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Changing indications for paediatric tracheostomy in a Nigerian tertiary hospital

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Abstract

Background: Paediatric tracheostomy is a common surgical procedure whose indications are changing. This study seeks to establish updated data on the indications, outcome and complications of paediatric tracheostomy as seen in a Nigerian tertiary health institution.

Methods: A retrospective review of medical records of all paediatric patients who had tracheostomy at the University Of Benin Teaching Hospital Benin City between January 2004 and June 2010.

Results: A total of 49 children, 25 (51%) females and 24 (49%) males had tracheostomy during the period under review. Their ages ranged from 11 months to 13 years with mean age of 3.5 ± 2.7 years. The indications for tracheostomy were upper airway obstruction secondary to foreign body aspiration 40 (51.6%), infections in 8 (16.3%) and

prolonged intubation [1 (2%)]. When compared with a similar study 2 decades ago, a change in the indication for tracheostomy is noted and this was statistically significant ($p < 0.001$). A large proportion of the tracheostomies were done as emergency procedures while 48.1% were elective. The complications encountered were apnoea [8 (16%)], accidental decannulation (extubation) [1 (2%)], difficult decannulation [4 (8.1%)] and tracheocutaneous fistula [1 (2%)].

Conclusion: The main indication for paediatric tracheostomy is relief of upper airway obstruction secondary to foreign body aspiration.

Keywords: Paediatric tracheostomy, Indication, Emergency, Upper airway obstruction

Introduction

Paediatric tracheostomy is a common surgical procedure which involves the creation of a surgical opening on the anterior aspect of the trachea which is usually maintained patent by means of a tube¹. There are different indications for tracheostomy and are classified as; relief of upper airway obstruction, protection of the tracheobronchial tree, ventilatory support and as adjunct to procedures in the head and neck region. It is characterised by significant

morbidity and mortality. The indications for paediatric tracheostomy are changing the world over. The commonest indication for tracheostomy in the 1970s was upper airway obstruction due to acute inflammatory conditions such as epiglottitis, diphtheria and laryngotracheobronchitis². The most common indication currently in the developed world is ventilatory support. This may not be unrelated to the availability of

more potent antimicrobials and potent vaccines which has led to the eradication of such conditions as diphtheria. The commonest indication for this procedure would vary depending on the prevailing health situation in that particular region. This study seeks to find out the current indications for paediatric tracheostomy against the backdrop of a previous review two decades ago.

Materials and Methods

This is a retrospective review of medical records of all paediatric patients who had tracheostomy at the University Of Benin Teaching Hospital, Benin City, Nigeria between January 2004 and June 2010. Information extracted included age, gender, indication for the tracheostomy, outcome and complications encountered. The data was analysed using SPSS 16 statistical package and compared with a similar published work undertaken in the same department by another researcher two decades ago (1976-1982). The statistical test of significance of the differences in results obtained from the two study periods was carried out using the Chi square test.

Results

A total of 49 children had tracheostomy during the period under review. Their ages ranged from 11 months to 13 years with a mean age of 3.5 ± 2.7 years. There were 25 (51%) females and 24 (49%) males with a male: female ratio of 1:1. The commonest age group affected was the 0-5 years category. The indications for tracheostomy were upper airway obstruction secondary to foreign body aspiration 44 (81.6%), infections in 8 (16.3%) and prolonged intubation 1 (2%). A large proportion of the tracheostomies [45 (91.9%)]

were done as emergency procedures while 4 (8.1%) were elective. The complications encountered were apnoea [8 (16%)], accidental decannulation [1 (2%)], difficult decannulation [4 (8.1%)] and tracheocutaneous fistula [1 (2%)].

The foreign bodies in the upper respiratory tract in these children ranged from fish bone in 24 patients, metallic foreign bodies in 3, seeds in 3, glass fragment in 1 patient, melon husk in 1 patient to plastic part of toys in 8 patients. The acute onset of respiratory distress prompted the early presentation of the children to hospital within hours of aspiration of the foreign body. There was however delayed presentation in 2 of the children. One of them presented after 3 months of unremitting intermittent cough due to orange seed aspiration for which she was being treated as a case of asthma in a peripheral hospital, she presented in respiratory distress for which emergency tracheostomy was carried out. This was accompanied by marked improvement and on decannulation, the difficulty with breathing resurfaced necessitating a reinsertion of the tracheostomy tube. A bronchoscopy carried out did not discover any foreign body in the lower respiratory tract. A repeat direct laryngoscopy revealed the mucus coated orange seed wedged between the subglottis and the upper portion of the tracheostomy tube. The intermittency of her symptoms could be explained by the movement of the seed up and down the tracheobronchial tree with respiratory efforts. She was subsequently decannulated successfully a week later and has since been discharged from the services of the Department. The second child, (spring in the larynx) was an incidental finding following a radiological evaluation of the larynx for chronic cough. He had a preliminary