

The Course of Exudative Otitis Media in Children Under 3 Years of Age

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Abstract

Exudative otitis media (EOM) is one of the most common inflammatory diseases in children, primarily affecting those under the age of 3 years. Due to the anatomical and immunological characteristics of this age group, EOM has a distinct clinical course. This article provides a comprehensive analysis of the pathogenesis, clinical manifestations, diagnosis, and treatment methods of exudative otitis media in young children.

1. Introduction

Exudative otitis media is a condition characterized by the accumulation of fluid in the middle ear cavity without signs of acute inflammation, which can lead to hearing impairment. Children under the age of 3 are particularly prone to this pathology due to the unique anatomical structure of the auditory tube and the immaturity of their immune system.

2. Etiology and Pathogenesis

2.1. Anatomical and Physiological Factors

- In children under 3 years, the auditory tube is shorter, wider, and more horizontally positioned compared to adults, facilitating the entry of bacteria and viruses into the middle ear.
- An underdeveloped immune system makes young children more susceptible to upper respiratory tract infections, which can spread to the middle ear.

2.2. Infectious Factors

- The primary cause of exudative otitis media is upper respiratory tract infections, including influenza, acute respiratory viral infections (ARVI), adenovirus, Streptococcus, and Staphylococcus infections.
- Allergic reactions, particularly allergic rhinitis and adenoid hypertrophy, may contribute to the development of EOM.
- Passive smoking has also been linked to an increased risk of the disease.

2.3. Stages of Disease Progression

Exudative otitis media typically progresses through the following stages:

1. **Serous Stage** – Swelling of the auditory tube creates a vacuum in the middle ear.

2. **Exudative Stage** – Mucous fluid accumulates in the middle ear cavity.
3. **Muroid Stage** – The exudate thickens into a sticky consistency (glue ear).
4. **Fibrotic Stage** – Delayed or improper treatment leads to fibrosis of the middle ear mucosa, potentially causing permanent hearing loss.

3. Clinical Manifestations

Children under 3 years of age cannot clearly express their symptoms, making early detection of EOM challenging.

3.1. Primary Symptoms

- **Hearing loss** – Children may respond sluggishly to sounds or have delayed reactions to verbal cues.
- **Delayed speech and cognitive development** – Prolonged EOM can lead to speech delays.
- **Headache and ear pressure** – Older children may report discomfort or a sensation of pressure in the ear.
- **Frequent ear-touching or signs of ear discomfort** – Young children may frequently touch their ears.

EOM is typically painless, which may prevent parents from noticing the condition. Regular medical check-ups play a crucial role in early detection.

4. Diagnosis

4.1. Medical History and Physical Examination

- A history of recent upper respiratory infections can serve as an important diagnostic indicator.
- Otoscopic examination may reveal a retracted tympanic membrane and the presence of fluid in the middle ear.

4.2. Primary Diagnostic Methods

- **Tympanoscopy** – Evaluates the mobility of the tympanic membrane.
- **Audiometry** – Determines the extent of hearing impairment.
- **Tympanometry** – Assesses the presence of fluid in the middle ear.

5. Treatment

The choice of treatment depends on the stage of the disease.

5.1. Conservative Treatment

- **Restoring nasal patency:**
 - Nasal decongestants (e.g., oxymetazoline) are used for short-term relief.
 - Antihistamines are administered if an allergic component is present.
- **Reducing inflammation:**
 - Topical corticosteroid sprays (e.g., mometasone or fluticasone) are recommended.
- **Antibiotics** are prescribed only in cases of bacterial infection.

5.2. Physiotherapy and Adjunctive Therapies

- **Saline inhalation therapy** – Helps clear nasal passages.
- **Politzer air insufflation** – Used to open the auditory tube.
- **Middle ear massage** – Facilitates fluid drainage.

5.3. *Surgical Intervention*

- **Tympanostomy** – Ventilation tubes are inserted if fluid persists for an extended period.
- **Adenoidectomy** – Removal of enlarged adenoids helps improve auditory tube function.

6. Prevention

- Preventing colds and viral infections in children.
- Avoiding exposure to passive smoking.
- Timely treatment of nasal breathing disorders.
- Regular medical check-ups for middle ear and auditory system health.

7. Conclusion

Exudative otitis media in children under 3 years of age often progresses asymptotically and painlessly, leading to delayed diagnosis. Early identification and treatment are essential to preserving hearing and ensuring normal speech development. Therefore, regular examinations by pediatricians and otolaryngologists are crucial for timely intervention.

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