Parotid Gland Abscess Caused by
*Haemophilus Paraphrophilus*: A Case Report

Anton V. Rets¹, Issa Eid², Larry Lutwick³, and Matthew R. Pincus¹,²

¹Department of Pathology, SUNY Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, NY 11203; ²Department of Pathology and Laboratory Medicine, New York Harbor VA Health Care System, 800 Poly Place, Brooklyn, NY 11209; ³Department of Medicine, Infectious Disease Section, New York Harbor VA Health Care System, 800 Poly Place, Brooklyn, NY 11209, USA.

Abstract. Human diseases caused by *Haemophilus paraphrophilus* (*H.paraphrophilus*) are unusual. The following case report describes a 67-year-old man who presented with pain and swelling of the right side of the face. Fine needle aspiration suggested a parotid gland abscess. Microbiological studies identified *H.paraphrophilus*. This is the first time a parotid abscess has been found to be caused by this organism.

Introduction

*H.paraphrophilus* is one of species of *Haemophilus*, a genus of Gram-negative pleomorphic coccobacilli belonging to the *Pasteurella* family [1]. This microorganism is a member of the indigenous flora of the biofilms that form on tooth surfaces of man [2]. Human diseases caused by this organism are rare. There are case reports regarding *H.paraphrophilus* causing laryngo-epiglottitis [3], spinal epidural abscess [4], intracranial abscess [5], including intracebral abscess [6, 7], necrotizing fasciitis [8], arthritis [9], pneumonitis [10], endocarditis [11], spontaneous bacterial peritonitis [12], osteomyelitis [1], and hepatobiliary [13] infections. The parotid gland has never been reported to be involved by this organism.

We report the first case of parotid gland abscess caused by *H.paraphrophilus* in a 67-year-old man.

Case Report

Our patient is a 67-year-old man with HIV and diet-controlled hyperlipidemia, who presented to the dental office with a chief complaint of pain and swelling over the right side of the face and below the right ear over 1 week. Physical examination revealed intense pain and swelling over the affected area. All performed routine laboratory tests were found to have values within normal limits. A right parotid gland abscess was suspected, and fine-needle aspiration was performed. Cytopathologic examination of the aspirate confirmed the diagnosis. The aspirate was also submitted for microbiological testing.

The aspirate was inoculated on sheep blood agar, chocolate agar, MacConkey’s agar, Columbia colistin, and thioglycolate liquid media. The incubation was performed aerobically at 37°C in 8% CO₂ – 92% air for 24 hours. The growth was present on a chocolate agar plate. Gram stain showed short, thin Gram-negative bacilli that were found to be beta-lactamase negative.

Speciation was performed by utilizing the REMEL RapIDTM NH System (RapID™ NH System, Thermo Scientific, Lexena, REF:R831100). The biochemical profile of our isolate is presented in Table 1.

The scores identify the organism as either *H. paraphrophilus* or *H. aphrophilus* (Rapid NH Code Compendium). A distinguishing reaction between these two organisms is the oxidase reaction that is positive for *H. paraphrophilus* and negative for *H. aphrophilus*. Since the oxidase reaction was found to be positive, we identified the organism as *H. paraphrophilus* that is beta-lactamase negative. The patient was successfully treated with IV Unasyn and Bactrim for four days and then switched to oral Augmentin and Bactrim for another 10 days.

Address correspondence to Matthew Pincus, MD, PhD; tel: 718 630 3688; fax: 718 630 2960; e-mail: matthew.pincus2@va.gov
Discussion

The existence of *H. paraphrophilus* was recognized in 1959 as a hemolytic V and X factor-dependent, increased CO2-tension-preferring species of the genus *Haemophilus* [1]. The microorganism has been found as a member of normal oral and pharyngeal flora and, as noted above, can cause inflammatory processes, often with abscess formation, at various sites. However, there have been no reports on this organism as the cause of parotid gland infection. We now report *H. paraphrophilus* as the cause of parotid abscess in a patient. Several underlying conditions have been associated with infections caused by *H. paraphrophilus* in the previous case reports, such as tooth extraction, chronic lung disease [10], and valvular lesions [11]. To our knowledge, there was no evidence to support any similar associated condition in our patient, although HIV positivity implies immune deficiency that could have predisposed toward infection. If the latter was the underlying cause, the finding of localized *H. paraphrophilus* infection would be unique.

A β-lactamase-mediated resistance of *H. paraphrophilus* has been recorded in a case of life-threatening laryngo-epiglottitis [3]. In the current report, the microorganism was β-lactamase negative although it was successfully treated with a combination of a β-lactam antibiotic, β-lactamase inhibitor, and a sulfa drug.

References


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**Table 1. Biochemical characteristics of the current isolate**

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