



RETROPHARYNGEAL ABSCESS IS A SERIOUS INFECTION THAT DESERVES ATTENTION

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INTRODUCTION

Retropharyngeal abscess (RPA) is a serious, life-threatening infection that affects the area behind the pharynx called the retropharyngeal space (1). This infection occurs primarily in children but can also affect adults. RPA is caused by bacterial infection which leads to swelling, inflammation, the accumulation of pus, and obstruction of the airways. In primary infection, the retropharyngeal space may become infected by nearby structures that include the paranasal sinuses, pharynx, tonsils, teeth, and middle ear (2). Upper respiratory tract infections, such as pharyngitis or tonsillitis, often precede the development of RPA. In some cases, bacteria can enter the retropharyngeal space and infect the lymph nodes, causing tissue trauma, inflammation, and pain. In children, more than in adults, these infections can form abscesses that often regress with age. In the infected area, bacteria multiply and generate pus in the retropharyngeal space and cause inflammation.

DISCUSSION

The immune reaction to RPA is orchestrated by immune cells including neutrophils, macrophages, and later, lymphocytes, which release enzymes and reactive oxygen species (ROS). These are necessary molecules to combat microorganisms, even though they often cause tissue damage (3).

The pus that forms in the abscess is a pocket of infected fluid surrounded by inflamed tissue. If the abscess enlarges, it can push against the posterior wall of the pharynx, potentially leading to airway obstruction, dysphagia, and difficulty in breathing. RPA is mostly caused by group A *Streptococcus pyogenes*, *Staphylococcus aureus*, and anaerobic bacteria, but in some cases, *Haemophilus influenzae* may also be involved.

As in other bacterial infections, the first line of defense includes the activation of neutrophils and macrophages. These cells recognize pathogen-associated molecular patterns (PAMPs) via pattern recognition receptors (PRRs) such as Toll-like receptors (TLRs). In adaptive immunity, the immune system becomes involved with the activation of T-cells, B-cells, and their subsets, leading to antibody production and a more specific immune response. In innate immunity, pro-inflammatory cytokines such as IL-1, IL-6, and TNF are released, which recruit more immune cells to the site of infection (4).

S. pyogenes produces toxins and enzymes, such as streptolysins and hyaluronidase, that contribute to the spread of infection and tissue damage. In an attempt to destroy the bacteria, activated neutrophils release myeloperoxidase and elastase, although these enzymes also contribute to tissue damage.

The abscess environment is hypoxic, which can affect the survival and virulence of some bacteria, especially anaerobic bacteria. The formation of a fibrous capsule around the abscess by fibroblasts can limit the spread of infection and compromise immune access, making it difficult for antibiotics to penetrate and effectively treat the abscess (5).

Diagnostic identification of an RPA can be made using imaging techniques such as CT scans. Treatment is performed with antibiotics, which cover both aerobic and anaerobic bacteria, and the abscess may require surgical drainage if it is large or if there is a risk of airway compromise.

CONCLUSIONS

In conclusion, RPA is a serious infection that results from bacterial infiltration of the retropharyngeal space, leading to the formation of an abscess. The reactions that occur between virulent bacteria and the host's immune response are quite complex and it is necessary to treat RPA promptly to avoid serious and significant risks.

Conflict of interest

The author declares that they have no conflict of interest.

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