

A RARE CASE OF RECURRENT RESPIRATORY PAPILLOMATOSIS MASQUERADING AS ASTHMA IN A 3 YEAR OLD BOY FROM ADAMAWA STATE, NORTH-EASTERN NIGERIA

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Abstract

Recurrent respiratory papillomatosis (RRP) is not a regular disease of children. This disease could mimic asthma features in children. The authors report the case of a 3 year-old boy with difficulty in breathing, stridor and hoarseness of voice that did not respond to conventional asthmatic management. Inspiratory stridor, respiratory distress, diffuse rhonchi, tachycardia and cardiomegaly were found on examination. X-ray of the neck showed marked laryngeal widening secondary to a distal obstruction. Laryngoscopic examination showed laryngeal papillomas around the vocal cords, which led to a diagnosis of RRP. He was subsequently referred to an appropriate health center for better care after securing his airway.

Introduction

Approximately 6.2 million adolescent are diagnosed annually with Human papiloma virus (HPV) particularly in developed countries. (1) Literature search in developing countries on the annual incidence of HPV showed dearth of statistical information. Likely explanation for this could be the weak health information management systems associated with developing countries. Not only does HPV cause genital condyloma, it is also associated with a rare glottal or laryngeal papillomatosis, a condition called recurrent respiratory papillomatosis (RRP). (1-3) Children with RRP may present with features of severe respiratory distress mimicking asthma, and could be fatal without medical intervention. The HPV responsible for RRP in 4.5 per 100,000 children is an icosahedral double stranded DNA that is contracted sexually in most cases. (1, 2) There are arguments as to whether RRP in children is sexually transmitted or not. Whereas, some authors have found that children exposed to genital warts during delivery were later diagnosed with RRP, others did not report this relationship. (1-2) Furthermore, RRP has been reported in children that were not exposed to HPV via vaginal child birth. (2) De villiers et al, (1) in 2004 has published that HPV could be found on normal skin, therefore children in close contact with these individuals could have RRP.

Even though RRP is rare, most cases are found on the larynx and very rare does it involve the trachea and the lung. (4) Progression of RRP in children is influenced by the child's cell mediated immunity. If the cell mediated immunity is not compromise, then nearly all cases of RRP may resolved within 2–3 years. (1-4) We describe a case of RRP masquerading as asthma in a 3 year old boy from Adamawa state, North-Eastern Nigeria.

Case details

The patient is a 3 year old boy who presented with a month history of progressive difficulty in breathing, stridor and hoarseness of voice that responded poorly to bronchodilator and steroid therapy. Physical examination revealed inspiratory stridor, respiratory distress (subcostal and intercostal recession) and diffuse rhonchi. His pulse rate is 140 beats/minute (tachycardia), blood pressure of 90/60 (mmHg), apex beat at 5th intercostal space mid-clavicular line

(cardiomegaly). X-ray of the neck and chest revealed marked laryngeal widening secondary to a distal obstruction (Fig. 1.) and cardiomegaly. Laryngoscopic examination showed laryngeal papillomas around the vocal cords. A diagnosis of RRP was then made, but due to lack of relevant facilities to manage the patient, he was referred to an appropriate nearby health center for better care after securing his airway



Fig 1: X-ray of the neck (black arrow points to marked laryngeal widening and the purple arrow shows site of upper airway obstruction).

Discussions

Recurrent respiratory papillomatosis is simply a benign wart caused by HPV that is similar to the pathology found in condylomata acuminata. (2) Children less than 5 years are mostly affected; however, the median age for RRP is 3 years similar to the finding in recent case. (5, 6) Of the children with RRP, more than half of them had mothers with vaginal warts during parturition; in fact, the risk for RRP is about 1 in 500 vaginal births in mothers with active condylomata. (2) Despite this projection, the incubation period and subsequent development of RRP remains unclear, even though it can be as short as 6 months. (1, 2) Although the mother of the current case had no vaginal wart at the time the child was delivered, this has not totally shielded him from contracting RRP. This is because HPV can also be found on normal skin of healthy adults. Therefore, children in close contact with these asymptomatic individuals are prone to contracting HPV. Because only in 60% cases was there concordance of HPV in mother-child pair, it therefore means that any adult and not necessary the mother of the child may infect a child with HPV. (1) Recurrent respiratory papillomatosis are mostly caused by HPV 6 and HPV 11 among other serotypes. (4-6) The papillomas of RRP are seen on the respiratory tract of children possibly due to the viral affinity for mucosal surfaces.

Recurrent respiratory papillomatosis is most often misdiagnosed for asthma because cases might present with stridor, cough, hoarseness of voice, dyspnoea and rhonchi. These features were found on present case coupled with features of cardiomegaly that led to the initial suspicion of asthma. Features of cardiomegaly may be suggesting cardiac compensatory mechanisms to chronic hypoxia. However, contrary to most cases of asthma the current case did not improve significantly with the administration of bronchodilator and steroids. Laryngoscopic examination showed papillomas around the vocal cord of the patient. This finding concurred with the observation of Kashima et

al, (7) in 1993 where the vocal cord region was adjudged to be the commonest site for RRP. Of note is that there are no available serologic tests to assist in the diagnosis of HPV infection; however, a simple laryngoscopic examination of the larynx as was conducted on index patient is sufficient to make the diagnosis of RRP. (1, 2, 4, 5)

Endoscopic surgical removal of the papillomas is one modality of treatment especially if signs of obstruction were progressive as was seen on index patient. (4-6) Lack of facilities made us to refer index case to a nearby health centre for surgery after securing his airway. Another modality of treatment is the use of carbondioxide laser, and photodynamic therapy using targeted dyes and bright light to excise the lesion. (4-6) Hereto, expertise is needed which is also lacking in our facility. Medical management using cidofovir have been tried with little success, nonetheless, spontaneous resolution of the papillomas has been documented. (1-4) Regardless of the treatment used, RRP may still reoccur, however, malignant transformation is rare, probably due to the low risk of cancer associated with HPV serotype 6 and 11. (1, 2)

Conclusion

We have demonstrated that RRP, a rare condition could be asthma like in presentation; therefore, asthmatic children that are not responding to appropriate therapy should be evaluated for RRP among other conditions.

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