Pediatric Oncall Journal

DOI: https://doi.org/10.7199/ped.oncall.2025.29

CASE REPORTS

AN UNUSUAL CASE OF SPONTANEOUS STAPHYLOCOCCAL SCALP ABSCESS IN A NEWBORN : A CASE REPORT

Prashanth RR, Anitha Haribalakrishna, Shweta Mhatre.

Department of Neonatology, Seth G.S. Medical College and King Edward Memorial Hospital, Mumbai, India.

ABSTRACT

Neonatal scalp abscess is an unusual complication which occurs due to infection of cephalhematoma, infection of the scalp laceration caused by traumatic delivery or may even occur spontaneously. We illustrate a case of spontaneous scalp abscess in a 26 day old neonate caused by methicillin sensitive staphylococcus aureus (MSSA) infection with no other complications and which had good recovery following treatment. Prompt recognition of scalp abscess, isolating the causative organism, ruling out associated complications, intravenous antibiotics and appropriate wound care are the key aspects of management.

ARTICLE HISTORY

Received 25 January 2023

Accepted 29 March 2023

KEYWORDS

Neonatal scalp abscess, MSSA scalp infection, MSSA scalp infection

Introduction

Post delivery neonatal scalp swelling is a common clinical finding. This occurs secondary to pressure over presenting part of the head due to prolonged labour or during difficult extraction. Scalp abscess is an unusual complication that can develop due to the infection of cephalhematoma, scalp laceration or scalp electrodes application site. In this case report we discuss an unusual case of spontaneous unilateral scalp abscess, the clinical course and management.

Case Report

A 30 years old G3P2L2 with preeclampsia detected at 20 weeks of gestation, delivered via LSCS a female neonate at term gestation with birth weight of 2840 grams. Neonate had APGAR scores of 9 at both 1 and 5 minutes, and no resuscitation was required. She was kept in the postnatal ward and discharged home on day 5 of life. She was brought back to NICU on day 26 of life with scalp swelling. On revisiting the history, the mother noticed swelling over back of the scalp 2 days prior to presentation and was associated with pain and discomfort. There was a documented fever of 101°F on the same day. She was started on oral paracetamol and oral antibiotics by a doctor at the point of first contact. In view of persistent fever she was brought to our NICU for further management. The neonate was on breast feeds with occasional bottle feeds and at the time of admission her weight was 3010 g. Daily bathing of neonate was not done. There was no history of head massage, head shaving or oil application. There was no history of difficult delivery, scalp laceration or blood collection in the scalp at time of delivery or discharge and there was no application of scalp electrodes.

Address for Correspondance: : Dr. Prashanth RR, Department of Neonatology, 10th floor, MSB, KEM hospital, Parel, Mumbai 400012, India.
Email: prash2635@gmail.com.

On examination the head circumference was normal (34 cm). There was 1 x 2 cm swelling noted over the right parietal bone overlying the right lambdoid suture. The swelling was fluctuant and tender with pus draining. The underlying bone appeared normal. Rest of the scalp was normal. There was no evidence of any skin lesions. Other physical examination and systemic examination including neurologic examination was normal.

USG of the skull revealed 1 x 2 cm swelling over the right parietal bone on posterior aspect with isoechoic content with no internal vascularity. No intracranial extension was noted and underlying bone was normal. X-ray of the skull also showed a well defined radiopaque lesion over the right parietal bone extending towards occiput with no evidence of osteomyelitis.

Based on clinical and radiological findings, a diagnosis of ruptured neonatal scalp abscess was made. During the neonatal intensive care stay, the neonate was continued on exclusive breastfeeding and remained afebrile. Blood investigations revealed a hemoglobin of 11g%, WBC count- 25900 cells per cm^2 with 52% neutrophils, 44% lymphocytes and 4% eosinophils and CRP was 83.43 mg/L. She was started on intravenous amoxicillin-clavulanic acid, amikacin and oral paracetamol for pain control.

The neonate was further evaluated by a multidisciplinary team of pediatric surgeon, plastic surgeon and dermatologist. No surgical intervention was advised as the abscess had already ruptured. Wound dressing with povidone-iodine and hydrogel was advised. Healing of wound by secondary intention was advised.

Wound swab grew MSSA which was sensitive to amoxicillin-clavulanic acid. CSF examination was normal. CSF and blood cultures were sterile.

IV antibiotics were continued for 14 days. There was resolution of the abscess to less than 0.2 cm. The wound remained healthy. Baby was discharged on day 40 of life with a weight of 3230 g. Repeat sepsis workup was normal. She remains under close multidisciplinary follow-up.

