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Abstract Information

Abstract Title:

Intraocular pressure, Axial length, Anterior chamber depth, Lens thickness and Horizontal corneal diameter in Normal children.

Purpose:

To assess the IOP, ocular echobiometric parameters and horizontal corneal diameter in normal children (ages from 1 day to 79 months).

Design:

Retrospective study.

Participants:

normal children (ages from 1 day to 79 months).

Main Outcome Measures:

To determine the mean values.

Intraocular pressure (IOP) , Axial length (AXL), Anterior chamber depth (ACD), Lens thickness (LT) and Horizontal corneal diameter (HCD).

Methods:

135 normal children (78 males, 57 females, 107 white, 15 mulattos, 13 black) were examined under narcosis with Penthrane (until 1985) and Methoxifluorane (after 1985). To assess the IOP we examined 68 normal children (both eyes) and 67 normal eyes of children with unilateral ocular diseases (mostly primary or secondary congenital glaucoma). To evaluate the ocular echobiometric parameters and the HCD, we examined 66 normal children (both eyes) and the same 67 normal eyes of children with unilateral ocular diseases (mostly primary or secondary congenital glaucoma). Some children were examined on different dates repeatedly in order to evaluate the evolution of unilateral glaucoma. All measurements were made by the same doctor. The IOP measurements were made between 7 and 8 a.m. using the Draeger applanation tonometer. The AXL, ACD and LT were measured using the 8 MHz probe from Kretz model 7200 MA (until 1995) and the A-Scan/Pachymeter DGH 5100e (after 1995). The horizontal corneal diameter was measured using the Jameson's calyper. For statistical analysis we have considered only one normal eye of non-glaucomatous children.

Results:

No difference of IOP was found in the comparison of the samples examined under narcosis with Penthrane and Methoxifluorane. The range of IOP (mean and standard deviation) was from 4.59 (1.24) mmHg for ages from 1 day to 6 months to 6.79 (2.49) for ages from 61 to 79 months. The range of horizontal corneal diameter (mean and standard deviation) was from 11.43 (0.59) mm for ages from 1 day to 6 months to 12.07 (0.42) mm for ages from 61 to 79 months. The ranges of AXL, ACD and LT in mm (mean and standard deviation) were respectively from 19.54 (0.79); 3.07 (0.4) and 3.90 (0.29) for ages from 1 day to 6 months to 21.16 (1.06); 3.45 (0.31) and 3.80 (0.46) for ages from 61 to 79 months.

Conclusion:

The IOP of normal eyes of children under narcosis is lower when compared to that of teenagers and adults. However, there is a progressive tendency of its increase with age. The echobiometric parameters (AXL, ACD and LT) and the horizontal corneal diameter of the normal children showed a tendency to a progressive increase until the age of 36 months.