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Research Article

Ophthalmology Consultations in a Large Specialist Hospital

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Abstract

The objective of this article is to describe the patterns of ophthalmic referrals in a tertiary hospital.

Materials and Methods: This prospective descriptive design was conducted among all age group patients who were referred to ophthalmology department during the period of September 2014 till March 2015. The researchers designed data collection sheet that comprised patients' personal characteristics, service requesting consult, reason for consult, type of consultation (screen, rule out, request for ophthalmic investigation – such as visual fields) primary ophthalmic complaint, versus follow-up one, final diagnosis and action required.

Results: 519 in-patient and ER consultations were included in this study, Screening and rule out were the most common type of consultations accounting for 71.7% in which CMV retinitis rule out (232 patients) constituted the biggest portion. The top common primary ophthalmological diagnoses were, Exposure keratopathy (129 patients), Refractive errors (88 patients), Diabetic retinopathy (53 patients), and Conjunctivitis (48 patients). Optic neuropathy was the most secondary ocular diagnosis detected in 201 patients

Conclusion: Our hospital is considered the first hospital in publishing such data in Saudi Arabia. Analyzing in-patient ophthalmology consultations can be crucial for redistribution of hospital resources to effectively manage In-patients with eye diseases.

Keywords: In Patients; Consultations; Ophthalmic Referrals; Saudi Arabia; Screening; Tertiary Hospital

Introduction

In-patient ophthalmology consultations are crucial since many systemic conditions have a sight-threatening potential. It is considered to be challenging for the evaluating ophthalmologist because most of the in-patients have depleting conditions making them unresponsive, unable to cooperate with the examining physician beside using portable equipment, which are less precise and with limited capabilities than the out-patient equipment [1,2]. Knowing the exact reason for consultation can lead to improve hospital systems toward the most common encountered in-patient eye-related diseases, fill the gaps in ophthalmology training programs, and improve the in-patient eye care.

The ophthalmology department at King Faisal Specialist Hospital and research center (KFSH&RC) is well placed to conduct this study since it has a broad catchment area, receiving referrals from all regions of the kingdom and has the work force, expertise, and multidisciplinary support to make appropriate diagnoses.

The objective of this article was to describe the patterns of ophthalmic referrals in a tertiary hospital.

Materials and Methods

A prospective descriptive review of all in-patient and Emergency Room (ER) ophthalmology consultations evaluated and managed by all physicians in the ophthalmology department at King Faisal Specialist Hospital and Research Center (KFSH&RC), commencing September 2014 for 6 months till March 2015. The data collected from software program included age, sex, service requesting consult, reason for consult, type of consultation (screen, rule out, request for ophthalmic investigation – such as visual fields) primary ophthalmic complaint or follow-up, final diagnosis and action required were recorded. All data was tabulated and analyzed using the software package SAS version 9.4 (SAS Institute Inc., Cary, NC, USA).

Our study was in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. IRB approval was obtained via the Institutional Review Board at KFSH&RC with a reference number.

Results

519 In-patients and ER consultations were referred to the ophthalmology department during the period from September 2014 to March 2015. Age of the patients ranged from 1 day to 92 years of age. 226 referrals (43.5%) were counted for females.

Neurosurgery department referrals occupied the upper hand (25%), hematology (21%), oncology (15%), Intensive Care Unit (13%), Pediatric (12%), and others (internal medicine, surgery…) (14%) (Figure 1).

Screening and rule out were the most common type of consultations accounting for 71.7% in which CMV retinitis rule out (232 patients) constituted the biggest portion. Others were Genetic or hereditary disorder rule out (102 patients) and Fungal endophthalmitis ruled out (56 patients). The top common primary ophthalmological diagnoses were, Exposure keratopathy (129 patients), Refractive errors (88 patients), Diabetic retinopathy (53 patients), and Conjunctivitis (48 patients). Optic neuropathy was the most secondary ophthalmological diagnosis detected in 201 patients. However, despite the eye exam aided in the diagnosis or changed the protocol of management of 31% of the patients, 69% of the referrals were routine eye exam.

Inpatient ophthalmologic procedures were performed in 46 patients with Retinal laser photocoagulation (16 patients) being the most frequent one. Others included Cataract surgery (10 patients), Tarsorrhaphy (9 patients), Rubbing lashes removal (5 patients), Entropion repair (2 patients), Enucleation (2 patients), and Symblepharon release (2 patients).

19.6% of consults were for pre-operative visual fields. 18% of the consults were urgent referrals. Eye problems that developed during hospitalization accounted for 15% of consultations. Preexisting eye problems accounted for 13.3%.

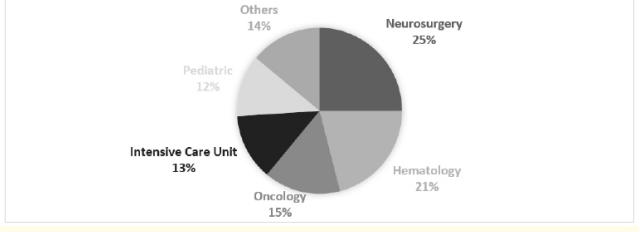

Figure 1: Location of ophthalmology consultation referral.

Discussion

Our study is considered the first one in publishing such data in Saudi Arabia. there was a huge number of inpatient consultations in our hospital regarding eye problems suggesting that it is a crucial serving department that deserves great attention. Our study showed that neurosurgery department was considered number one in referrals for ophthalmology consultations.

