds, animals, humans and environment and virulence for poultry. *Clin Diagn Lab Immunol*. 2000;7:212–7. DOI: 10.1128/CDLI.7.2.212-217.2000

4. Haist V, Seehusen F, Moser I, Hotzel H, Deschl U, Baumgärtner W, et al. *Mycobacterium avium* subsp. *hominissuis* infection in 2 pet dogs, Germany. *Emerg Infect Dis*. 2008;14:988–90. DOI: 10.3201/eid1406.071463
5. Dvorska L, Matlova L, Ayele WY, Fischer OA, Amemori T, Weston RT, et al. Avian tuberculosis in naturally infected captive water birds of the Ardeidae and Threskiornithidae families studied by serotyping, IS901 RFLP typing, and virulence for poultry. *Vet Microbiol*. 2007;119:366–74. DOI: 10.1016/j.vetmic.2006.09.010
6. Matlova L, Dvorska L, Ayele WY, Bartos M, Amemori T, Pavlik I. Distribution of *Mycobacterium avium* complex isolates in tissue samples of pigs fed peat naturally contaminated with mycobacteria as a supplement. *J Clin Microbiol*. 2005;43:1261–8. DOI: 10.1128/JCM.43.3.1261-1268.2005
7. Moravkova M, Hlozek P, Beran V, Pavlik I, Preziuso S, Cuteri V, et al. Strategy for the detection and differentiation of *Mycobacterium avium* species in isolates and heavily infected tissues. *Res Vet Sci*. 2008;85:257–64. DOI: 10.1016/j.rvsc.2007.10.006
8. Van Soolingen D, Bauer J, Leao S, Pavlik I, Vincent V, Rastogi N, et al. IS1245 Restriction fragment length polymorphism typing of *Mycobacterium avium* isolates: proposal for standardization. *J Clin Microbiol*. 1998;36:3051–4.
9. Cromie RL, Brown MJ, Ash NJ, Stanford JL. Avian immune responses to *Mycobacterium avium*: the wildfowl example. *Dev Comp Immunol*. 2000;24:169–85. DOI: 10.1016/S0145-305X(99)00071-3
10. Picardeau M, Varnerot A, Lecompte T, Brel F, May T, Vincent V. Use of different molecular typing techniques for bacteriological follow-up in a clinical trial with AIDS patients with *Mycobacterium avium* bacteremia. *J Clin Microbiol*. 1997;35:2503–10.

Address for correspondence: Ivo Pavlik, Veterinary Research Institute, Hudcova 70, 621 00 Brno, Czech Republic; email: pavlik@vri.cz



Mycobacterium colombiense and Pseudotuberculous Lymphadenopathy

To the Editor: *Mycobacterium colombiense* is a new species belonging to the *M. avium* complex (MAC). It is characterized by a unique internal transcribed spacer sequence and causing respiratory tract and disseminated infection in HIV-infected patients in Colombia (1). We report clinical and histologic features of lymphadenopathy resulting from *M. colombiense* infection.

A 25-month-old girl with an unremarkable medical history was hospitalized in the pediatric department of Timone Hospital, Marseille, France, due to development of swelling in a right subclavicular lymph node over a 1-month period. A 5-day course of oxacillin, which was administered orally, had been unsuccessful in alleviating the symptoms. The patient's general condition was excellent, and results of a physical examination were normal, with the exception of a 2-cm hard, immobile, yet painless, noninflammatory, enlarged lymph node. Due to the presence of the enlarged lymph node, a chest radiograph was performed, and results were normal. A hemogram indicated a hemoglobin concentration of 113 g/L, a leukocyte count $8.3 \times 10^9/L$ consisting of 31% polynuclear neutrophils and 62% lymphocytes, and a normal blood smear. A platelet count indicated a concentration of $389 \times 10^9/L$, and the serum lactic dehydrogenase level was 440 UI/L. In addition, no biologic inflammatory syndrome was observed based on the concentration of C-reactive protein (<1 mg/L) and an erythrocyte sedimentation rate of 18 mm/h.

