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Management of Cleft Lip and Palate at Mother- Child Hospital « Luxembourg » Of Bamako (Mali)

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Abstract **Original Research Article**

Introduction: The severity of cleft lip and palate depends on the extent of the malformation, alveolar bone involvement and association with other severe malformations (cardiac, craniofacial, upper limb and lower limb). etc. The purpose of this work is the overall assessment of the management of cleft lip and palate in Mali at the Mother-Child Hospital "Luxembourg" between October 2001 and September 2012 in a context of humanitarian surgery. ***Material and method:*** This is a retrospective and prospective study over a period of 11 years (October 2010 and September 2012) involving 435 cases of cleft lip and palate collected at the maxillofacial surgery department of the Mother- Childt Hospital. "Luxembourg" of Bamako. ***Result:*** The age of our patients varies from 4 months to 80 years; with an average age of 64.86 months and a standard deviation of 77.84. The unilateral cleft lip was the most common anatomical form (316 cases), all our patients experiencing surgery. The Tennisson technique was performed in 235 cases within 5 days. We observed 8 cases of labial disunion, 4 cases of palatal fistula; no case of death was recorded during the period of our study. ***Conclusion:*** Nowadays Palate clefts are common congenital malformations and can be isolated or associated with other abnormalities, its catch is multidisciplinary, which extends from birth to the end of adolescence, several surgical techniques to correct this disfigurement of the face.

Keywords: Cleft lip and palate, associated malformation of the face, surgery, complications.

INTRODUCTION

The clefts lip and palate are frequent morphological accidents occurring during the 2nd embryonic month, they are the consequence of a defect of fusion, total or partial of the buds constituting the upper facial mass (frontal bud, internal nasal bud, nasal bud external, maxillary bud, mandibular bud) [1], the global prevalence is 1/800 births [2].

This malformation can be diagnosed prenatally by a three-dimensional ultrasound during the second of intra-uterine life [3].

Few studies have been done on cleft lip and palate in Mali, As a result of that this study has been for the sake of motivation and information regarding the health staff in Mali in particular and the population in relation to the frequency of these clefts palate and their surgical management in general.

The cleft lip and palate touch more willingly the boy than the girl whereas the palate clefts are concermed more with girls than boys [4]. Its therapeutic management is multidisciplinary and extends from birth to the end of adolescence, therapeutic calendars and surgical techniques vary from one team to another [5].

MATERIALS AND METHODS

It is a retrospective and prospective study over a period of 11 years (October 2001 to September 2012), on a sample of 435 cases of clefts, all operated in the maxillofacial surgery department of the Mother- Child Hospital. "Luxembourg" of Bamako.

We have included in this study all patients being for congenital malformation of the face cleft lip and palate whose age is greater than or equal to 4 months, were excluded all patients whose age is less than 4 months or presenting other malformation of the face outside the slits.

All operated patients were duly informed about the congenital malformation and its multidisciplinary management after having their informed consent.

All our patients benefited from a complete and preoperative clinical assessment (biological assessment: NFS-PQ, TP-TCK, GLYCEMIA A YOUNG, UREE-CREAT, GR-RH) a pre-anesthetic consultation, cardiac ultrasound and abdominal at the search for other associated abnormalities, and a systematic pediatric consultation for all children.

In our protocol given the anesthetic technical platform, primary cheiloplasty was performed from 4 months, closing the palate and veil from 2 years.

According to the anatomical shape of the slits we used the following surgical techniques:
For cleft lips: Technical according to Tennission, the technical according to Millard
For bike-palate clefts: Technical according to Wardill Calf, Intra-Velar Veloplasty

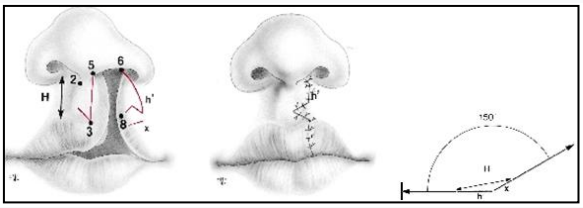

Fig-1: Tennisson-Malek Technical [6]

