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ORIGINAL ARTICLE

How much pediatricians know about congenital nasolacrimal duct obstruction

Lívia Mendonça Ferreira[1], Silvana Artioli Schellini[2], Alicia Galindo-Ferreiro[3], Denise de Cássia Moreira Zornoff[4], Joelma Gonçalves Martin[5], Roberta Lilian Fernandes de Sousa Meneghim[6], Carlos Roberto Padovani[7]

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Abstract

Objective: This study aimed to evaluate how much pediatricians know about congenital nasolacrimal duct obstruction (CNLDO) and the treatments for the condition. **Methods:** This observational study used a questionnaire developed by the authors to evaluate the primary care of CNLDO performed by pediatricians and their perceptions of the condition. **Results:** One hundred and thirty-two pediatricians answered the questionnaire. The majority (94.2%) of the children with CNLDO were aged six months or younger when a pediatrician evaluated them. Spontaneous resolution was observed in 56 (78.9%) children. Seventy-eight (97.5%) pediatricians recommended massage as the treatment for CNLDO. Sixty-seven (50.7%) pediatricians indicated they had limited knowledge on the etiology of CNLDO. However, 74 (56.1%) deemed they had good knowledge for diagnostic purposes. Ninety-seven percent of the pediatricians answered that more training on CNLDO is necessary. **Conclusion:** The majority of CNLDO patients assessed by pediatricians are aged six months or younger and massage may result in spontaneous resolution of the obstruction in 78.9% of the patients. The majority of pediatricians indicate that more information on CNLDO is required during medical or specialty training. CNLDO can be diagnosed correctly and the recommended treatment is ocular massage.

[1] Third-year Resident.
[2] University Professor since 1983, the author built a career at the School of Medicine of Botucatu Director of the School of Medicine in 2011/2015; Member of the University Council at the São Paulo State University - Professor of Ophthalmic Plastic Surgery.
[3] Senior Consultant Ophthalmology Orbit & Oculoplastic, Ophthalmology MD, PhD, FEBO.
[4] MD trained at the Federal University of Paraná (1988), Deputy Coordinator of the Distance Learning and Information Technology Center for Health Care of the School of Medicine of Botucatu/São Paulo State University. Language Coordinator (LC) of Coursera's Global Translator Community (GTC).
[5] PhD in Pathophysiology in Clinical Medicine at the School of Medicine of Botucatu/São Paulo State University (2009) – Physician at the São Paulo State University and Head Pediatrician of the Pediatrics Emergency Department of the University Hospital of the São Paulo State University since 2010.
[6] MD trained at the São Paulo State University (2004). PhD in General Basis of Surgery at the School of Medicine of Botucatu – Physician at the Ophthalmology Department of the School of Medicine of Botucatu – University Hospital of Botucatu.
[7] MSc. in Biostatistics at the School of Medicine of Ribeirão Preto/University of São Paulo (USP-SP) and PhD in Statistical Analysis of Agronomic Experiments at the Luiz de Queiroz College of Agriculture/University of São Paulo - Full Professor of Biostatistics at the São Paulo State University.

Correspondence to:
Lívia Mendonça Ferreira.
School of Medicine of Botucatu, São Paulo State University, São Paulo, Brazil. Rua Benedito Franco de Camargo, nº 427, Apto 96, Botucatu, SP, Brasil. CEP: 18606-370. E-mail: livi_nha@hotmail.com

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INTRODUCTION

Congenital nasolacrimal duct obstruction (CNLDO) is mainly related to Hasner's valve imperforation[1], affecting approximately 6 to 12% of children in the first year of life[2]. The obstruction is detected when the production of tears starts, in general around 15 days of life.[3] Previous studies have reported that 54.3%[4] to 78.5% of newborns have an obstructed lacrimal system and patency is related to gestational age[5]. Massage results in spontaneous resolution of 92.5% of children with CNLDO.[4]

General Pediatricians are often the first physicians to see cases of CNLDO. Diagnosis is relatively simple, recognized by tearing and secretion in the affected eye without other ocular symptoms. Pediatricians need to be able to recognize, treat and/or refer the patients for procedure such as probing, irrigation and stents. Hence, Pediatricians must acquire sufficient knowledge to diagnose, manage or refer cases of CNLDO.[6]

This study evaluates the diagnosis and management of CNLDO by Pediatricians. Additionally, this study evaluates the knowledge of CNLDO among Pediatricians.

METHOD

This descriptive and quantitative study evaluates the primary care of CNLDO among general Pediatricians, and their knowledge of CNLDO. A questionnaire developed by the authors was used to for the evaluation of knowledge, perception, diagnosis and management of CNLDO. This study was approved by the Ethics Institutional Board of Botucatu Medical School –UNESP, São Paulo, Brazil.

