

# Acute Neonatal Parotitis in A Newborn: A Case Report

Yenidoğan Döneminde Akut Parotid Vakası: Olgu Sunumu

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## Abstract

Acute neonatal parotitis is a rare entity in neonates. It is often characterised by the enlargement of the parotid gland. Although the main agent is *Staphylococcus aureus*, other bacterial agents may be isolated as well. Prematurity, low birth weight, dehydration, immun suppression, oral trauma, and septicemia are the major risk factors for acute neonatal parotitis. In this article, we report a previously healthy 18-day-old term newborn presented with irritability and inconsolable cry who was diagnosed as acute neonatal parotitis. Laboratory evaluation showed increased CRP and procalcitonin levels with normal amylase concentration. USG and MRI findings confirmed acute parotitis. The patient received cefazolin and amikacin for 10 days. The only risk factor for our patient was oral trauma. Early diagnosis and treatment can prevent complications.

**Key words** newborn, oral trauma, parotid gland enlargement

## Öz

Akut neonatal parotid yenidoğan döneminde nadir görülür. Parotis bezinde şişme ile karakterizedir. En sık saptanan etken *Staphylococcus aureus* olmakla birlikte başka etkenler de izole edilebilir. Prematürite, düşük doğum ağırlığı, dehidratasyon, immün süpresyon, oral travma ve sepsisemi başlıca risk faktörleridir. Bu sunumda öncesinde sağlıklı olan, huzursuzluk ve sakinleştirilemeyen ağlaması olup akut neonatal parotid tanısı konan bir olgu sunulmuştur. Hastamızın CRP ve prokalsitonin düzeylerinde yükselme olup amilaz düzeyi normaldi. Ultrasonografi ve Manyetik rezonans görüntülemeleri ile akut parotid tanısı doğrulandı. On gün boyunca sefazolin ve amikasin tedavisi aldı. Hastamızdaki tek risk faktörü oral travmaydı. Erken tanı ve tedavi komplikasyon gelişimini önlemektedir.

**Anahtar Kelimeler** yenidoğan, oral travma, parotis bezinde büyüme



## Introduction

Acute neonatal parotitis (ANP) is a rare entity in neonatal age group, which is characterized by swelling and tenderness of the parotid gland with or without purulent discharge from the Stensen's duct<sup>1,2</sup>. Acute neonatal parotitis can cause non-specific symptoms as well as fever, irritability or inconsolable cry. It is estimated that ANP occurs 13.8 in 10,000 newborn admissions to the hospital<sup>3,4</sup>. Although the most causative agent is known as *Staphylococcus aureus*, other bacterial agents may be isolated including streptococci and gram negative bacilli<sup>2</sup>. Low birth weight, immune suppression, Stensen duct obstruction, dehydration and oral trauma are the risk factors for the development of ANP<sup>3</sup>.

Here, we describe an 18-day-old term newborn presented with irritability and inconsolable cry due to community acquired ANP and discussed clinical findings and differential diagnosis.

## Case Report

An 18-day-old male was admitted to the pediatrics department for irritability and inconsolable cry for the last 2 days. The baby was born full term by vaginal delivery. He was the second child of a 30-year-old mother who had an uncomplicated pregnancy with no perinatal risk factors. Family history did not indicate any risk for congenital anomalies and there was no consanguinity.

On admission, the newborn's body temperature was 38.2 °C, with brachial arterial blood pressure 74/41 mmHg, heart rate of 155 beats per minute and the respiratory rate 38 per minute. Physical examination was unremarkable except for swollen parotid gland (Figure 1).



Figure 1. Picture of the patient with preauricular swelling

Initial laboratory tests showed a total white cell count of 17.550 cell/ $\mu$ L with 62.4% neutrophils, hemoglobin level of 12.7 gm/dl and platelet count of 499.000 cell/ $\mu$ L. Serum procalcitonin level was 0.15 ng/ml (N: 0-0.12 ng/ml) and C-reactive protein was 26.01 mg/L (N: 0-8.2 mg/L). Blood and urine cultures were negative for bacterial growth. Ultrasonographic (USG) evaluation of the pre-auricular area and neck demonstrated relatively enlarged, hypoechoic left parotid gland with



paranchymal echogenity, subcutaneous edema at the left parotid site and multiple small submandibular lymphadenopathies (Figure 2).

