

# Retrospective Review on the Orthoptic Phone Call Clinic for Nasolacrimal Duct Obstructions and Chalazia

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## ABSTRACT

Ophthalmology departments in public health systems worldwide are overburdened with high referral numbers and long wait times. This has necessitated the development of new models of care to improve patient access and maximise clinic efficiency. Nasolacrimal duct obstructions (NLDO) and chalazia are two common paediatric conditions that have a high chance of resolution with conservative management alone. The Queensland Children's Hospital developed a phone call clinic to manage these referrals to better triage and prioritise children and encourage initiation of conservative management prior to outpatient presentation. This paper describes the clinical processes and protocols in the design of this phone call clinic and a retrospective discussion of its outcomes. Two hundred and seventy appointments were made available within a 16-month timeframe, with no additional staff or resources required. The findings of this review would suggest that orthoptists can be utilised in the triaging process to help with clinic efficiency and patient care.

**Keywords:** orthoptic-led, clinic efficiency, nasolacrimal duct obstruction, chalazia

## INTRODUCTION

Congenital nasolacrimal duct obstruction (NLDO), or more commonly referred to as a blocked tear duct, is a delay in the development of the lacrimal system resulting in a membranous obstruction of the nasolacrimal duct, known as a Hasner membrane. It presents as epiphora and/or mucopurulent discharge which can be either constant or intermittent. Due to the resultant stagnant drainage system, the eye is more prone to bacterial conjunctivitis. Nasolacrimal duct obstruction is a

common condition, evident in up to 20% of infants.<sup>1</sup> It is usually unilateral but may be bilateral, and is commonly asymmetric in these instances. NLDO typically spontaneously resolves, with 95% of cases doing so by 12 months of age.<sup>1,2</sup> As a result, it is usually treated conservatively and includes cleansing the eyes and lids and massaging the duct to build pressure within the system and release the Hasner membrane. Massage has been reported to be highly effective with a success rate of 92-96% if performed accurately.<sup>3</sup>

Chalazia or meibomian cysts are lipogranulomatous lesions in the eyelids caused by the obstruction of meibomian glands. Generally, they are painless, non-contagious and do not affect vision. However, they can cause cosmetic distress, secondary infections, and rarely, if significant in size, can result in astigmatism, higher order aberrations and potentially amblyopia in the paediatric setting.<sup>4</sup> Chalazia are one of the most common eyelid lesions diagnosed not only in ophthalmological settings, but also in general practice and emergency departments, therefore efficient management is important.<sup>5</sup> The reported rate of spontaneous resolution of chalazia with the use of hot compresses in the adult population ranges from 25-50%<sup>6,7,8</sup> but there is no published data specifically for the paediatric population. Due to the high resolution rate with conservative management, in combination with the risks involved with general anaesthesia for surgical intervention, the standard practice for treatment of paediatric chalazia involves warm compresses and massaging of the lump. There is also evidence that the earlier conservative management is initiated, the higher the chance of a resolution.<sup>6</sup>

Both conditions are routinely neither vision nor life-threatening and therefore when referrals for these conditions are received by the ophthalmology department they are usually triaged as Category 3 appointments. This would suggest an appointment within 12 months however, unfortunately, the scheduling of some patient's initial appointments exceeds this timeframe because of heavy demand. Additionally, during the initial ophthalmology examination parents are encouraged to initiate conservative management before surgical intervention is considered. If these conditions do not resolve with conservative management then surgery may be performed as a second line of management.

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Paediatric ophthalmology is a highly specific area of medicine and therefore ophthalmology departments at tertiary children’s hospitals are often required to service very large geographical areas with populations to match. Demand for service from ophthalmology departments usually exceeds capacity and consequently it is difficult to schedule initial appointments within the recommended time frames. This means that there is a continual need to find innovative ways to maximise clinic efficiency, including new models of care and full utilisation of orthoptists’ scope of practice to help with the burden on consultant ophthalmology clinics.