Figure 1. Scalp abscess on admission seen over the right parietal bone overlying the right lambdoid suture with pus draining. Corresponding X-ray skull showing a well defined radiopaque lesion over the right parietal bone extending towards occiput with normal underlying bone. At discharge, a resolving scalp abscess is noted.

Discussion

Neonatal scalp abscess has a reported incidence of upto 5.4%.[1] The organisms are mostly polymicrobial which includes the aerobes (e.g., Staphylococci, Streptococci A, B, D, Enterobacteriaceae, E. Coli, Klebsiella pneumoniae) and anaerobes (e.g., Bacteroides, Peptostreptococcus, Prevotella, Propionibacterium acnes spp.).[2] Similar to our index case, a case series of 6 neonates from Florida revealed coagulase negative staph aureus to be the cause in 50% of the cases.[3]

Etiology of scalp abscess include infected cephalohematoma, electrode insertion for fetal monitoring, traumatic scalp lacerations during LSCS delivery and needle aspiration of a subgaleal haematoma.[4] The location of the abscess in our index case was over the parietal bone which is also a common site for cephalhematoma. A head exam done at birth and before discharge found no swelling or laceration. Since non-invasive fetal heart rate monitoring has replaced fetal scalp electrode monitoring over the decade, the etiology of scalp abscess due to fetal scalp electrode placement is ruled out. Other mimics include caput succedaneum (soft, non fluctuant), herpes simplex virus infection (vesicular) and pustular melanosis.

Clinical findings of scalp abscess include irritability, fever, poor feeding, mass over the scalp with or without drainage of pus and septicemia. These abscesses are usually confined to scalp tissue. Accompanying osteomyelitis, intracranial infections such as meningitis and brain abscess need to be ruled out. Workup includes complete sepsis evaluation which include complete blood count, C-reactive protein/procalcitonin, blood culture and cerebrospinal fluid analysis. Cranial imaging (ultrasonography) is a must to rule out intracranial extension.[5]

Weiner et al studied 6 neonates of which 1 had bacterial meningitis (CSF culture positive for enterococcus), and none had evidence of intracranial extension of the scalp infection. Three wound cultures grew coagulase-negative staphylococci, and one grew E. coli.[3] Cordelo et al. studied 148 neonates and noted 3 cases of osteomyelitis, one case of cellulitis, four cases of septicemia and one death.[1] Sepsis workup was positive in our index neonate with no evidence of meningitis or intracranial extension of the abscess and no osteomyelitis. Pus culture grew MSSA sensitive to amoxicillin-clavulanic acid.

Empiric intravenous antibiotics until further guided by the results of cultures are the mainstay of treatment. A beta lactam/ beta lactamase inhibitor combination or clindamycin or a third-generation cephalosporin would be the initial choice of antibiotics.[3] Incision and drainage remains a key component in the management of neonatal scalp abscess and can help in guiding organisms for culture and sensitivity.

On doing an extensive literature search, we found that overall outcomes of neonatal scalp abscesses are good especially when an organism is isolated. We attributed the cause of MSSA scalp abscess to improper hygienic practices. Parents were counseled regarding maintenance of good overall hygiene, scalp wound care and regular follow up.

Conclusion

This case illustrates the importance of head examination after birth and at discharge. Diagnostic tests in scalp abscess must include ruling out potentially life threatening complications such as intracranial extension, meningitis and osteomyelitis. Prompt recognition, isolation of organism and use of sensitive intravenous antibiotics lead to an overall good outcome.

Acknowledgement

The authors thank Dr. Sangeeta Ravat, Dean, Seth GS Medical College and KEM Hospital, Mumbai for granting permission for publication.

Compliance with Ethical Standards

Funding None

Conflict of Interest None

References:

1. Cordero L, Anderson CW, Zuspan FP. Scalp abscess: a benign and infrequent complication of fetal monitoring. Am J Obstet Gynecol. 1983;146:126 -30.
2. Brook I. Infected neonatal cephalohematomas caused by anaerobic bacteria. J Perinat Med. 2005;33:255- 8.
3. Weiner EJ, McIntosh MS, Joseph MM, et al. Neonatal scalp abscess: is it a benign disease? J Emerg Med. 2011;40(5).
4. Goodman SJ, Cahan L, Chow AW. Subgaleal abscess: a preventable complication of scalp trauma. West J Med. 1977; 127:169-172.
5. Nugent NF, Murphy M, Kelly J. Scalp abscess-a cautionary tale. J Plast Reconstr Aesthet Surg. 2010;63:e619-21.f.