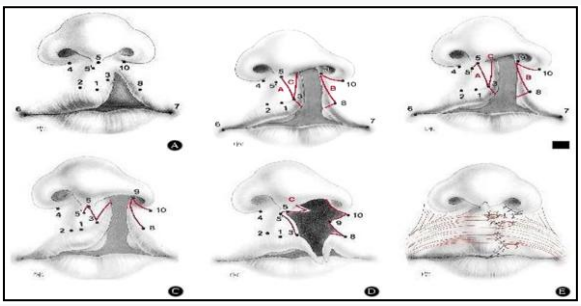

Fig-2: Millard process [6]

A. Marks. B. Paths. C. Incisions. D. Release of the flaps. E. Final aspect

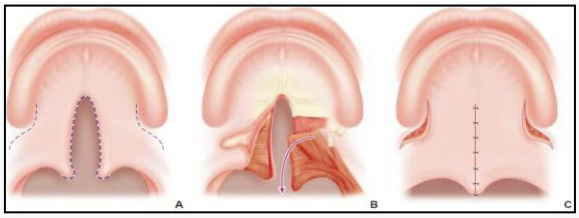

Fig-3: Intravenous Veloplasty according to Kriens [7].

A: Incision line. B: on the left, release of the mucosal planes. On the right, liberation-rotation of the velar muscular detached from the plane of the nasal mucosa and section of the pterygoid hamulus. C: Suture of the mucosal plane. Note the significant decline of the veil.

All procedures were performed under general anesthesia, with orotracheal intubation. Postoperative follow-up was simple in all our patients, with antibiotic administration routine (amoxicillin + clavulanic acid) for one week in all operated patients, analgesic (palliate 1), local postoperative care on a daily basis (careful decoupling, polyvidone iodine disinfection and the application of antibiotic on the lip) until suture was removed after 7 days, for cleft palate operated, nasal passages were cleaned at physiological serum.

The average duration of hospitalization of our patients is 5 days.

The monitoring rhythm of our patients is
1 day / 2: for a week
1 time / week for 1 month, then every month, every 6 months and 1 time / year and sometimes as needed for more information.

The scar quality of our patients was considered satisfactory in all cases. Data entry and analysis were performed on the Epi-info software (version 3.5.3).

RESULTS

We collected 435 patients, including 316 unilateral clefts, 64 bilateral clefts, 18 clefts, 19 isolated cleft palates, 4 isolated velar clefts and 14 Tessier clefts.

Board-I: Distribution of patients by sex

Sex	Effective	Percentage (%)
Male	213	48,97%
Fémale	222	51,03 %
Total	435	100%

Board-II: Distribution of patients by age group

Age range	Effective	Percentage (%)
4 months -2 years	212	48,70%
2 years-8 years	120	27,60%
8 years-15 years	72	16,60%
≥15 years	31	7,10%
Total	435	100%

Board-III : Distribution of patient by type of cleft

Type of cleft	Effective	Percentage (%)
Unilatéral cleft lip	316	73%
Bilatéral cleft lip	64	15%
Cleft lip and palate	18	4,1%
Cleft palate (isolée)	19	4,3%
Fente vélaire (isolated)	4	0,9%
Tessier cleft	14	3,2%
Total	435	100%

Board IV: **Distribution of patients by surgical technical**

Surgical technical	Lip		Palate ± Voilar		
Type of cleft	**Tennisson**	**Millard**	**VIV**	**Langenbeck**	**Wardill**
Unilatéral cleft lip	221	95	-	-	-
Bilatéral cleft lip	-	64	-	-	-
Velo-palate cleft	-	-	-	17	20
Velar cleft (isolated)	-	-	4	-	-
Cleft of Tessier	14	-	-	-	-
Total	235 (54%)	159 (36,6%)	4 (0,9%)	17 (3,9%)	20 (4,6%)

Board-V: **Distribution of patient according to the complications**

Distribution of cleft palate	**Effective**	**Percentage (%)**
Palate Fistula	4	9,76%
Lip dsinuty	2	4,88%
Normal	35	85,36%
Total	41	100%

Board-VI: **Distribution of patients according to the quality of the lip scar**

Quality of the scar	**Effective**	**Percentage (%)**
Hypertrophic	35	8,50 %
Cheiloidienne	15	3,64 %
Normal	362	87,86 %
Total	412	100 %

Fig-4: Right unilateral cleft lip A: Before B: After

Fig-5: Cleft palate A: Before B: After

DISCUSSION

This is a retrospective and prospective study over a period of 11 years, involving 435 patients for surgical management of cleft lip and palate in Mali in the maxillofacial surgery department of the Mother-Child Hospital. The "Luxembourg" in Bamako.

