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OCULAR MANIFESTATION IN PERTUSSIS- A CASE REPORT

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ABSTRACT

Pertussis or whooping cough is an infection of the respiratory tract caused by Bordetella Pertussis. It most commonly affects infants and young children. For the prevention of the disease Diphtheria Pertussis Tetanus vaccine is available. But in spite of the vaccine Pertussis has been reported. These individuals have paroxysms of cough and can have ocular manifestations like sub conjunctival hemorrhage, lid ecchymosis and retinal hemorrhage.

KEYWORDS: Pertussis, subconjunctival haemorrhage, whooping cough.

INTRODUCTION

Pertussis also known as whooping cough is a respiratory illness that mainly affects the infant and young children. The first case was diagnosed in the early 16th century. Though the Diphtheria Pertussis Tetanus (DPT) vaccine is available, Pertussis is still an important cause of infant mortality worldwide and is of great concern. According to one of the studies done by the World Health Organization it showed that in the year 2010 nearly 18 million cases of Pertussis occurred worldwide of which 94 % were from the developing countries. In the year 2019, 54,368 cases of Pertussis were reported in India. Even after the DPT vaccine, occurrence of the infection has been reported. In this study we have a child who had ophthalmic complaints and was later diagnosed and concluded to have whooping cough.

CASE REPORT

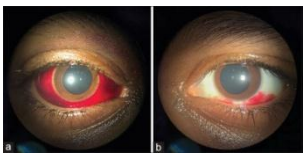
A 6 year old boy was brought to our OPD by his mother and he complained of redness of both his eyes which was painless and progressive in nature since 15 days. He also gave a history of paroxysms of cough along with vomiting and mild grade fever. There was no history of trauma, blood dyscrasias, coagulopathy or any other systemic illness. When further

enquired about his vaccine status, all the vaccines were taken according to the schedule prescribed by the WHO. The recommended 5 doses of DPT vaccine were also received and the last DPT vaccine was given at the age of 5 years.

On examination, the visual acuity was 6/6 in both the eyes along with upper and lower eye lid ecchymosis. Slit lamp evaluation showed sub conjunctival haemorrhage in both the eyes. But the anterior segment was unremarkable. The pupils were round and reacting well to light.

Figure 1: showing lid echymosis in both the eye.

Figure 2 showing 360° sub conjunctival haemorrhage in the right eye and sub conjunctival haemorrhage inferiorly in the left eye.



A dilated fundus examination was done and was normal. Examination of the blood parameters revealed an elevation of the total white blood cell count with a normal platelet count. Chest X- ray was normal. After discussing with the pediatrician a possible diagnosis of Pertussis was made based on the history of paroxysmal cough for more than 2 weeks along with post- tussive vomiting. A nasopharyngeal swab was taken and the diagnosis was confirmed positive with a polymerase chain reaction (PCR)test. The patient was immediately started on oral Azithromycin by the pediatrician. There was resolution of the cough along with the lid ecchymosis and SCH.

DISCUSSION

Pertussis also known as whooping cough is a respiratory tract infection caused by a gram negative bacteria Bordetella Pertussis. In a recent study it was shown that there has been a spike of the disease even among the vaccinated individuals due to the waning of the vaccine induced immunity. This sudden spike could be attributed to various factors like increased awareness among the population, increased reporting of the cases and along with that the introduction of the PCR testing methods.

Pertussis causes infection that is localized to the respiratory tract and it very rarely disseminates. Bordetella Pertussis secretes various toxins like the Pertussis toxin, adenylate cyclase toxin, tracheal toxin. These toxins primarily affects the respiratory cilia resulting a host immune response causing irritation, increased secretions and ultimately spells of cough. The infection caused by Pertussis can be divided into three stages. : Catarrhal, paroxysmal and convalescent. During the catarrhal phase which is the first phase which starts 1 – 2 weeks after the exposure, the child usually presents with rhinorrhoea, mild cough, malaise, low grade fever. This phase is quite difficult to differentiate from an acute viral upper respiratory tract infection and this lasts for 7 to 14 days.

The next phase is the paroxysmal phase. During this phase the child has multiple bouts of cough during a single expiration which is followed by a vigorous inspiration. In infants and children where the caliber of the trachea is very narrow this is associated with a characteristic whoop sound and hence called the whooping cough. This phase leads to low lung volumes and is often associated with post- tussive emesis and exhaustion.

The third or the last phase is the convalescent phase. This phase occurs after 2 to 3 months and the severity of the cough gradually declines during this phase.

According to the centers for disease control and prevention, a case of Pertussis can be confirmed if a patient has cough for at least 14 days duration and at least one of the following features : a paroxysmal cough, inspiratory whoop or post-tussive vomiting. Confirmation can be done using laboratory test by either culture or PCR assay. The antibiotics effective are azithromycin, clarithromycin, erythromycin and trimethoprim/ sulfamethazole.

Complications most commonly seen during the severe paroxysms of cough are sub conjunctival haemorrhage, echymosis of the lid, syncope, hernias, intracranial haemorrhage, fracture of the rib, urinary incontinence and stroke due to vertebral artery dissection which is very rare though.

CONCLUSION

This study was mainly taken up to emphasize on the fact that cases with SCH and lid echymosis along with cough, a diagnosis of whooping cough should be kept in the mind irrespective of the fact that the child has been vaccinated. Early detection and prompt treatment can prevent various life threatening complications.

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