Orthoptic-led paediatric chalazia clinics have been developed in other health services with success. Whilst Bedi & Pilling<sup>9</sup> described a face-to-face clinic, they similarly suggested conservative management be prescribed as a first line of treatment. During this study it was found that none of the 24 children who were seen in the orthoptic-led outpatient clinic went on to require surgery, reinforcing the premise of a high resolution rate with conservative treatment. Jackson and Beun<sup>10</sup> reported on an ophthalmic nurse-run chalazia clinic. This clinic demonstrated further that providing nurses and allied health professionals with adequate training to expand their scope of practice resulted in adequate care equivalent to that of a medical practitioner.

An orthoptist-led phone clinic has been implemented at the Queensland Children’s Hospital with the purpose of contacting the families and carers of patients with these conditions in order to provide education regarding conservative treatment and potentially resolve the issue before presentation to clinic. It has

importantly also been designed to be a valuable screening tool for the detection of more serious pathology to ensure that this is addressed in a timely manner.

### THE PHONE CALL CLINIC

Prior to the development of the phone call clinic, consultants responsible for triaging referrals were asking orthoptists to call patients and referrers to gain more information about the patient’s condition and to encourage the initiation of conservative management. This ad hoc process was eventually formalised to a dedicated phone call clinic. Guidelines were produced by the consultant ophthalmologist and orthoptist, including the information to be discussed and the follow-up process. Red flag questions were designed to help screen for more serious pathology requiring a more urgent review, including differential diagnoses such as congenital glaucoma and orbital cellulitis. Patient information handouts about NLDO and chalazia were created for distribution to the parents following each phone call. The orthoptist received appropriate training prior to commencing the clinic.

The NLDO and chalazion phone call clinic began in February 2017. The clinic is conducted on a weekly basis in the ophthalmology department at Queensland Children’s Hospital when adequate staff are available. The four-hour clinic includes approximately 12 patients per session and are a combination of review and initial phone consultations. These clinics are booked concurrently with a consultant clinic so that if clinical advice is required then it is readily accessible.

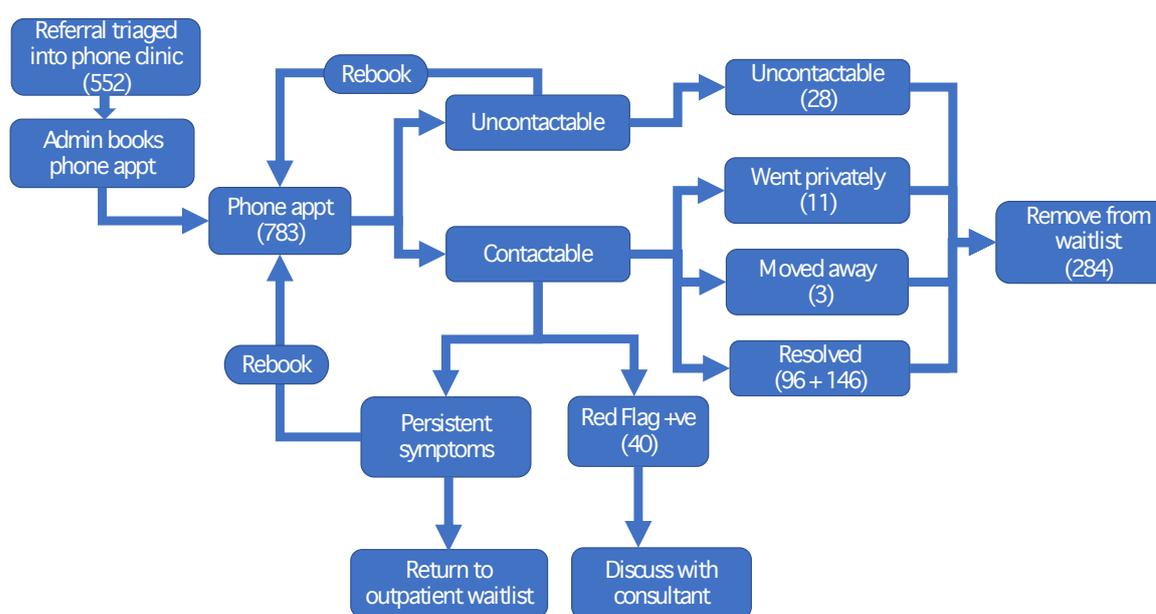


Figure 1. Patient pathway and numbers for the Orthoptic Phone Call Clinic at Queensland Children’s Hospital.