Fine-needle aspiration of the lymph node showed necrosis and mature, activated lymphocytes. These results suggested a possible diagnosis of lymphoma, and a surgical excision

biopsy was subsequently performed. Direct microscopic examinations were carried out after results obtained by Gram and Ziehl-Neelsen staining showed that the lymph node was negative for acid-fast bacilli. Histopathologic analysis indicated epithelioid cell granulomas containing giant cells and caseous necrosis without altered leukocytes, all of which are compatible with tuberculosis. Culturing of the biopsy specimen in BACTEC broth (Becton Dickinson, Courtaboeuf, France) at 5% CO₂ at 37°C yielded acid-fast bacilli after a 7-day incubation period.

After inactivating the cells and extracting the DNA by using a previously described method, we identified the isolate by PCR sequencing of the *rpoB* gene (2) and its demonstrated 100% sequence similarity to *M. colombiense* CIP108962^T (1,2). Accordingly, the isolate exhibited positive urease activity, a distinctive characteristic that differentiates *M. colombiense* from other MAC species (1,2).

Recently, *M. colombiense* was shown to be responsible for an enlarged lymph node in 1 child from Spain who did not show any evidence of HIV infection (3). In that patient, histopathologic examination showed granulomatous adenitis with necrosis. We report that *M. colombiense*-infected lymph nodes also yield clinical and histopathologic features evocative of tuberculosis. Indeed, MAC organisms remain the most prevalent agents demonstrated in diseased lymph nodes in children (4).

Because modern molecular tools used for the description of emerging MAC species have not been available in most previous reports, the real prevalence of *M. colombiense* may have been underestimated. In children, *M. hemophilum* (5), *M. avium* subsp. *avium* (6), *M. avium* subsp. *hominissuis* (7), *M. lentiflavum* (8), *M. bohemium* (9), and *M. simiae* (10) have been demonstrated to be responsible for enlarged

cervical lymph nodes (online Appendix Table, available from www.cdc.gov/EID/content/15/4/619-appT.htm). Because management and antimicrobial drug treatment of each of these different infections vary in terms of indication, choice of drugs, and duration, the accurate and rapid identification of the causative *Mycobacterium* species is absolutely necessary. This identification should use PCR sequencing of selected universal molecular targets, including the 16S rRNA and *rpoB* genes (2), as illustrated herein.

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**Katariina Vuorenmaa,
Iskandar Ben Salah,
Vincent Barlogis,
Hervé Chambost,
and Michel Drancourt**

Author affiliations: Université de la Méditerranée, Marseille, France (K. Vuorenmaa, I. Ben Salah, M. Drancourt); Assistance Publique des Hôpitaux de Marseille—Fédération de Microbiologie Clinique Hôpital la Timone, Marseille (K. Vuorenmaa, I. Ben Salah, M. Drancourt); and Hôpital d'Enfants la Timone, Marseille (V. Barlogis, H. Chambost)

