

Experiences with unilateral cleft lip in a humanitarian mission in Mali

H Traore¹
 Y Benchenam²
 S Letouze³
 H Benateau²

¹Department of Maxillofacial Surgery, Mother and Child Hospital Le Luxembourg, Bamako, Mali

²Department of Maxillofacial Surgery, Caen University Hospital, Avenue Côte de Nacre, 14033 Caen Cedex, France

³Department of Child Surgery, Caen University Hospital

Several criteria determine the choice of technique for unilateral cleft lip and nose repair.^{1,2} The aim of the procedure is to correct the malformation with minimal scarring. In humanitarian missions cleft lip and nose repair is often performed on patients who have a relatively high risk of keloid scarring as a result of skin colour.³ The ultimate goal of such missions is to promote autonomy of local medical and paramedical teams, so that the visiting team is no longer needed; this is aided by utilising the simplest, most reliable and most reproducible surgical techniques. Medium- and long-term follow-up of patients undergoing surgery is crucial for outcome assessment.^{4,5} The 'once-off' nature of missions and large distances between patients and health care facilities are major obstacles to the evaluation of results.⁶ In view of limited data on the surgical outcome of unilateral cleft lip and nose repair in humanitarian missions we reviewed the outcome in those of our series of patients who were seen again at least 1 year after surgery.

Methods

We reviewed the data on all 55 patients who underwent cleft lip and nose repair at the Luxembourg Mother and Child Hospital, Mali, between 2001 and 2005. Of these patients, 19 were seen again more than 1 year after surgery.

Two surgical techniques were used during the study period. The Millard technique was used for 9 of these patients, who underwent surgery between 2001 and 2003. Because of personal evolution, the Tennison technique was used for 10 patients who underwent surgery between 2004 and 2005. The mean age of the patients in the Millard group was 7 years (range 7 months - 26 years) and that of the patients in the Tennison group 3 years (range 6 months - 14 years).

Surgery was carried out by the same surgeon (HB) in both groups. The incision differed between the two groups, but the technique of surgical closure was equivalent with respect to mucosal, muscular and dermal layers, making it possible to use non-resorbable 6/0 for the skin sutures, which were not under tension. In all cases a wide dissection was performed under the premaxillary periosteum on the cleft side.

All interventions were carried out under general anaesthesia. Post-surgical treatment was simple, with systemic antibiotic treatment for 1 week and daily careful elimination of scabbing, disinfection with polyvidone iodine, and application of Vaseline. The nasal cavities were also cleaned with saline solution. The sutures were taken out on the 7th day after surgery.

Follow-up

All patients included in this study because they had been seen again at least 1 year after surgery were considered to have stable scar tissue. Scar tissue was classified into two types, normal or keloid, according to its appearance. A keloid scar (thick fibrous tissue extending beyond scar margins) was present in 2 of 9 patients (aged 6 and 12 years, Figs 1 and 2) operated on using the Millard technique versus 2 of 10 (aged 2 and 6 years, Figs 3 and 4) in whom the Tennison technique was used.