In the literature, there was a lack regarding the pattern and the exact reasons of ophthalmologic referrals from neurosurgery department. However, in our hospital, it was worthy to point that internal medicine department referrals considered low compared to other hospitals such as University of Malaya Medical Centre, University of Illinois hospital and University of California Los Angeles Medical Center [1-3]. This is because some training programs in such departments neglect the importance of ophthalmologic education and some of which do not reach 10 hours in their entire residency program which eventually leads to a low confidence level preforming eye exam [4].

It was important to mention that Screening and ruling out are the most common type of consultation in our hospital accounting for 71.7% of all consultations. However, in University of California Los Angeles Medical center, it was reported that 28.7% of all the

in-patient ophthalmology consultations over a 7 year period was for screening examination [3]. Moreover, in Kings County Hospital Center in Brooklyn, 18.6% of inpatient ophthalmology consultations was for screening and ruling out eye manifestation of systemic diseases [5]. In our hospital, CMV retinitis rule out was the most frequent reason for screening and ruling out consultation accounted in 232 patients. This was because our tertiary hospital admit complex patients with hematological malignancies, organ transplant, and many of which were on immunosuppressive agents and all of which were established to cause CMV retinitis [6].

In a retrospective inpatient ophthalmology consultation study in University of Malaya Medical Centre (UMMC), 55.5% and 43.1% of all consultations were to screen and to rule out diabatic retinopathy, respectively [1]. Our study postulated that 53 patients only out of 519 consultations were diagnosed with diabetic retinopathy upon eye examination and screening, suggesting that majority of our patients were either previously diagnosed or having normal retina.

Because of the inpatient referrals, 31% of the patient had a different management plan regarding their systemic conditions either discovering new diagnosis or helping in controlling the primary disease. The most common primary ophthalmology diagnosis in our study was exposure keratopathy followed by refractive errors, diabetic retinopathy and lastly conjunctivitis. This could be explained by the presence of huge number of comatose patients in the ICU inside the hospital. However, primary ophthalmology diagnosis varied from hospital to another as in university of California Los Angeles Medical Center in which refractive errors followed by fungal endophthalmitis, conjunctivitis, diabetic retinopathy and corneal abrasion were the most common primary ophthalmology diagnosis [3]. In our hospital it was found that optic neuropathy was the most common secondary ophthalmic diagnosis as the optic nerve was affected by compressive agents or high intracranial pressure (ICP).

It was important to emphasize on studying and analyzing the type, reason, and the diagnosis of consultations in specific hospital to reach the optimal eye care by changing hospital management protocol toward certain diseases. Also, it was recommended that residency training programs should focus more on skills like using indirect ophthalmoscopy and portable slit lamp devices [7]. Moreover, it was recommended for residency programs to increase the ophthalmologic educational hours especially internal medicine, family medicine, and emergency medicine training programs [4].

Despite that ophthalmology is more of out-patient specialty, ophthalmology training programs should direct trainees more toward the inpatient consultation, examination, and diagnosis.

In-patient ophthalmology consultations may result in change in the management of the patients and sometimes result in intervention. In Penn State Hershey Medical Center, in-patient ophthalmology consultation resulted in interventions in 47% of the patients among which are outpatient follow-up (23.1%), medication (20.8%) and further imaging (8.1%) [8].

However, in our hospital, Retinal laser photocoagulation was considered the most frequent in-patient ophthalmologic procedure for 16 patients out of 46 who had interventions. Moreover, it was also considered the frequent procedure in UMMC [1].

Regarding Covid-19 pandemic, it is important for every ophthalmologist to take precaution measures to prevent the spread of the virus to in-patients that some already had underlying systemic diseases. This is because ophthalmology is a special practice that depends on reusable equipment and a close contact with patients [9]. Moreover, respiratory droplets and tears can contaminate ophthalmological equipment [10] thus it is appropriate to clean the equipment routinely with the appropriate agents [11]. It is also recommended to avoid measuring intraocular pressure using air puff to prevent the spread of aerosols from conjunctival secretion that might carry risk of infection to health care worker [11,12].

Ophthalmology is thought to be an outpatient specialty with some ophthalmologists rendering the importance of inpatient eye care. As mentioned earlier, in-patient ophthalmology consultation led to different intervene, ruling out diseases, diagnose sight-threatening conditions, and maximize the overall inpatient care. However, ophthalmologist may have a lack in in-patient skills which was explained because of the thought about such specialty and because of training programs' educational gaps. A study recommended to have a different type of ophthalmologist, ophthalmic hospitalist [13], the two main job for such hospital-based ophthalmologist is to attend consultations on in-patient service and to cover the urgent need of emergency room. This will also decrease the pressure on the ophthalmologist to focus more on outpatients, increase the job satisfaction and provide exceptional inpatient care.

Conclusion

In-patient ophthalmology consulting team is an important service that can improve the patient's eye health. Analyzing in-patient

ophthalmology consultations can be crucial for redistribution of hospital resources to effectively manage in-patients with eye diseases.

Also, understanding the nature of the consultation can aid in filling the gaps in any training programs benefiting trainees as well as improving the clinical outcomes. Despite the discrepancy between the type of complaint and diagnosis of the patient, eye exam considered an important step in diagnosing or excluding certain systemic diseases in our tertiary care hospital.

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