

Case Report

Gonococcal ophtalmia neonatorum in a neonateThéra JP¹, Hughes D², Tinley C², Bamani S³, Traoré L³, Traoré J³¹Pediatric Ophthalmologist and Forensic Medicine Doctor, Faculty of Medicine / Institute of African Tropical Ophthalmology, Bamako (Mali)²Pediatric Ophthalmologist, Consultant CCBRT Hospital, Dar Es Salam (Tanzania)³Professor, Department of Ophthalmology, Faculty of Medicine / Institute of African Tropical Ophthalmology, Bamako (Mali)***Corresponding author**

Dr. Japhet Pobanou THERA

Email: therajaphet@yahoo.fr

Abstract: Gonococcal ophtalmia neonatorum is a rare but severe ocular infection. It can compromise the visual prognosis of neonates if an effective treatment is not undertaken without delay. We report a case with copious purulent discharge.**Keywords:** Gonococcal ophtalmia neonatorum

INTRODUCTION

The beginning of the twentieth century saw the advent of screening pregnant females for sexually transmitted diseases prior to the widespread use of prophylactic eye drops. This period was marked by the prevalence of neonatal conjunctivitis which was much higher than today. The World Health Organization (WHO) reports that in 1986, the prevalence rate of neonatal conjunctivitis as the cause of vision loss in children in European institutions was 20%-79% [1]. Ophthalmia neonatorum is a form of conjunctivitis occurring in infants less than 4 weeks of age. Gonococcal ophtalmia neo-natorum is a medical emergency necessitating prompt hospitalization, isolation and parenteral therapy with benzyl penicillin or ceftriaxone. Untreated it can result in rapid corneal ulceration, perforation, blindness and death [2]. Often described as "hyper acute conjunctivitis," the incubation period for Neisseria gonorrhoea may be as short as 1-7 days. Infection is more often bilateral and signs are more severe than nongonococcal infections. Early serosanguinous exudate may be replaced by copious mucopurulent discharge within 24 hours and membranes may be seen. Marked eyelid swelling, injection and swelling of the conjunctiva are common and corneal involvement is seen in 16% of cases. Untreated infections can rapidly progress to corneal ulceration, perforation and endophthalmitis [3]. Since the introduction of Credé's method in 1881, instilling one eye drop of 1% silver nitrate at birth to reduce ophtalmia neonatorum has been practiced worldwide [4]. Culture remains the recommended method for

diagnosis of both Chlamydia trachoma is and Neisseria gonorrhoeae in infants. Nucleic acid amplification tests [5].

CASE REPORT

A 6-day-old female neonate admitted into our office for purulent discharge 2 days later. His mother of 21-year-old delivered via normal vaginal delivery in but did not fully undergo prenatal screening. The neonate did not receive any eye drop after birth. The history of the mother noticed grayish vaginal discharge which was not treated. Ocular exam noticed copious yellowish discharge both eyes, along with swelling and redness. Conjunctival swab was taken and sent for microbiological investigation. The bacteriologist noticed after Gram staining and culture the presence of intracellular gram negative diplococci identified as Neisseria Gonorrhoeae. As we suspected clinically a gonococcal infection, the child was prescribed a treatment before getting the microbiological results. He was treated with intramuscular injection of ceftriaxone 50 mg/kg single dose. In addition, we cleaned his eyes with saline and tetracycline ointment was instilled for 15 days. Three days later the child improved, the discharge and the swelling subsided. The mother was referred to a gynaecologist.