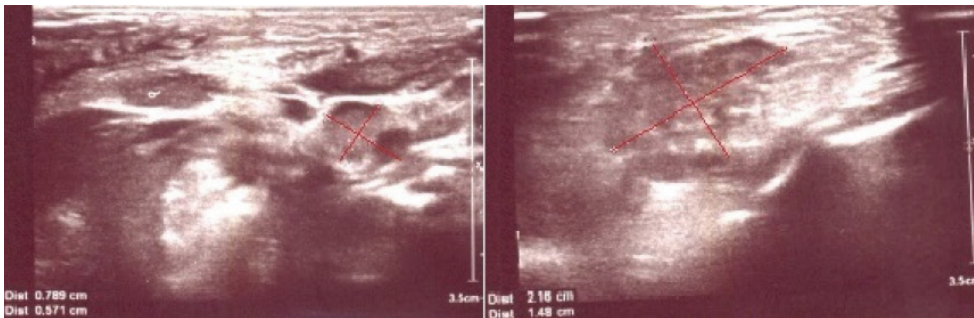


Figure 2. Parotid and submandibular USG findings. (a) show small submandibular lymphadenopathy (b) show relatively enlarged, hypoechoic left parotid gland with paranchymal echogenity, subcutaneous edema at the left parotid site.

The first two days of the treatment, he was febrile with axillary temperature of 38.2-38.5 °C. Magnetic resonance imaging (MRI) was performed and it was remarkable for diffuse parotid gland enlargement. There was no tumoral mass or abscess formation (Figure 3)..



Figure 3. Maxillo-facial MRI findings. Axial T1W show diffuse parotid gland enlargement

Based on the clinical presentation, a diagnosis of ANP was considered and the patient was started on cefazolin and amikacin. After admission to hospital with the diagnosis of ANP, his mother told that his 3 years old sister made the baby suck her finger which might have caused oral trauma and infection. Antibiotic treatment with cefazolin and amikacin was continued for 10 days. During the follow-up recurrence of the parotitis was not seen.

The oral informed consent was obtained from the parent of the patient.



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## Discussion

Acute neonatal parotitis can occur in a healthy newborn after oral trauma. Other risk factors of ANP are prematurity, low birth weight, immune suppression, Stensen duct obstruction, dehydration, oral trauma, and septicaemia<sup>3-5</sup>. The most common causative organism is *Staphylococcus aureus* (55% of cases), however *Streptococcus pyogenes*, *Streptococcus viridans*, and other gram positive cocci (22%). Gram negative bacilli (16%) can be isolated from the cultures as well<sup>2,4,5</sup>.

The main presentation of ANP is swelling and erythema in the pre-auricular area and fever. Sometimes the initial presentation of ANP may be incessant cry in a healthy newborn as presented in our case. Laboratory findings in ANP are usually nonspecific that of leukocytosis with neutrophil predominance and increased inflammatory markers such as CRP. Elevated serum amylase levels are seen in 45% of newborns<sup>2</sup>. Our patient's serum amylase level was within the normal range.

The diagnosis of ANP is generally based on clinical signs and findings. Other causes of focal swelling include infections, congenital disorders such as hemangioma or venolymphatic malformation and tumors. USG findings usually confirm the diagnosis however advanced imaging studies may be considered when there is a doubt<sup>3,6</sup>. Mumps, human immunodeficiency virus (HIV) and tuberculosis should be detected in susceptible populations. Sialolithiasis, tumor and autoimmune diseases such as Sjögren syndrome are very rare among neonates<sup>3,7</sup>. Our patient had no risk for HIV, tuberculosis, mumps and according to USG and MRI, the diagnosis of infection was confirmed.

Since the most common agent is *Staphylococcus aureus*, penicillinase-resistant penicillins or first-generation cephalosporin and amikacin are the good initial choices for the treatment. The average duration for the treatment is ten days<sup>8</sup>.

The most common complications of ANP are intraparotid abscess, salivary fistula, facial palsy, mediastinitis and extension to external ear. If there is persistence of fever and swelling of the parotid gland increases progressively or fluctuation presents, intraparotid abscess should be considered and surgical intervention is required<sup>9,10</sup>. Our patient didn't have any complications and he was discharged in a good condition.

All in all, although ANP is rare, it should be suspected in infants having inconsolable cry and facial swelling. In this article, we emphasize the importance of prompt diagnosis and early antibiotic therapy which are essential for a good outcome and prevention of complications.

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