The target population were general Pediatricians or Pediatrics residents from Botucatu Medical School-UNESP. Approximately 524 Pediatrician were trained at this medical school. The e-mail addresses of previous graduates from Pediatrics program and currents residents were obtained from the Pediatrics Department. An invitation was sent to all email addresses to participate in a web survey of CNLDO. Those who agreed to participate received the link to the research consent form.

The questionnaire was available at the following internet link from the Botucatu Medical School: http://www3.fmb.unesp.br/questionarios/index.php/852412/lang-port.

To improve the participation rate, invitations to access the questionnaires were sent to the Pediatricians at least three times. The questionnaire maintained the anonymity of the participants. This survey instrument queried the demographic data of the participants, including duration of time in practice and knowledge of CNLDO. There were between 7 to 15 questions on CNLDO based on the responses of the participant. All the questions on CNLDO were multiple choice, basically focusing the diagnosis, management and clinical treatment of CNLDO during the first year of life, referral to an ophthalmologist, and willingness to be trained on conditions affecting lacrimal drainage.

A statistical analysis performed by chi-square test, considering a level of 5% of significance.

Additionally, the participants could also comment on some of the answers.

RESULTS

One hundred and thirty-two from 524 (25%) Pediatricians responded to the questionnaire. More than half (55.3%) were in a general Pediatrics practice for greater than 15 years, 24.4% had practiced for less than 5 years and 20.4% had between 5 and 15 years in practice.

Among all the participants, 59.1% received formal training in CNLDO during medical school, and 40.9% learnt about CNLDO during Pediatric residency course.

Sixty-five (49.2%) Pediatricians had assessed/managed more than 10 cases of CNLDO, and 12 (9.1%) have never seen a case of CNLDO.

The majority (93.3%) did not perform complementary tests for diagnosis.

Based on 63 (52.5%) repondents, the predominant age of CNLDO cases at the time of diagnosis ranged between 1 week and 1 month, followed by 2 months to 6 months of age among 50 (41.7%) respondents.

Forty-nine (40.8%) Pediatricians elected to refer all the CNLDO cases to an ophthalmologist, and five (4.2%) Pediatricians do not refer any cases of CNLDO.

Fifty (70.4%) of the Pediatricians indicated that referral to an ophthalmologist was necessary. Spontaneous resolution was the main reason for non-referral of infants to Ophthalmologists. Fifty-six (78.9%) respondents reported cases of spontaneous resolution on CNLDO.

Seventy-eight (97.5%) Pediatricians advised massage as treatment for CNLDO. Forty-nine (69%) of these Pediatricians recommended massage 2 to 3 times a day, varying frequencies of massage was recommended by the remaining Pediatricians. Massage was not recommended by 1.41% of Pediatricians.

The Pediatricians recommended continuing massage until symptoms improved in 25 (37.7%) children, in 22 (31.4%) children up to 6 months of age and in 21 (30%) children up to 1 year of age. There were no statistical differences between age groups (p=0.05).

The predominant age to improve symptoms without referral to an Ophthalmologist was less than 6 months for 43(60.6%) children.

When Pediatricians were questioned about how do they judge their knowledge of the etiology of CNLDO, 67 (50.7%) of them agreed that they had limited knowledge and 4 (3%) judged their knowledge as ideal. Responses to queries about diagnosis, indicated that 74 (56.1%) Pediatricians considered they had good knowledge. For treatment of CNLDO, there was no statistical difference between responses that indicated good (59 doctors - 44.7%) or limited (57 doctors - 43.2%) knowledge.

One hundred and twenty-eight (97%) Pediatricians agreed that more information on CNLDO is necessary during medical/Pediatrics training.

DISCUSSION

This study was performed to understand the knowledge of general Pediatricians on the management of CNLDO. This evaluation was important as patients with CNLDO initially present to general Pediatricians and they are often the first to treat this condition. The questionnaire in the current study evaluated what Pediatricians known regarding the etiology, diagnosis and treatment of CNLDO and related the findings to years of practice and the opportunity to assist/treat CNLDO.

The percentage of physicians who respond the questionnaire shows the small adherence of them , what may reflect a deficit in the subject, making them not comfortable to answer about the subject . In the same time , this is bad, because is not possible analyze all our target, which partially impairs results. On the other hand it is not possible to provide them more information about the theme.

Other surveys have been published of the knowledge of general ocular health and ocular disease among Pediatricians indicating that they do not feel they have sufficient information about CNLDO.[6] A survey of 100 general Ophthalmologists in the United Kingdom reported that 7% usually perform probing and if the symptoms persist, they refer the children to an oculoplastic subspecialist.[2] Hence, even among ophthalmologists, referral of patients with CNLDO to a specialist, is sometimes required.

