

BRIEF COMMUNICATION

Medical outreach for correction of orofacial clefts palate in a rural community in Nigeria

AD Nwosu* and HA Ezike

*Correspondence email: adnwosu@yahoo.com

INTRODUCTION

Cleft lip (cheiloschisis) and palate (palatoschisis) are the most common craniofacial abnormalities with an worldwide incidence of 1:700-800 live births.¹ About 500 children with cleft lip and palate are born in Nigeria annually with a Nigerian study reporting an incidence of 1 in 2703 live births.² The child with orofacial clefts often has to contend with psychosocial, speech, feeding, hearing and dental problems.³ Corrective surgery restores appearance and function, making it possible for patients to live normal productive and social lives. Holistic care for the child with orofacial cleft involves several healthcare specialists (plastic and reconstructive surgeon, maxillofacial surgeon, anaesthetist, speech therapist, orthodontist, otorrhinolaryngologist, audiologist, psychologist, psycho-therapist, nurse and social worker), beginning shortly after birth and continuing into adolescent life.

Other congenital abnormalities, commonly involving the heart and kidneys, may co-exist with cleft lip and palate, especially in association with isolated cleft palate. Associated syndromes such as the Pierre-Robin, Treacher-Collins and Downs may predispose to airway problems during anaesthesia. Otherwise difficult laryngoscopy is usually limited to children with bilateral clefts, retrognathia (receding jaw) and young infants.^{4,5}

The cost of medical care for a child with cleft lip/palate in Nigeria is usually in excess of one hundred thousand naira (640 US\$, 400 GB£) and can reach five hundred thousand naira.

MEDICAL MISSIONS AND OUTREACH

The huge financial burden of cleft lip and palate is currently borne in large part by charitable organisations and specialist volunteers through sponsored International Health Missions, local outreaches and free healthcare at designated centres. Replacing the traditional international medical missions with local outreach services has been deemed to be more efficient and cost-effective.

Despite the environmental and logistical limitations of many host rural health facilities, an outreach service provided by volunteers was felt to be viable. Volunteers from the National Orthopaedic Hospital in Enugu embarked on a two-day free surgical outreach mission for correction of orofacial clefts in Nsukka, Eastern Nigeria.

METHODOLOGY

Publicity

Several weeks prior to the arrival of the medical mission, the mass media was freely employed to create awareness through television, radio and announcements, targeted at the local councils within the vicinity of the medical mission base health facility. Religious organisations, women's groups and traditional rulers were actively involved in the publicity exercise and mobilization of the local populace. Handbills and posters depicting patients with orofacial clefts, before and after repair, were distributed and displayed at strategic places, with information on the venue and time of the outreach programme.

Assessment of the base health facility

A week prior to the start of the programme, a representative from each of the anaesthetic, plastic surgery and perioperative nursing teams visited the rural hospital to assess its facilities for safe provision of anaesthesia and surgery. We found a spacious patient waiting room and small number of postoperative recovery beds, in a vast compound that was generally clean. The operating room was quite large with a clearly demarcated utility section, scrub-up section, a good operating table and a single electrical socket point. A patient examination couch was available to use as a second operating table.

There was no theatre operating light or recovery room and no stools, fans or air-conditioner. There was no sterilizing equipment, save for a kerosene stove, and no sterile supplies or surgical instruments. There was no oxygen source, patient monitoring, suction

Summary

Cleft lip and palate is a common congenital malformation which can have a profound psychosocial and functional impact on a child. International charities provide multidisciplinary care for this condition that would otherwise be beyond the reach of the patients, particularly in resource-poor communities. We piloted an outreach service for cleft lip and palate surgery from within our own country. Thirteen patients underwent corrective procedures in the rural base facility, with one minor intraoperative airway incident recorded.

Dr AD Nwosu

Consultant Anaesthetist
Department of Anaesthesia
National Orthopaedic Hospital
Enugu, Nigeria

Dr HA Ezike

Consultant Anaesthetist
Department of Anaesthesia
University of Nigeria Teaching
Hospital
Enugu, Nigeria

apparatus, Ambu-bag, anaesthetic machine, laryngoscope or other anaesthetic accessories and supplies.

The medical mission

The medical outreach team consisted of a consultant anaesthetist assisted by two nurse anaesthetists, four plastic surgeons, four perioperative nurses, two pharmacists, with a full compliment of anaesthetic equipment and accessories, surgical instruments, sterile materials and supplies.

