

CHILDHOOD BLEPHAROPTOSIS: A REVIEW OF 113 CASES

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Purpose. The aim of this study is to describe the etiology, clinical patterns, surgical management and outcome of a series of 113 pediatric ptosis patients. **Methods.** To determine the visual and cosmetic outcome following surgical correction of congenital ptosis we reviewed the charts of 113 patients observed in our Department between January 2001 and December 2005. All patients undergo pre-op complete ophthalmological check, visual acuity, ocular motility imbalance, levator function and height of the palpebral fissure. Regarding the surgical procedure levator resection was performed in patients with a good function of the levator; a frontalis suspension was performed in patients with a poor levator function.

Results. 93 cases (82%) were unilateral, 20 (18%) bilateral; 21 patients (18%) had family history of ptosis. The etiology was myogenic in 74%, neurogenic in 11%, the jaw-wink ptosis was observed in 7%, aponeurotic in 4.5% and blepharophimosis in 3.5%. Regarding the eighth palpebral fissure, 34 cases (30%) presented severe ptosis, 63 cases (56%) moderate, 16 cases (14%) mild. Regarding the levator function 25 cases (22%) presented poor function or levator, 46 cases (41%) moderate, 42 cases (37%) good. Levator resection was performed in 77 cases (68%), frontalis suspension in 36 cases (32%). The postoperative outcome was poor in 15 cases (13%), suboptimal 12 cases (11%) and good in 86 cases (76%). The incidence of amblyopia was 25%. **Conclusion.** If a careful preoperative evaluation is performed, the surgical outcome in childhood can offer a very good prognosis.

Key Words. Blepharoptosis, Amblyopia, Ptosis, BPES, Blepharophimosis

INTRODUCTION

The aim of this study is to describe the etiology, clinical patterns, surgical management and outcome of a series of 113 ptosis paediatric patients. In our observations about 50% of all blepharoptosis are in the paediatric age group. The predominant pattern of the congenital ptosis, particularly in unilateral or in asymmetric bilateral cases, is a variable degree of amblyopia related to both visual deprivation and significant astigmatism: management requires repeated follow up for early detection and introduction of occlusion therapy; in spite of this, especially in unilateral cases and when the ptosis is associated with an ocular motility imbalance, amblyopia can be severe (1).

METHODS

The study was a retrospective of 113 patients, 71 males (63%), 42 (37%) females, median age 7 years (2-16 years), who underwent ptosis surgery in the Department Dentistry and Ophthalmology Section of Ophthalmology, University of Siena, under the care of the one of the authors (G.L.) between January 2001 and December 2005, median follow-up 36 months (24-52 months). All patients undergo pre-op complete ophthalmological check, visual acuity, ocular motility imbalance, levator function and height of the palpebral fissure.

In unilateral cases the amount of ptosis was calculated as the difference in mm between the heights of the palpebral fissure: severe ptosis was defined as 4mm or

lower than the desired eyelid level, moderate between 2 and 4mm, mild as 2mm or lower. In bilateral cases the ptosis was classified as mild if the palpebral fissures were 6 mm or more, as moderate between 4mm and 6 mm, as severe if less than or equal to 4mm. The levator function was measured as the maximum lid excursion from maximal downgaze to upgaze: this was classified as poor if less than 4mm, as moderate between 4-8mm, and good if more than 8 mm. The surgical procedure performed was related to the height of the palpebral fissure and to levator function (2): levator resection was performed in the patients with mild to moderate ptosis with levator function of more than 4mm. In all these cases the surgical approach was an anterior approach through the lid crease (3). For patients with moderate to severe ptosis with poor levator function our choice was a frontalis suspension (4) utilising a double armed 3-O Supramid suture (S.Jackson Inc®). The epicanthic folds and telecanthus in blepharophimotic patients were corrected with a Y-V plasty before ptosis correction was undertaken (5).