Fig.1: Photograph of the neonate with gonococcal ophthalmia neonatorum

DISCUSSION

Gonorrhoeae is caused by infection with *Neisseria gonorrhoeae* and may involve columnar epithelium in the lower genital tract, cervix, rectum, pharynx and eyes. Transmission is usually the result of vaginal, anal or oral sex. Mothers infected with gonorrhoeae may infect their babies during vaginal delivery, resulting in ophthalmia neonatorum [6]. The current case was the result of untreated genital infection of the mother prior to delivery. Ophthalmia neonatorum is the commonest ocular disease in the newborn, occurring in 2-12% of neonates [7]. Perinatal acquisition of sexually transmitted diseases can have serious consequences for the newborn. Gonococcal infections in pregnant women are estimated at less than 1 percent in developed countries and between 3 and 15 percent in developing regions. Perinatal transmission is estimated to occur in 30 to 40 percent of cases. The incubation period for *N. gonorrhoeae* is 2-5 days (Sometimes longer) with the appearance of symptoms seen from birth to beyond 5 days of age. Beginning with a mild inflammation and serosanguinous drainage, gonococcal ophthalmia soon results in thick, profuse purulent discharge and tense eyelid edema with marked chemosis [8]. A number of studies of the causes of ophthalmia neonatorum from different parts of the world have shown a decreasing frequency of *N. gonorrhoeae* as the etiology of the infection [9]. Treatment of neonatal conjunctivitis should be initially based on the history, clinical presentation and results of smears. Later, as laboratory results become available, specific therapy can be instituted [3]. Gonococcal conjunctivitis can be treated with ceftriaxone 50 mg/kg/day given either intramuscularly or intravenously, or as a single dose treatment of 125mg. Alternative therapies include cefotaxime 100mg intramuscularly or 25 mg/kg given either intramuscularly or intravenously every 12 hours for 7 days [11, 12]. Prenatal screening and treatment of pregnant women, which has been demonstrated to be very effective for the prevention of neonatal gonococcal ophthalmia, is the most effective strategy for preventing

neonatal chlamydial infection [12]. The diagnosis of neonatal conjunctivitis must be made promptly to facilitate rapid initiation of effective therapy. It cannot be overemphasized how primary healthcare workers, obstetrics-gynecology specialists, neonatologists, ophthalmologists and other medical staff should be educated and made aware about the global impact of this disease. Ophthalmia neonatorum is a major preventable cause of childhood blindness and with efforts on all levels; this can be eradicated [13]. The infection in this infant could be prevented if in one hand the mother underwent correct prenatal screening or in the other hand the neonate received antimicrobial eye drop.

CONCLUSION

Gonococcal ophthalmia neonatorum is a rare but grave ocular infection of neonates. It must be prevented through prenatal screening and Crédé's method.

REFERENCES

1. Forbes GB, Forbes GM; Silver nitrate and the eye of the newborn: Crede's contribution to preventative medicine. *Am J Dis Child*, 1971; 121:1-3.
2. Nelson L; Disorders of the conjunctiva. In: Nelson Textbook of Pediatrics, 15th edn. Eds. Behrman RE, Kliegman RM, Arvin AM. Bangalore, Prism Book Pvt. Ltd. 1996; 1779-1780.
3. Suzanne KVP, Smitha J, Tauber A, Stephen FC; Ophthalmia Neonatorum. *J Clinic Experiment Ophthalmol*, 2011; 2:1.0
4. U.S. Preventive Services Task Force. Screening for gonorrhea—including ocular prophylaxis in newborns. In: *Guide to Clinical Preventive Services*. 2nd ed. Washington, DC: U.S. Department of Health and Human Services; 1996; 293-302.
5. Yip PP, Chan WH, Yip KT, Que TL, Kwong NS, Ho CK; The use of polymerase chain reaction assay versus conventional methods in detecting

- neonatal chlamydial conjunctivitis. *J Pediatr Ophthalmol, Strabis*2008; 45:234-9.
6. Bhuiyan MMH, Rokon UM, Farzana A, Tania H, Baker A; *Bangladesh Journal of Medical Science*, 2011; 10 (04): 299-301.
 7. Hammerschlag MR; Neonatal Conjunctivitis. *Pediatr Ann*, 1993; 22 (6): 346351.
 8. Pooja J, Naveen S; "Gonococcal Ophthalmia Neonatorum: A Rare Case Report in this Antibiotic Era". *Journal of Evolution of Medical and Dental Sciences*, 2015; 4 (53): 9276-9278.
 9. Di Bartolomeo S, Mirta DH, Janer M; Incidence of Chlamydia trachoma is and other potential pathogens in neonatal conjunctivitis. *Int J Infect Dis*, 2001; 5:139.
 10. Brown ZA, Selke S, Zeh J, Kopelman J, Maslow A; The acquisition of herpes simplez virus during pregnancy. *N Engl J Med*, 1997; 337: 509-515.
 11. Lepage P, Kesteln P, Bogearns J; Treatment of gonococcal conjunctivitis with a single intramuscular injection of cefotaxime. *J Antimicrob Chemother*, 1990; A: 23-27.
 12. Margaret R. Hammerschlag; Chlamydial and Gonococcal Infections in Infants and Children. *CID*, 2011; 53 (3):99-101.
 13. Palafox SKV, Jasper S, Tauber, Allyson D, Foster SC; Ophthalmia Neonatorum. *J Clinic Experiment Ophthalmol*, 2011; 2:119.