Bordetella bronchiseptica exudative tonsillitis in a previously healthy child
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Introduction

• Bordetella spp are aerobic coccobacilli known to be found in the upper respiratory tract of several mammalian animals.
• It causes tracheobronchitis in dogs (kennel cough), pneumonia in cats, neonatal pneumonia and atrophic rhinitis in pigs. Asymptomatic and chronic colonization is also known.
• Bordetella bronchiseptica infections in humans is a very rare entity.
• Very few cases of infections involving bloodstream, respiratory tract, meningitis, peritonitis and wound infections have been described in literature.
• Many of the cases reported in humans are of patients who are debilitated or immunosuppressed.
• The organism is less commonly isolated from immunocompetent individuals.

Materials and Methods

• A 7 years old male child presented with history of throat pain for three days.
• He was not able to take solid food and could accept only sips of fluids.
• On examination tonsils were enlarged and inflamed and throat showed white patchy exudates on the tonsils.
• X-ray neck lateral view had revealed enlarged submandibular glands.
• There was no associated illness or history of drug intake.
• Blood was sent for complete haemogram (CBC), C-Reactive protein.
• Exudate on the tonsils was taken on a swab for Gram Stain and aerobic culture.
• Aerobic culture grew Alpha haemolytic streptococci, nonpathogenic Neisseria and moist opaque colonies on blood agar.
• Gram stain of the moist opaque colonies on culture showed small gram negative cocccobacilli. These colonies were oxidase positive, urease positive.
• The isolate was put for identification on Vitek 2 Compact using ID GN card (BioMérieux, Marcy l’Etoile, France) and Vitek MS with a confidence value of 99.9.
• The isolate (Accession Number KY075896 in Figure below) showed high similarity with Bordetella bronchiseptica based on nucleotide homology and phylogenetic analysis.
• CBC showed elevated neutrophils -71% (biological reference interval (40%-62%).
• C-reactive protein was raised:24.4mg/l(normal value<8mg/l).
• Gram stain of the exudate showed plenty of pus cells and plenty of small gram negative cocccobacilli and occasional Gram positive cocci in short chains.
• The isolate was identified as Bordetella bronchiseptica on Vitek 2 Compact using ID GN card (BioMérieux, Marcy l’Etoile, France) and Vitek MS with a confidence value of 99.9.

Results

• Antibiotics susceptibility test was put up and interpreted according to CLSI document M45-A2.
• The isolate was sensitive to ciprofloxacin, erythromycin, amoxicillin-clavulanate, trimethoprim-sulfamethoxazole and Minocycline.
• The child was treated with Syrup amoxicillin plus clavulanate (400mg) 5ml per orally 12 hourly for 7 days. He recovered after completion of therapy.
• There was history of close contact with his pet dog; a Cocker Spaniel.

Conclusions

• Keeping in view the clinical picture of fever with exudative tonsillitis, raised neutrophils and CRP and the Gram stain report with presence of pus cells and the culture showing growth of only Bordetella bronchiseptica besides normal flora we conclude it to be the likely pathogen.
• This is the first case report from India of Tonsillitis due to Bordetella bronchiseptica in a child.
• An unusual bacterial causative agent could be rapidly identified by using MALDI-TOF technology and subsequent confirmation by 16S rRNA sequencing.
• History of contact with animals should be kept in mind with such a clinical presentation.
• Since we could not take a sample from the pet we can only suggest it to be the likely source of infection.

Bibliography