FUSOBACTERIUM NECROPHORUM ACUTE OTITIS MEDIA IN INFANTS AND YOUNG TODDLERS: PRESENTATION OF CASE AND REVIEW OF THE LITERATURE

E. Panagouli¹, E. Staikou², Th. Lagousi¹, L.Karamatzanis³, M. Daskalaki², A. Makri², P. Korovessi¹, S. Kostaridou¹, V.Tsagris¹

¹ Department of Paediatrics, Penteli Children's Hospital, Athens, Greece

² Microbiology Laboratory, Penteli Children's Hospital, Athens, Greece

³ ENT Department Penteli Children's Hospital, Athens, Greece

BACKGROUND

➤ *Fusobacterium necrophorum* is an anaerobic Gram-negative bacillus which comprises the flora of the oral cavity, the gastrointestinal and female genital tract. It may cause a wide range of age independent head and neck infections. Most common infection in children less than 2 years old is acute otitis media (AOM) with serious complications such as mastoiditis, osteomyelitis and Lemierre syndrome.

Fig 1: *F. Necrophorum* gram stain

(Toronto Western Hospital –

<http://morningreporttwh.blogspot.gr/2014/10/lemierre-syndrome.html>)

CASE PRESENTATION

- ❖ An otherwise healthy 18-month-old girl presented to our Department with fever and right ear otorrhea. There was a history of 2-3 episodes of recurrent AOM during the last few months.
- ❖ The clinical examination revealed tympanic membrane rupture and fluid presence in the ear canal without mastoiditis. Fluid was obtained for culture and the child was discharged on empiric amoxycillin-clavulanate po, with high dose amoxycillin.
- ❖ *F.necrophorum* was isolated from middle-ear fluid culture, identified by colony morphology, gram staining and resistance phenotype to antimicrobials (susceptible to kanamycin, colistin, penicillin, rifampicin and resistant to vancomycin) and confirmed by BD BBL-Crystal semiconductor identification system.
- ❖ Follow-up was uneventful and after completion of a 10-day antimicrobial course, a complete resolution of symptoms and structural and functional restoration of the tympanic membrane were noted.

Fig 2: *F. Necrophorum* middle ear infections in infants according to the literature (2004-2015).

Data adopted from Stergiopoulou&Walsh 2016 (4)

REVIEW OF THE LITERATURE-LEARNING POINTS

- ✓ A 40-year review of the literature revealed 12 cases of *F. necrophorum* AOM in infants, with an increasing trend during the last decade (Fig. 2)
- ✓ Anaerobes are generally considered responsible for less than 1% of middle ear infections in children, with *F.necrophorum* being very rare among young toddlers
- ✓ Serious complications of *F. necrophorum* AOM in infants appear to be more common than AOM complications caused by conventional pathogens
- ✓ Since in our case there was no complication, it appears that prompt initiation of antimicrobial treatment in cases of otorrhea in children according to guidelines, might be of importance in order to avoid complications in cases of *F. necrophorum* AOM.

REFERENCES

1. Creemers-Schild D, Gronthoud F, Spanjaard L, Visser LG, Brouwer CN, Kuijper EJ. *Fusobacterium necrophorum*, an emerging pathogen of otogenic and paranasal infections? *New Microbes New Infect.* 2014 May;2(3):52-7.
2. Shamriz O, Engelhard D, Temper V, Revel-Vilk S, Benenson S, Brooks R, Tenenbaum A, Stepensky P, Koplewitz B, Kaufmann M, Averbuch D. Infections caused by *Fusobacterium* in children: a 14-year single-center experience. *Infection* 2015 Dec;43(6):663-70.
3. Karen Arane, MSc and Ran D. Goldman, MD FRCP. *Fusobacterium* infections in children *Can Fam Physician* 2016 Oct; 62(10): 813–814.
4. Stergiopoulou T, Walsh TJ. *Fusobacterium necrophorum* otitis and mastoiditis in infants and young toddlers. *Eur J Clin Microbiol Infect Dis* 2016 May;35(5):735-40.
5. Le Monnier A1, Jamet A, Carbonnelle E, Barthod G, Moumille K, Lesage F, Zahar JR, Mannach Y, Berche P, Couloigner V. *Fusobacterium necrophorum* middle ear infections in children and related complications: report of 25 cases and literature review. *Pediatr Infect Dis J.* 2008 Jul;27(7):613-7.

CONTACT DETAILS

email: theanolagousi@hotmail.com

<http://www.paidon-pentelis.gr>