Neonatal cleft lip repair in babies with breastfeeding difficulties at Polokwane Mankweng Hospital Complex

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Background. A cleft lip (CL) is a congenital abnormality resulting from failure of union of the medial and nasal prominences with the maxillary prominence during embryonic development. CL may be classified as incomplete, complete, unilateral, bilateral or median. It may be associated with a cleft alveolus or a cleft palate. Definitive correction of a cleft lip is by surgery. The birth of a cleft lip and cleft palate (CLP) baby is associated with witchcraft and ancestral spirits. The parents, particularly mothers, are stigmatised.

Objective. To repair CLs in neonates with difficulties in breastfeeding.

Methods. Non-syndromic term neonates referred to Polokwane Mankweng Hospital Complex (PMHC) from primary and secondary hospitals with CLP and difficulties in breastfeeding were prospectively admitted to the neonatal unit. Our breastfeeding team supervised and assisted them with breastfeeding. The neonates whose breastfeeding was found to be unsatisfactory were considered for neonatal CL repair. Those who breastfed adequately were booked for later lip repair as per the rule of tens and discharged.

Results. From June 2009 to March 2012, 60 children with CLP were referred to PMHC, including 36 neonates. Of these, 23 neonates were unable to breastfeed satisfactorily and were operated at a median age of 9 (range 3 - 28) days. The median weight was 2.8 (1.8 - 3.7) kg. The median haemoglobin was 13.1 (11.5 - 16) g/dL.

Conclusion. Neonatal CL repair is an alternative for those with breastfeeding difficulties. Eagerness to breastfeed increased following the lip repair with subsequent improvement in maternal confidence and interaction with the baby. At follow up, weight gain was above the 50th centile on the road to health charts. Early surgery prevents exposure of CL to the public with highly positive possible outcome of decreasing the potential for stigmatisation.

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A Medline search did not reveal any published neonatal CL repair series from Africa.
Patients were transported to the operating theatre in a warm incubator. Intravenous access was established on the ward or just before intubation. Peri-operative monitoring was with eletrocardiogram, pulse oximetry, non-invasive blood pressure, precordial stethoscope and core temperature. Volatile induction and maintenance of anaesthesia was used on all patients. At the end of surgery, the oropharynx was inspected, and throat swabs were taken and milk formulae when fully awake, using medicine cups, cups and spoons. On the second day after operation, the dressings were removed and lip care was initiated.

Data were expressed as median values and range using Epi-Info (CDC, USA).

Results
From June 2009 to March 2012, 23 neonates were included and had neonatal cheiloplasty. There were 11 male and 12 female patients. The median age was 9 (range 3 - 28) days. The median weight was 2.8 (1.8 - 3.7) kg. The median haemoglobin was 13.1 (11.5 - 16) g/dL. Median birth position was 2 (1 - 5). There were 14 CLP, 5 bilateral CLP, 3 CL and alveolus, and 1 midline CL.

Median age of the mothers was 21 (16 - 38) years. Seventeen (72%) of the mothers were single and the rest were married.

Complications
Two patients had wound dehiscence. One was minor and did not require surgical intervention. The other was a major dehiscence that required revision.

Outcome
Breastfeeding was restored to all 23 patients (Fig. 2). Mothers seemed very pleased at the sight of their repaired CL babies. There was increased potential for bonding as shown by the more natural cuddling, eagerness to engage the baby through increased baby talk and continuous eye contact. Early surgery prevented exposure of the CL baby to the public, decreasing the risk for stigmatisation. At follow up, weight gain was above the 50th centile on the road to health charts. All but two patients were discharged on day 4 after the operation.

Discussion
The patients were referred to PMHC because they had difficulties in breastfeeding. Breastfeeding difficulties in CLP babies have been reported widely in the literature.[16][11] The difference in our study population was that we did not have access to special feeding bottles and palatal obturators. In addition we did not have CLP support groups, hence the mothers in our study lacked psychosocial support. Solnit[12] and Fajardo[13] described that during pregnancy, mothers create a mental picture of the infant (a normal and healthy infant). If the mother then delivers a child with a CLP, is associated with poor nutrition, failure to thrive and poor infant-maternal bonding.[12][13][14] Advances in neonatology, paediatric anaesthesia and surgery have made it possible to perform CL surgery in the neonatal period. Many centres in the developed world have published series of neonatal CL repair.[4] However, a Medline search did not show any publications on neonatal CL repair from Africa. We did not underestimate the complexity of neonatal cheiloplasty. In this study pre- and postoperative monitoring were done by the neonatalogists. During the operation we minimised heat loss by operating in a warm incubator occasionally supplemented by a Bair hugger heating blanket.

Rapid induction and rapid-recovery anaesthetic was used on all our patients. This was to facilitate return of protective reflexes before a neonate was discharged from the recovery bay in theatre.

The technique of repairing CL is the same in the older child as it is in the neonate. The development of fine surgical instruments, small size sutures, loupes precision haemostasis (especially with the Colorado diathermy needle) and the use of vasoconstrictors have made CL repair in the neonate easier.

This study sample of 23 neonates without mortality and minimal morbidity has convinced us that neonatal cheiloplasty is safe[8] although the smallest patient weighed only 1.8 kg, owing to advances in neonatology, paediatric anaesthesia and surgery. Low weight was less of a contraindication to surgery. Postoperative breastfeeding was good, as has been observed in other studies.[30] Cuddling and eye-to-face interaction noticeably increased. Mothers showed more interest in their babies, a good sign of child maternal bonding.

Conclusion
Neonatal CL repair is an intervention for CL neonates with breastfeeding difficulties. Breastfeeding ability was restored, with subsequent improvement in maternal confidence and interaction with the baby. At follow up, weight gain was above the 50th centile on the road to health charts. Early

Fig. 1. Pre-operative cleft lip.

Fig. 2. Cleft lip immediately post operation.
surgery prevents exposure of a CL baby to the public, decreasing the potential for stigmatisation.

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References