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References

- Murcia MI, Tortoli E, Menendez MC, Palenque E, Garcia MJ. *Mycobacterium colombiense* sp. nov., a novel member of the *Mycobacterium avium* complex and description of MAC-X as a new ITS genetic variant. *Int J Syst Evol Microbiol.* 2006;56:2049–54. DOI: 10.1099/ijs.0.64190-0
- Ben Salah I, Adekambi T, Raoult D, Drancourt M. *rpoB* sequence-based identification of *Mycobacterium avium* complex species. *Microbiology.* 2008;154:3715–23. DOI: 10.1099/mic.0.2008/020164-0
- Esparcia O, Navarro F, Quer M, Coll P. Lymphadenopathy caused by *Mycobacterium colombiense*. *J Clin Microbiol.* 2008;46:1885–7. DOI: 10.1128/JCM.01441-07
- Zeharia A, Eidlitz-Markus T, Haimi-Cohen Y, Samra Z, Kaufman L, Amir J. Management of nontuberculous mycobacteria-induced cervical lymphadenitis with observation alone. *Pediatr Infect Dis J.* 2008;27:920–2. DOI: 10.1097/INF.0b013e3181734fa3
- Cohen YH, Amir J, Ashkenazi S, Eidlitz-Markus T, Samra Z, Kaufmann L, et al. *Mycobacterium haemophilum* and lymphadenitis in immunocompetent children, Israel. *Emerg Infect Dis.* 2008;14:1437–9. DOI: 10.3201/eid1409.070917
- Thegerstrom J, Romanus V, Friman V, Brudin L, Haemig PD, Olsen B. *Mycobacterium avium* lymphadenopathy among children, Sweden. *Emerg Infect Dis.* 2008;14:661–3. DOI: 10.3201/eid1404.060570
- Bruijnesteijn van Coppenraet LE, de Haas PE, Lindeboom JA, Kuijper EJ, van Soolingen D. Lymphadenitis in children is caused by *Mycobacterium avium hominissuis* and not related to 'bird tuberculosis.' *Eur J Clin Microbiol Infect Dis.* 2008;27:293–9. DOI: 10.1007/s10096-007-0440-z
- Cabria F, Torres MV, Garcia-Cia JI, Dominguez-Garrido MN, Esteban J, Jimenez MS. Cervical lymphadenitis caused by *Mycobacterium lentiflavum*. *Pediatr Infect Dis J.* 2002;21:574–5. DOI: 10.1097/00006454-200206000-00022
- Huber J, Richter E, Binder L, Maass M, Eberl R, Zenz W. *Mycobacterium bohemium* and cervical lymphadenitis in children. *Emerg Infect Dis.* 2008;14:1158–9. DOI: 10.3201/eid1407.080142
- Patel NC, Minifee PK, Dishop MK, Munoz FM. *Mycobacterium simiae* cervical lymphadenitis. *Pediatr Infect Dis J.* 2007;26:362–3. DOI: 10.1097/01.inf.0000258614.98241.4e

Address for correspondence: Michel Drancourt, Unité de Recherche sur les Maladies Infectieuses et Tropicales Emergentes, Faculté de Médecine, 27, Blvd Jean Moulin, Marseille, CEDEX 5, France; email: michel.drancourt@univmed.fr



Appendix Table. *Mycobacterium* spp. implicated in lymphadenopathy in children, France*

<i>Mycobacterium</i> spp.	Clinical features			Microbiologic tests			Histopathology				Reference
	No. patients	Treatment	Outcome	Direct examination†	Culture	Molecular identification	Ring of epithelial cells	Giant cells	Caseous necrosis	Altered leukocytes	
<i>M. tuberculosis</i>				±	+	IS6110	+	+	+	–	(6)
<i>M. avium</i>	183	NR	NR	NR	+	NR	+	+	NR	NR	(7)
<i>M. avium</i> subsp. <i>hominissuis</i>	34	NR	NR	NR	+	IS1245	NR	NR	NR	NR	(5)
<i>M. haemophilum</i>	39	NR	NR	+	+	16S–23S rDNA	+	+	+	–	(8)
<i>M. lentiflavum</i>	3	SE	Cured	+	+	16S rRNA	+	+	NR	+	(9)
<i>M. bohemicum</i>	4	SE/C, R	Cured	±	+	16S rRNA	+	+	+	–	(10)
<i>M. simiae</i>	1	SE	Cured	+	+	HPLC	+	+	+	–	(3)
<i>M. colombiense</i>	1	SE	Cured	+	+	16S rRNA	+	+	+	–	This study
	1	SE	Cured	–	+	<i>rpoB</i>	+	+	+	–	

*IS, insertion sequence; NR, not reported; SE, surgical excision; C, clarithromycin; R, rifampin; NR, not reported; HPLC, high-performance liquid chromatography.

†Ziehl-Nelsen staining.