Of the entire study sample, 59.1% of Pediatricians were introduced to CNLDO during medical school. However, for 40.9% of Pediatricians CNLDO was introduced during the medical residency in Pediatrics. This observation indicates that greater education on CNLDO is required for Pediatricians during training.

The response to the survey in the current study indicated that 12 (9.1%) Pediatricians have never seen a case of CNLDO. Additionally, younger respondents had less opportunity to see cases of CNLDO. Approximately 49.2% of the Pediatricians had seen more than 10 cases of CNLDO over the duration of their clinical career. This observation indicates there are a significant number of infants with CNLDO who present to Pediatrics.

The current study indicated that tearing started between 1 week and 1 month in 52.5% of children which concurs with a rate of 49% from a Spanish survey.[7]

In the current study 49 respondents referred all the cases of CNLDO and 70.4% considered it necessary to refer to a specialist. These observations likely indicate that Pediatricians require more information and better training on CNLDO.

The Pediatricians in the current study indicated that the majority of patients with CNLDO were less than 6 months old likely because this is the most common period for children to experience spontaneous resolution.[7] Manual massage was recommended by 98.6% of the respondents, with the majority (69%) indicating 2 to 3 times a day, similar than previous studies.[2]

The period of maintenance of the massages differed among respondents but was not statistically significant. Only 1.41% of respondents in the current study did not recommend massage, which differs significantly from 14.65% of Spanish Pediatricians who did not recommend massage.[5]

The main reason for non-referral to an ophthalmologist was spontaneous resolution occurring in 56 (78.9%) children. The rate of spontaneous resolution was very high in the current study and concurs with previous literature of 66% spontaneous resolution in children between 6 and 10 months.[8] A previous study reported that 2/3 of children can be free of the signs of CNLDO at 6 months of age.[9] The high rate of spontaneous resolution, is largely responsible for an approach that involves observation combined with conservative therapy as the optimal management choice until 1 year of age for CNLDO.[1,2]

Evaluation of the knowledge of the etiology of CNLDO among Pediatricians indicated 50.7% considered their knowledge limited, 56.1% indicated that they could reliably diagnose and around 44.7% indicated that they could treat. The variable observations indicate the necessity of better training on CNLDO.

In conclusion, the majority of CNLDO patients assessed by Pediatricians are less than 6 months old and 78.9% can experience spontaneous resolution of the obstruction with massage. The evaluation of perception of Pediatricians regarding CNLDO indicates a better training on CNLDO is necessary.

REFERENCES

1. Takahashi Y, Kakizaki H, Chan WO, Selva D. Selva. Management of congenital nasolacrimal duct obstruction. Acta Ophthalmol. 2010;88:506-513.
2. Puvanachandra N, Trikha S, MacEwen CJ, Morris RJ, Hodgkins PR. A national survey of the management of congenital nasolacrimal duct obstruction in the United kingdom. J Pediatr Ophthalmol Strabismus. 2010;47:76-80.
3. Tavares Lorena SH, Ferrari Silva JA. Retrospective study of the congenital lacrimonasal duct obstruction. Rev Bras Oftalmol. 2011;70:104-108.
4. Castelo Branco Neto E, Castelo Branco B, Cardoso CC, Carvalho RG, Mota E, Castelo Branco A. Castelo Branco. [Management of congenital nasolacrimal duct obstruction]. Arq Bras Oftalmol. 2009;72:75-78.
5. Schellini SA, Hoyama E, Rocha MC, Rugollo A Jr, Padovani CR. Evaluation of lacrimal system outflow in the newborn by dye tests. Orbit. 2000;19:137-142.

6. Manica MB, Corrêa ZMS, ÍMarcon IM, Telichevesky N, Loch LF. What do Pediatricians know about children's eye diseases? Arq Bras Oftalmol. 2003;66:482-492.
7. Galindo-Ferreiro A, Palencia-Ercilla T, Ferreira LM, Galvez-Ruiz A, Zornoff DCM, Khandekar R, et al. A survey of management of congenital nasolacrimal duct obstruction by pediatric primary health care providers in Spain. Eur J Ophthalmol. 2017;27:502-505.
8. Pediatric Eye Disease Investigator Group. Resolution of Congenital Nasolacrimal Duct Obstruction With Nonsurgical Management. Arch Ophthalmol. 2012;130(6):730-734.
9. Petersen RA, Robb RM. The natural course of congenital obstruction of the nasolacrimal duct. J Pediatr Ophthalmol Strabismus. 1978;15:246-250.