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Audit of UK First Nurse-Led Adult Lacrimal Clinic

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Abstract

Nurse-led clinics in the United Kingdom (UK) are not new. It was irst endorse by the government in 1990s in a variety of document including making a difference and the chief nursing officer's 10 key roles for nurses. In addition the NHS Plan charge management to make a change and respond to the government's strategy for nursing and midwifery to introduce new ways of working for to improve service delivery by injecting quality care and treatment. Nurse-led lacrimal clinic has the potential to offer a valuable contribution through increase patient low, improve cost efficiency and create opportunities for nurses to develop new skills. With increasingly healthcare burdened e.g. funding limitations, staff shortages there was a need to streamline services and improve patient low and efficiency. Signi icantly, a huge proportion of patients referred to the lacrimal clinic were considered to be likely suitable for nurse-led assessment and management. The nurse-led lacrimal clinic at moor ields eye hospital is the irst is the United Kingdom to manage the condition epiphora or watering of the eye.

Keywords: Nurse led assessment • Management • Midwifery • Government Pakistan

Introduction

Tears formation and drainage

Tears are made by the lacrimal gland which is a tubular organ that protects and lubricates the ocular surface. It is situated in the upper lateral region of each orbit. The tear drainage system begins at the puncta in the medial aspect of the upper and lower eyelids. The puncta should be open and in irm apposition to the globe. The tears drain into the puncta from the tear meniscii along the lid margins by capillary action and also due to the negative pressure created by the sac along each canaliculus. These canaliculi pass approximately 2 mm vertically, then turn 90°C and run 8 mm-10 mm medially to join the lacrimal sac.

As the sac is surrounded by the orbicularis muscle, normal blinking movements result in negative pressure in the sac when the lids are open and positive pressure when, the lids are closed. The lacrimal sac lies in a bony fossa in the anterior medial orbit and extends inferiorly to form the nasolacrimal duct. This duct measures 12 in length mm and has a distal valve, the valve of Hasner, before it opens into the nose through an ostium at the inferior meatus (Figure 1) [1].

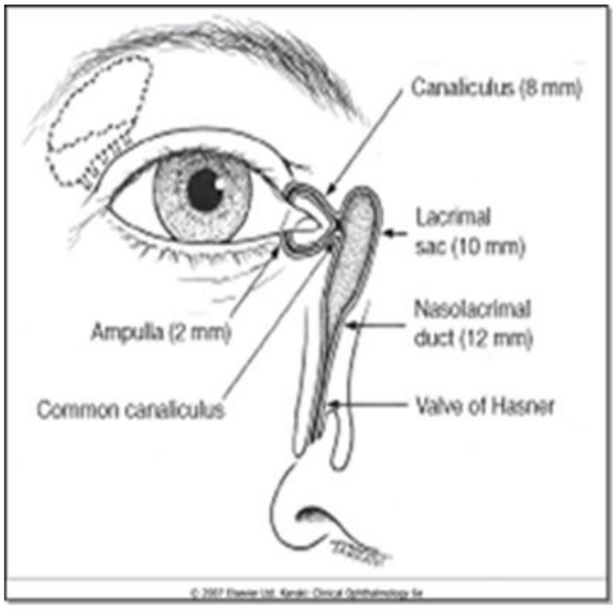

Figure 1. Lacrimal system.

Materials and Methods

Reasons for watering of the eye

The reasons for watering are broadly divided into two categories; reflex tearing or over production and a nasal lacrimal obstruction.

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When an obstruction occurs anyway along the nasal lacrimal system or duct true epiphora is said to have occurred. An obstruction can be congenital or acquired. In adults obstructions are largely acquired. Other causes of epiphora includes malposition of the lacrimal puncta or outward rolling of the lower lid (e.g. ectropion) or lacrimal pump failure in lower lid laxity or weakness of the orbicularis muscle [2].

Acquired obstructions:

- Primary punctal stenosis causes includes (chronic blepharitis, idiopathic primary stenosis, herpetic infection of eyelid, irradiation, cicatrizing conjunctivitis and trachoma, cytotoxic drugs, porphyria cutanea tarda, acrodermatitis enteropathica).
- Secondary punctal stenosis (punctal eversion) can be attributed to lid margin disease.
- Canalicular obstruction causes includes (conjunctival trauma, herpetic infection, drugs and irradiation, chronic dacryocystitis).
- Nasolacrimal duct obstruction can be caused by (idiopathic stenosis, trauma, previous surgery, granulomatous disease, tumours) and dacryolithiasis.

Reflex tearing

Reflex tearing also referred to as lacrimation or hypersecretion is different from a true epiphora and occurs secondary to excessive tear production in the presence of a patent lacrimal system example ocular inflammation or surface disease, emotional distress and or irritation of the eyes by (smoke, dust, foreign bodies, injury). Normal tear secretion is necessary to keep the ocular surface moist. The tears form a thin film, which integrity is crucial for normal corneal physiology. It is composes of three layers:

- Mucin layer, secreted by the goblet cells; alters the surface tension of the tears and increases its adherence to the cornea.
- Aqueous layer, secreted by the accessory lacrimal glands (Krause and wolfring) or in the presence of ocular irritation the main lacrimal gland.
- Oily layer, secreted by the meibomian glands; prevents tear film evaporation.