For moderate to severe jaw-winking ptosis, frontalis suspension, after levator excision, generally provided satisfactory correction of both jaw-winking and ptosis (6). All patients underwent surgery under general anaesthesia (10 patients under 3 years old for visual obstruction) and all patients were assessed preoperatively for corneal anaesthesia and Bell's phenomenon. The postoperative outcome was classified as poor if was re-

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quired another operation, suboptimal if the difference in lid height was more than 1mm, and good if the lids were within 1mm height.

RESULTS

In our sample: 93 cases (82%) were unilateral, 20 (18%) bilateral; 21 patients (18%) had family history of ptosis. The etiology was myogenic in 84 cases (74%); neurogenic in 12 cases (11%), the jaw-wink ptosis was observed in 8 cases (7%), aponeurotic in 5 cases (4,5%) and blepharophimosis in 4 cases (3,5%) (Table I).

Table I. Childhood blepharoptosis: 113 cases

	Cases	%
<i>Males</i>	71	63
<i>Females</i>	42	37
<i>Unilateral</i>	93	82
<i>Bilateral</i>	20	18
<i>Myogenic</i>	84	74
<i>Neurogenic</i>	12	11
<i>Aponeurotic</i>	5	4,5
<i>Associated with Jaw-wink</i>	8	7
<i>Associated with Blepharophimosis</i>	4	3,5

Regarding the heights of palpebral fissure, 34 cases (30%) presented severe ptosis, 63 cases (56%) moderate, 16 cases (14%) mild (Table II).

Table II. The amount of ptosis was calculated as the difference in mm between the eighths of palpebral fissure

Amount of ptosis	Difference between the eighths of palpebral fissure	Cases	%
<i>Severe</i>	≥4mm	34	30
<i>Moderate</i>	>2,<4mm	63	56
<i>Mild</i>	≤2mm	16	14

Regarding the levator function 25 cases (22%) presented poor function or levator, 46 cases (41%) moderate, 42 cases (37%) good (Table III).

Table III. The levator function was measured as the maximum lid excursion from maximal downgaze to upgaze

Levator function	mm	Cases	%
<i>Poor</i>	≤4	25	22
<i>Moderate</i>	4-8	46	41
<i>Good</i>	≥8	42	37

Levator resection was performed in 77 cases (68%), frontalis suspension in 36 cases (32%). The postoperative outcome was poor in 15 cases (13%), suboptimal 12 cases (11%) and good in 86 cases (76%). The incidence of amblyopia was 25%.

DISCUSSION

The main difference in the surgical procedure correcting

blepharoptosis in adult patients and in the childhood is related to the predictability of lid height that in adult patients could be enhanced using local anaesthesia (7); this option is not available in the childhood, therefore, more care must be taken in evaluating two predictor patterns like the amount of the lid fissure and the levator function: in other words the surgeon must not fit all cases to his favourite technique but the surgery must be strictly related to the clinical patterns.

Cosmesis was the predominant indication for surgery in our pediatric sample, particularly on parents's demand (8). The main indication for precocious surgery in our opinion is related to preventing amblyopia (9). Regarding the surgical procedures, we did not experience employing fascia lata (10); a double armend (skin needle) 3-O Supramid worked very well in our suspension procedure. The anterior approach was always our favourite choice in the levator resection procedure. This approach allowed us to create or enhance a nice lid crease (3) Regarding the complications we had only a transient (recovered in a couple of weeks) corneal exposure in 3 brothers with congenital external Ophthalmoplegia . The prevalence in our cases with a poor outcome (11) was not related to the surgical technique or to the choice of suspensors materials, but was related to the severity of clinical features like the patients with congenital external Ophthalmoplegia (3 cases), or with Blepharophimosis, Ptosis, Epicantus inversus syndrome (BPES 4 cases) . In conclusion, if a carefull pre-operative evaluation is performed, the surgical outcome in childhood Blepharoptosis can offer a very good prognosis.

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