The referral pathway has evolved with the formation of the clinic. All referrals received by the eye clinic are triaged by a consultant ophthalmologist and those deemed to be appropriate are redirected to the Orthoptist Phone Call Clinic waitlist. Initially, during the first year of the phone clinic, the ophthalmology waiting list was also screened by an orthoptist and any Category 3 referrals for these conditions were redirected to the phone call clinic too. Patients were advised through the hospital text messaging service to expect a call with the date and time.

During the phone consultation the orthoptist first introduced themselves and explained the purpose of the phone call, then took a detailed medical history concerning the condition and their general health. The nature of the suspected condition was explained and advice on conservative management was dispensed. This included how to keep the eye clean with lid hygiene measures and how to perform massage to help resolve the issue. These instructions were provided on an information sheet sent to the patients via email or post. Patients were also advised that they could send a photo via email for further assessment. It was important for both the parent and the clinician to be aware that without seeing the patient's ocular condition in person, a definitive diagnosis could not be made and therefore this must be disclaimed to the family.

Additionally, to help identify more serious pathology red flag questions were created. For the patients with suspected NLDO the red flag questions aimed to identify whether the patient was unusually photophobic; appeared to have asymmetrically proportioned eyes or eyes that appeared larger than normal; and whether the cornea appeared cloudy or hazy. This line of questioning was designed to detect congenital glaucoma and corneal pathology, which would warrant an urgent review. In suspected chalazia cases, the questions hoped to ascertain whether the lesion was painful, large enough to block the patient's vision, appeared to be infected, or was also associated with conjunctival injection. If there was a positive answer to any of these questions, then the case was discussed with an ophthalmologist.

The information received from each phone call was logged on the patient's electronic medical record including any follow up required such as the receipt of clinical photos or discussions with an ophthalmologist. If the condition had resolved between referral and initial phone call and there were no further concerns with the eyes or vision, then the child was removed from the ophthalmology waiting list. If the condition had not resolved, then conservative management was to be attempted and a review phone appointment was organised for two months. If the condition still had not resolved, then the patient was either returned to the general ophthalmology waitlist according to the date of initial referral or planned for a further phone call. Another phone call appointment review was only organised if there was

still a strong likelihood that conservative management could be effective. This would typically include children with a chalazion reducing in size or with NLDO under the age of 12 months.

## RESULTS

The retrospective review included 552 patients who were part of the phone call clinic during the period February 3<sup>rd</sup> 2017 to June 10<sup>th</sup> 2019. There was a total of 783 phone call appointments booked into the phone call clinic for 552 patients. Two hundred and eighty-three of the patients were male (51.1%) and 269 were female (48.9%). The ages ranged from 7 weeks to 17 years, with a median age of 17 months. In this study there were 196 referrals for chalazia, including 'eye lid lumps' and 'cysts'. There were 350 referrals for suspected blocked tear ducts including 'recurrent conjunctivitis' and 'sticky eyes', and an additional six referrals which did not easily fit into either category.

Of these 552 patients contacted, 96 (17.3%) had resolved between the date of referral and the first phone call appointment. At the time of publication, 54/552 (9.8%) were currently being monitored via the phone call clinic and 43/522 (7.8%) were awaiting an outpatient clinic appointment. These 97 patients were therefore excluded from the rest of the data as we do not yet know their outcome.

Of the remaining 455 patients, 146/455 patients (32.1%) resolved during the time they were being monitored on the phone clinic or prior to their outpatient appointment and were subsequently discharged. A further 11/455 (2.4%) patients chose to seek care in a private setting; 3/455 (0.7%) moved interstate; and 28/455 (6.2%) were uncontactable.