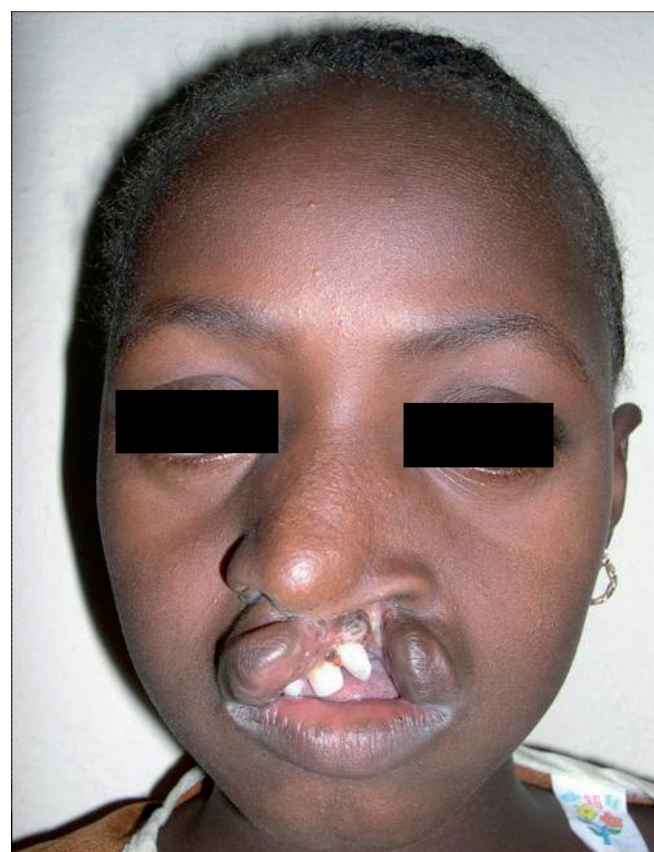


Fig. 1. Twelve-year-old patient with cleft lip and palate on the left side.

All the children who developed keloid scars were over the age of 2 years at the time of surgery. There was no difference in the prevalence of keloid between the two groups, but the small



Fig. 2. Result with a keloid scar 2 years after cleft lip and nose repair as described by Millard.



Fig. 3. Twenty-six-month-old patient with an incomplete cleft lip on the left side.



Fig. 4. Result with a keloid scar 1 year after cleft lip and nose repair as described by Tennison.

sample size could have introduced bias and masked a possible difference. It was noteworthy that the C flap was prominent and unsightly in patients who developed keloid scars after a Millard procedure.

Discussion

The small number of participants and the uncontrolled nature of this study mean that no specific recommendations can be made. However, in the absence of control data follow-up from clinical studies may be informative and it is to be hoped that it will stimulate more research. Humanitarian surgery missions are generally episodic, with no possibility of medium- or long-term post-surgical follow-up. In this study, carried out over 5 consecutive years at the Luxembourg Mother and Child Hospital in Bamako, Mali, we reviewed patients who were seen again at least 1 year after undergoing cleft lip surgery. We found that all children who developed keloid scarring in our series had been over the age of 2 years at the time of surgery. No difference was found between the two techniques in terms of the percentage of cases with keloid scarring. Holtmann and Wray⁷ noted a greater frequency of keloid scars with the Millard technique. The Tennison technique may result in a white lip that appears too high owing to the equilateral triangle traced on the cleft side of the lip. The latter is minimised if the primary surgery is carried out over the age of 2 years, when labial growth is already well advanced. Indeed, the upper lip attains 80.2% of its definitive cutaneous height by the age of 1 year, and 94.1% of that height by the age of 5 years.⁸

Currently the most popular method for unilateral cleft lip repair is Millard's rotation-advancement method.⁹ The Tennison technique for cleft lip and nose repair may be suitable for the treatment of unilateral cleft lip or cleft lip and palate in patients during humanitarian missions, not only because of the absence of the scarring associated with the C flap but

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also because the technique is reproducible, easy to follow and easy to teach. Millard's technique must be adapted to the clinical form of the cleft, which often requires readjustment during surgery, particularly involving the C flap. It may therefore be best reserved for surgeons with much experience in the treatment of clefts. Because of its technical simplicity and reproducibility the Tennison technique may facilitate the training of local teams;^{10,11} however, this requires confirmation, and large randomised controlled studies are needed to determine which technique for cleft lip and nose repair should be recommended to humanitarian missions.

Correspondence and reprint requests to H Benateau (benateau-h@CUH-caen.fr).

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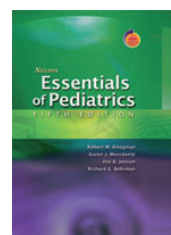
Saunders · Published August 2005

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