The age group 4 months -2 years was the majority in 48.7% of cases, with an average age of 64.86 months (5 years) of extremes ranging from 4 months to 80 years.

Yéya Ouane in Mali found an average age of 67.3 months with extremes of 1 to 25 years [4]. Magassa O in Mali found an average age of 1.325 months with extremes of 0 to 49 years [8].

Ben Amor M *et al.* in Tunisia found an average age of 6 years of extremes of (6month-25 years) [9]. The female sex was predominant in our study at 51% and a sex ratio at 0.96, which is different in Yeya Ouane's case study in Mali who found a sex ratio of 1.2 [4], Diakité CO in Mali who found 1.4 [10], Bellis TH in Scotland who found 1.4 [11], BEN AMOR M. *et al.* in Tunisia who found 1.37 in favor of the male sex [9].

According to the operative technical

- The technique of Tennisson represented in our study 54,02%, Diakité CO in Mali found 47,27% [10], Magassa O in Mali found 32,76% [8], Alquier RP in Djibouti 1991 [12] or all patients were operated according to the technique of 100% Tennission
- The technique of Millard represented in our study 36.6%, Anastassov Y Bulgaria found 100% [13], Diakité CO in Mali found 5.45% [8], Yéya ouane in Mali found 3.6% [4], PB Mortier (France) 1997 [14] or all patients were operated according to the technique using Millard 100% technique
- The Veau-Wardill technical represented 4.6%, which is different than that of Diakité CO in Mali, which found 47.27% [10], Yeya ouane Mali found 21.4% [4].
- Intra-velar Veloplasty represented 0.91% in our study.

The choice of operative technical is explained in our study series by the anatomical shape of the slit. The Tennisson Primary Cheloidhinoplasty procedure seems particularly suitable for the surgical management of unilateral cleft lip and palate in subjects with pigmented skin for 3 reasons:

- First reason: Reason of order scar, less important in case of keloid evolution scar; there are risk factors for keloid evolution (suture under tension, pigmented subjects, and adolescents).
- Second reason: Management of patients at late age.

- Third reason: Reproducibility, indeed it is very mathematical, easy to trace and to teach the tracing of the Tennission.

The palatal fistula can occur anywhere in the palatal scar,the main factors promoting palatal fistula are a suture under tension, a hematoma or a postoperative rhino-pharyngeal infection.

All cases of palatal fistula were effectively closed by the technical of detachment of all palatal fibromucosa after a period of retreat of more than six months.

Postoperative follow-up

During the study period the postoperative follow-up of our patients was simple in 96.32% of cases and 3.68% in cases of complications.

Post-Operative Complications:

8 cases of labial disunity, 4 cases of palatal fistula, no case of death was recorded during the study period. Number of patients operated according to the authors:

In our study series, 435 slits were all operated; which is consistent with that made by Ben Amor M. et al [9], but different from that achieved by:

- Magassa O [8] 58 slits were operated on 77 slits;
- Diakité CO [10] 110 slots were operated on a staff of 133 slots;
- Yeya ouane [4] 28 slots were operated on a staff of 61 slots.

Associated malformation in the cleft lip and palate

According to a WHO study, the most common abnormalities associated with cleft lip and palate were heart disease (28.6%), polydactyly (16.2%), deformity (14.6%) and hydrocephalus (11.0%). 4%), and microphthalmia (8.3%) [15].

In the literature several factors have been implicated in the genesis of the slits, the association between maternal epilepsy and slits is well known and the risk of fetal attack can reach 1%. This is partly due to the action of some antiepileptic drugs (especially phenobarbital and hydantoins) [16-18].

CONCLUSION

The cleft lip and palate are a reality in our country; they affect both male and female subjects, and may be associated with other malformations.

Explain and sensitize the population regarding the pathology through the media, to Demystify clefts lip and palate in order to reduce the socio-cultural influence as well as that of traditional healers in Mali.

The therapeutic management is long, difficult and multidisciplinary, which extends from the birth to the end of the adolescence, all our patients benefited from a complete clinical examination and a pre-operative biological assessment and pre-anesthetic consultation.

The choice of slit technical surgery in our study is a function of the anatomical shape of the slit, The Tennisson technique was our first choice in unilateral clefts lip during the study period for different reasons.

Cases of palatal fistula were successfully closed after a period of follow-up of more than 6 months, cases of cleft lip were also successfully closed, no cases of death were recorded during the study period.

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