A very common cause of tearing is blepharitis inflammation of the eyelid which cause thickened, hyperaemic lid margins with scales deposited on the lashes, blocked meibomian openings, excessive abnormal meibomian secretions and frothy discharge on the lid margins and dry eye secondary to deficiency of mucous or meibomian secretions be an extremely common reason for watering of the eye [3].

Diagnosing watering of the eye

A diagnosis is usually based on reduced lower tear meniscus, and increased debris in tear film on slit-lamp examination. Increased tear Break Up Time (BUT) and fluorescein disappearance test are also used to corroborate the diagnosis. External examination of the puncta and eyelids (ectropion, punctal obstruction-eyelash, conjunctivochalasis, eversion of punctum by large caruncle, canaliculitis and canturion syndrome-prominent nasal bridge) and palpation of the lacrimal sac is undertaken. The tear duct is syringe to gain conclusive diagnosis [4].

Diagnosis and management

Management of watering of the eye depends on the diagnosis: Lacrimation treatment is usually medical example dry eyes treatment consists of topical lubricants. Blepharitis treatment consists of lid scrubs, oral tetracycline and topical steroids and or lubricants. Epiphora treatment example ectropion or entropion requires lid repair. Primary punctal stenosis management involves dilatation with nettleship dilatator and punctoplasty. Secondary punctal stenosis-ziegler cautery, medial conjunctivoplasty, lower lid tightening. Dacryolithiasis and partial or complete canalicular obstruction requires canaliculo dacryocystorhinostomy and intubation or endonasal dacryocystorhinostomy [5].

Results and Discussion

Rational for management of watering of the eye

The proper diagnosis and treatment of watering eye is important especially as it impact the outcome of many other ocular procedures. Undiagnosed and untreated watering eye substantially decreases the patients quality of life, visual acuity and impairs social contacts (Figure 2) [6].

Figure 2. The watering of the eye.

Investigation

To understand the complexity or reason for a failed dacryocystorhinostomy or watering of the eye following surgery a dacryocystography or scintography are helpful investigations.

Training programme

The nurse consultant identified due to her expert knowledge and experience and was trained over a six months period against a pre-designed clinic proforma, which includes physiological and lacrimal assessment, diagnosis and a management plan. The nurse

diagnosis and management plan was assessed and compared to the doctor. The achievement of the same decision or agreement between the nurse and a doctor indicated the achievement of a gold standard. On completion of the training, the first 100 consecutive patient audited over a 10 months period [7].

Aim

The aim of the audit was to assess the accuracy of the nurse diagnosis and management plan, patient satisfaction, waiting time and throughput.

Audit results

The demographics of participants included 73 females and 27 males. The presenting symptoms of patient were multifactorial with complains of epiphora (74), discharge (12), redness (8), pain (12), itching (32) and grittiness (30). Symptom duration ranged five months and twenty years. A total of 61 patients were previously seen by a general practitioner, moorfields eye hospital accident and emergency and others but 21 patients were not previously seen (Figure 3) [8].

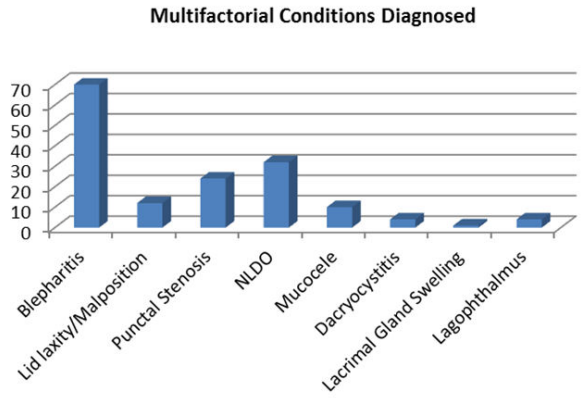

Figure 3. Multifactorial conditions diagnosed.

It is important to diagnose and treat patients with watery eyes, as this symptom has been shown to decrease patients quality of life through impairment of their ability to perform activities of daily living (such as reading, watching TV and driving), cause embarrassment during social interactions and reduce overall happiness. In addition, failure to treat a watery eye may impact the effectiveness of many ocular treatments, such as the administration of topical glaucoma medications or may prevent an ophthalmologist from proceeding with cataract surgery owing to the potential risk of an infection. In cases of watery eye due to blockage of the tear drainage system, the patient may be predisposed to infection of the tear sac (dacryocystitis). The level of diagnostic agreement between the nurse and doctors was 98.67% in regards to diagnosis and 98.33% for the management plan. The level of disagreement was demonstrated using the abbreviation (Figures 4 and 5) [9].

