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**THE ROLE OF ANTIBIOTIC NON-RESPONSE AS A CLINICAL TOOL: LESSONS FROM
A CASE OF PEDIATRIC ESTHESIONEUROBLASTOMA**

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Relevance. A significant challenge in modern pediatrics is the "masking" effect of rare tumors by common infections. When a child presents with a swollen neck, the immediate and logical clinical instinct is to treat for a common bacterial infection or an abscess. While this is the standard practice, it can lead to dangerous delay in diagnosing cancer. In modern pharmacy and medicine, we must view the "failure of antibiotics" as a fast diagnostic signal for a more serious underlying condition.

Aim: this report evaluates the pharmacological treatment of a 9-year-old boy who was admitted at the Grodno University clinic. Our aim is to explain why his lack of response to standard, high-level antibiotic therapy was the critical key that led to the diagnosis of a rare Esthesioneuroblastoma.

Materials and methods. We conducted a detailed study of the medical records of this 9 year old boy between December 16th and December 23rd, 2025.

Results and their discussion. The journey began on December 15th, when the patient was prescribed Oral Augmentin for what at first appeared to be a standard infection. However, the "human" reality of the case shifted rapidly. By the next day, the boy's symptoms did not improve, they progressed. He developed trismus (a painful inability to open his jaw) and significant parotid swelling. He was immediately hospitalized in the ENT children's department of the Health care Institution, Grodno University Clinic.

The intensive regimen (the hospital stay). Suspecting a peritonsillar abscess, doctors escalated treatment to a strong dual antibiotic therapy: Ceftriaxone (1.0g twice daily, IV): A broad-spectrum 3rd generation cephalosporin, Metronidazole (50ml twice daily IV): To target potential anaerobic bacteria common in deep neck abscesses. Supportive Care: He was given IV fluids (Glucose/Saline) for detoxification, Paracetamol for his persistent low-grade fever (37.2°C) and pain, and Lactulose (5ml 3 times a day) to maintain his gastrointestinal function during such aggressive antibiotic use. Usually, if a swelling is caused by bacteria, these drugs show favorable results within 48 to 72 hours. However, in this case, the patient's stiff jaw and swelling did not change at all.

The reveal. Imaging scans (CT and MRI) showed a large, solid mass of 6cm located in the right parapharyngeal space, pushing on the throat, making the airway narrower. It was also shown that the mass partially surrounded the internal carotid artery and jugular vein. Later, a biopsy of the tissue was analyzed under a microscope, showing rounded, monomorphic cells with hyperchromatic nuclei revealing a very rare tumor, Esthesioneuroblastoma (T3N1M0, Stage 3).

The failure of the antibiotics was the first clear sign that the patient had a malignancy rather than a simple infection.

Conclusions. The "response to treatment" as a diagnostic bridge. This case offers a critical lesson for current doctors: Do not wait too long for antibiotics to work. If a child presents with a neck mass and shows no clinical improvement after 3 days of intensive IV therapy, the pharmacological trial has failed. At this exact point, the medical team must stop searching for an infection and immediately order a MRI or a biopsy. Using the "response to treatment" as a diagnostic bridge is vital, life-saving strategy to catch rare and aggressive cancers like Esthesioneuroblastoma before it is too late.