Eighteen patients presented for the corrective surgery. Screening took place in the open patient waiting hall and included an anaesthetic assessment. Infants and patients requiring palate repair were excluded, since the available equipment and personnel in the rural hospital could not safely cater for the patients after the medical mission had departed. Provision was made for all the excluded patients to assemble at the rural hospital at a later date for free transportation to the National Orthopaedic Hospital, Enugu where surgery was offered free of charge.

Four of the thirteen patients did not observe pre-operative fasting and their surgery was delayed accordingly. Standard anaesthetic procedures were observed in all cases and monitoring included ECG, non-invasive blood pressure and pulse oximetry. Each patient was weighed and intravenous access was secured before the commencement of anaesthesia. Propofol or ketamine was used for induction and maintenance of general anaesthesia, while pancuronium bromide was used to facilitate controlled ventilation with oxygen-enriched air following endotracheal intubation. Lidocaine (1%) with adrenaline (1:50,000) was used for local infiltration in all the patients. Intravenous paracetamol and tramadol were administered to all patients towards the end of surgery.

RESULTS

Thirteen ASA 1 patients between the ages of 2 and 32 years underwent repair of orofacial clefts; six (46%) were done under general anaesthesia while seven (54%) were done under local anaesthesia. There were ten males (77%) and three females (23%). Five of the patients (38%) were below 14 years. Table 1, shows the details of the surgeries performed during the outreach mission.

Table 1. Details of surgical procedures performed

Type of Surgery	No. of patients
Unilateral complete cleft lip repair	4
Unilateral incomplete cleft lip repair	5
Lower lip cleft repair	1
Bilateral incomplete cleft lip repair	1
Revision of bilateral cleft lip	1
Revision of Unilateral cleft lip	1
Total	13

One patient who received local anaesthesia and sedation suffered a desaturation due to blood and secretions causing laryngospasm. She was quickly intubated with a cuffed endotracheal tube and subsequently had controlled ventilation. All the other patients had SaO₂ greater than 96% throughout the surgery. In the recovery room, one patient had significant operation site bleeding which was controlled with firm pressure. All patients went home after recovery on the same day of surgery.

DISCUSSION

A major challenge in a medical outreach missions such as this is the fact that the patient has their first contact with the surgeon and anaesthetist on the day of surgery, allowing no time for detailed history taking, examination or investigation. Among the five patients excluded, were four cleft palate patients - one had Pierre Robin syndrome and one had Treacher Collins syndrome.

Environmental and safety considerations partly dictated the anaesthetic technique used. The lack of an anaesthetic machine made total intravenous anaesthesia (TIVA) and local anaesthesia the preferred anaesthetic options. Direct access to our dedicated pharmacy unit provided a reliable supply of propofol, suxamethonium and pancuronium. Eight patients (62%) were above 14 years of age, which contrasts with the younger population seen at our base teaching hospital, where there were only 3 adults in a series of 107 cleft patients (0.03%).⁶ This may reflect the stigma associated with cleft lip and palate which makes sufferers withdraw from society and hide away in the villages, refusing even to attend the base hospital to access free surgical care.

The majority of the older patients underwent local anaesthesia. In an audit of a similar medical mission by an international charity, only 12.9% of the cases were done under local anaesthesia, the remainder undergoing general anaesthesia.⁷ Their series reflected a younger patient population with 83% 14 years or below. Our outreach recorded a minor airway incident in theatre and an insignificant surgical site bleed during recovery. The reported incidence of death or severe complications is low in medical missions for cleft palate surgery; out of 6,037 patients who were operated upon in different locations around the globe by one medical mission, there was one death and seven admissions to the intensive care unit, while fifty-four patients had to be re-anaesthetized to manage complications, predominantly surgical haemorrhage and airway problems.

Factors that may influence morbidity in outreach programmes include the advanced stage of the surgical condition, rapid case turnover, fatigue amongst volunteers, team communication problems, suboptimal recovery care, non-availability of an anaesthetic machine and limited monitoring capacity. In our outreach mission discontent over volunteers' welfare was evident, resulting in one of the team members opting out after day 1. Volunteer fatigue and team communication problems were further evident on day 2 and it was felt that a third day could have left the team understaffed. Fisher et al have cited good communication, volunteers' welfare and efficient conflict resolution as critical in such missions.⁷

CONCLUSION

Free medical outreach missions are exciting but challenging. Volunteers must contend with the realities inherent in providing healthcare in rural communities of developing countries. Adequate preparation should include a survey/assessment of the base health facility and a rigorous system for patient selection. Preoperative anaesthetic assessment of individual patients is necessary for safe anaesthesia and surgery.

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