With the assumption that each of the aforementioned patients would have failed to attend their appointment or attended unnecessarily, we were able to better utilise 284 ophthalmology clinic appointments over this 28-month timeframe.

In addition to this, 83/455 (18.2%) were being seen by the ophthalmology team for ongoing management of the referred condition (including surgical intervention) or other incidental findings such as refractive error and 88/455 (19.3%) had been discharged by the ophthalmology department following at least one outpatient appointment.

The red flag questions and clinical history taking helped to identify patients on the waitlist who might need a more urgent review. During the period documented in this study there were 40/552 (7.2%) patients who were positive to a red flag question and brought into an outpatient appointment within 2 weeks. None of those were diagnosed as an ocular emergency, such as congenital glaucoma or orbital cellulitis.

## DISCUSSION

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Overall, more patients benefitted from the ophthalmology department's resources with no additional staff or resources required. Despite this, the workload of the orthoptists was not greatly affected due to careful scheduling of clinics.

The new clinic was beneficial to the ophthalmology department because it reduced the number of patients requiring face-to-face appointments. Subsequently, these appointments were available to be utilised for other waitlisted patients, leading to a reduction in the waitlist numbers and the waiting time for initial appointments.

The new clinic was also positive for the patients and their families. The clinic allowed the family to gain an understanding of their child's eye condition, and to receive instruction regarding conservative management at home. It was also a good opportunity to explain the options to parents who might have been interested in being managed in the private sector.

The inconvenience and associated costs of attending paediatric appointments can often be overlooked. It can be especially difficult in the public sector where there is little flexibility with appointment scheduling. For each paediatric appointment, usually a parent or guardian requires a day off work. The phone appointment can be more convenient for these families who struggle to be available, whilst also alleviating the cost of travel, parking and possibly accommodation. This is a significant consideration given that in Queensland some patients are required to travel well up to 1,800 km to reach the Children's Hospital. This is frequently at the expense of Queensland's Patient Travel Subsidy Scheme which provides assistance for patients and their carers. The average cost to Queensland Health through this scheme is \$1,100 per claimant and in 2017 the cost totalled over \$80 million.<sup>11</sup>

Participation in this clinic did not result in a longer wait time for patients requiring a consultant opinion. If the condition did not resolve during the phone call clinic care period, they were returned to the general waitlist with the date of their initial referral determining their place on the waitlist. Therefore, there was no delay in appointment waiting time. However, a small number of parents did still consider this waiting time to be excessive and expressed dissatisfaction with the process.

There are some difficulties associated with the phone call clinic. The phone calls are scheduled during outpatient hours which can be difficult if parents have the same work hours and are unable to use their phones. This was a likely contributing factor to the low success rate of contact on the first attempt. A further factor was the challenge of non-English-speaking parents with the need to coordinate interpreters. Whilst a phone conversation

can often extract a lot more information than a referral can provide, it can still be difficult to assess severity and confirm a diagnosis with varying levels of parental understanding and concern.

This successful model of care could also be expanded with the correct framework and training to a larger range of ocular pathologies through telehealth and outpatient appointments. Currently in the initial planning phase, there is a pilot project to create a platform on the electronic medical records where photos can be uploaded directly and reviewed by clinicians with authorisation to view the medical record. This next step could greatly improve the triaging process to more accurately prioritise patients on the long waitlist.

The demand for effective and efficient triaging clinics is constantly increasing and orthoptists are the ideal eyecare professional to be used in these screening models to help combat the growing public health burden.

## CONCLUSION

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Through this retrospective review, the success of the new orthoptic phone call clinic has been well demonstrated. This new model of care has been a positive change for both the efficiency of the department and providing better patient care and access. Thus, it is recommended that this clinic be implemented in other ophthalmology departments facing the same accessibility issues. The phone clinic demonstrates orthoptists have an increasingly important role in patient care, particularly in the public health sector to help address this heavy burden.

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