U: One patient was deemed unsuitable as his history included two previous Dacryocystorhinostomy (DCR) surgeries at another hospital and required a Dacryocystorgram (DCG) and to be review in the doctors clinic [10].

A: The nurse recommended medical management of lid hygiene for one patient with blepharitis and entropion (mild) on closure undergo lid hygiene followed by lid tightening surgery which the doctor also agreed with A. However there was D=disagreement with the current need for surgery. However the doctor have recommended that surgery may be need in future [11].

A: Incidental findings of bilateral significant lacrimal gland swelling was diagnosed by the nurse unrelated to the patient's diagnosis of mucocele and confirmed by a doctor=A. Nonetheless additional input was required from the doctor=DR to investigate and manage the lacrimal gland swelling [12].

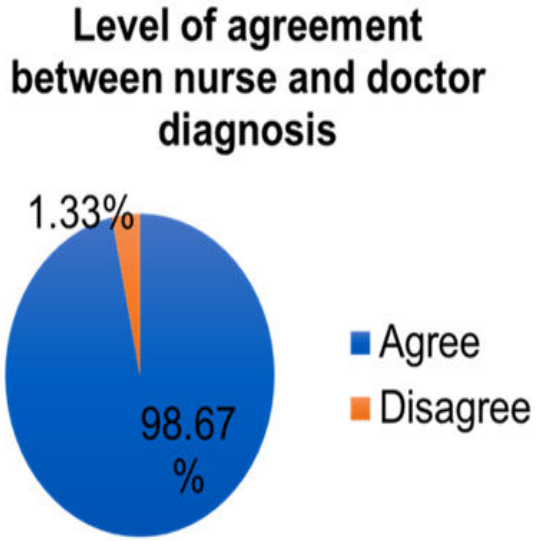

Figure 4. Diagnostic agreement.

Figure 5. Management plan agreement.

A patient reported survey which served to capture patient satisfaction and clinical waiting time was completed at the end of the consultation. Eighty nine patients rated the consultation as excellent. Nine patients considered the nurse consultation as very good and two patients rated it as good (Figures 6 and 7) [13].

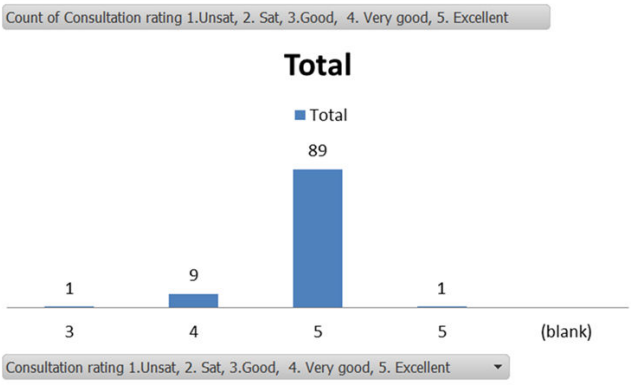

Figure 6. Patient reported consultation satisfaction.

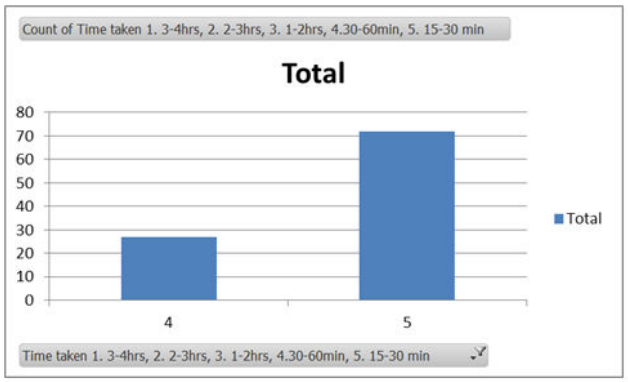

Figure 7. Patient reported outpatient waiting time.

A total of seventy two patients were seen within 15-30 minutes, twenty eight patients seen within 30-60 minutes.

Clinical throughput

During the audit period the nurse saw five patients in the nurse-led clinic comparable to the number of new patients seen by a doctor. This signified an equivalent number of patients are seen by a nurse and a junior doctor. Therefore the nurse-led clinic was also considered cost effective and additional nursing staff could increase throughput double folds [14].

Conclusion

There was a high level of agreement between nurse and doctor diagnosis and management plans as well as a high level of patient satisfaction. The nurse-led clinic was proven an income generator for the trust. However it was recommended that referrals to the nurse-led clinic be carefully scrutinized to exclude complex surgical patients e.g. those who have previously undergone lacrimal surgery. An adnexal doctor should be contactable for a second opinion should one be required in the case of unexpected findings or complexity. This audit has demonstrated more nurse-led input would accelerate through put consequently a second nurse has been introduced into the clinic. The audit will be repeated on two yearly basis.

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