Communication

The New Clinical Skills Training Module for the Master’s Degree in Ophthalmology

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Abstract
This article aims at the principle problems noticed in the process of training postgraduates in ophthalmology for clinical skills (POCs). Alteration of the training objectives and training curricula, as well as the clinical department training plans, will allow POCs to obtain a systematic and standardized education to establish their general attitude toward medical life and career plans. This will help to improve their clinical skills and establish professional ethics that will protect the interests of patients and promote the healthy and harmonious development of the Eye Hospital. Furthermore, the Ophthalmology Center could cultivate a number of outstanding postgraduate students that match its tier, to describe the quality of the training for the master’s degree in Ophthalmology. (Eye Science 2013; 28:211–214)

Keywords: ophthalmology; post-graduate; clinical skills; education.

Introduction
In response to the National Education Regulations and long-term development plan, and in order to achieve the goal of cultivating comprehensive and innovative talents, this course explores the teaching methods implemented and curriculum reform. In addition, we further clarify the classification of training objectives, modalities, and content between the research-based and clinical types of graduate students encountered in teaching practice. We focus predominantly on the teaching activities that combine basic scientific research methods and clinical skills for the postgraduates in ophthalmology for clinical skills (POCs).

First, training objectives of POCs: high-level ophthalmic medical care, research, and teaching talents
To possess a good ideological and highly professional ethics and solid humanistic, social, and scientific literacy.
To possess a solid ophthalmic foundation of theoretical knowledge and skilled clinical diagnosis and treatment abilities:
① Capable of obtaining medical history accurately, conducting standard eye examinations, writing related medical instruments correctly (medical records, lists of examinations, etc.)
② Capable of general eye examinations and treatment practices.
③ Being accurate and skillful at basic surgical operations as well as basic microsurgeries.
④ Able to correctly understand reports of special examinations, such as fluorescein angiography, ultrasound, electrophysiological examinations of eyes and vision field, etc.
⑤ Able to diagnose and treat common eye diseases independently, and able to finish small outpatient surgeries and simple intraocular surgeries independently.

Able to conduct scientific research. Have clinical skills equivalent to senior residents. Be able to engage in research, clinical practice, and education in ophthalmology in universities or provincial/municipal hospitals.

Second, systematic learning of the basic theoretical knowledge of ophthalmology
Basic theoretical knowledge of ophthalmology: POCs will have a class together, taught by profes-
ors or by associated professors who could combine contents of other courses. Students are required to master eye anatomy, physiology, biochemistry, pathology, and pathogenesis; principles of diagnosis and treatment, clinical examination, treatment options, surgical treatment, and treatments for complications of common and frequently-occurring ocular diseases. Participation in large Ophthalmology classes is required. Duration: 10 hours.

Pre-clinical training in ophthalmology through basic theory courses: Lectures from relevant functional departments, clinical departments, medical departments will be given in this course, including: Ophthalmic Center’s history and development; ways to be a ophthalmology graduate student; graduate management system; patient communication and practicing ethics; aseptic series; core codes of medical safety and medical malpractice risk prevention; social insurance regulations; the new rural cooperative medical policy; HIS systems; library information resources and network security; medical records and prescriptions; humanity solicitude in ocular patients; use of ophthalmic laboratory examinations and the slip lamp, ophthalmoscope, and indirect ophthalmoscope; basic diagnosis and treatment of the top ten ophthalmic emergency diseases and principles of treating emergency systemic diseases; ophthalmic anesthesia and anesthetic management; mental health; ophthalmic drugs and rational drug therapy in ophthalmology applications. Duration: 36 hours.

Latest technology for basic research and clinical processes in ophthalmology: Professors or associated professors from different specialties will give lessons in this course, concentrating on the various branches of clinical ophthalmology diagnosis technology and domestic research progress. This section requires students to master pathogenesis, diagnosis, treatment principles, clinical examination, treatment options, surgical methods, and complication treatments for simple and complex ocular diseases. Accordingly, the latest developments—whether domestic or international in methods and technologies will be introduced. Revealing these questions could inspire the POCs to conduct further research. Duration: 130 hours (evening class only).

Ophthalmic surgery and microsurgical skills: Professors or associated professors with extensive clinical experience and microsurgical skills are in charge of this course; they adopt a centralized teaching mode and present surgery videos. Students are required to master the basic principles, methods, and skills of ophthalmic surgery and microsurgery. Senior ophthalmologists attend the sub-group to practice in the Wetlab. Each student has at least 48 hours of hands-on practicum. POCs can practice directly on pigs’ eyes, while interacting with nearby teachers. This will help students to obtain a very effective understanding and mastery of these surgical skills. POCs will stay in different wards of the Ophthalmic Center for at least 18 months (six specialties). Duration: 30 hours.

Research skills enhancing program. This includes “Ophthalmology public laboratory training courses” and “Ophthalmology experimental animal training courses.” Professors or associated professors with certain skills in basic ophthalmic research are in charge of these courses. The course purposes are to make students understand scientific experimental methods, principles, and skills.

Third, strengthen basic clinical skills training

Departments rotation and rotation time

Total rotation departments ≥6, including outpatient, eye trauma, and professional departments, each for 3 months; the remaining rounds are arranged by the hospital.

Diseases

Chalazion, hordeolum, entropion, ectropion, ptosis, eyelid tumor, chronic dacryocystitis, acute conjunctivitis, trachoma, pterygium, dry eye, keratitis, corneal ulcers, senile cataract, congenital cataract, lens dislocation, primary acute angle-closure glaucoma, primary chronic angle closure glaucoma, primary open-angle glaucoma, congenital glaucoma, iridocyclitis, central retinal artery occlusion, central retinal vein occlusion, diabetic retinopathy, central serous retinopathy, macular hole, retinal detachment, macular degeneration, intraocular tumor, optic neuritis, acute uveitis, uveal encephalitis, eye contusion, penetrating eye injury, ocular chemical injury, intraocular foreign bodies, ocular foreign bodies, refractive
errors, concomitant strabismus, amblyopia, etc.

**Basic clinical skills required**

1. To master visual acuity, slip lamp examination, and direct ophthalmoscopy;
2. To master a variety of intraocular pressure measurement methods, including the non-contact tonometer (NCT), indentation tonometer, and applanation tonometer (Goldman tonometer);
3. To master lacrimal passage irrigation, binding up the eye, pressure bandaging the eye, conjunctival injection, corneal foreign body removal, hordeolum incision, and other eye treatment operations.
4. To master anterior chamber depth measurement, corneal thickness measurement, gonioscopy, triple mirror, front mirror, and indirect inspection microscopy.

**Surgical training**

1. To master chalazion incision, excision of pterygium, and entropion surgery.
2. To complete lacrimal sac excision, enucleation, and penetrating eye injury suturing under the guidance of senior doctors.
3. To complete simple specialty surgery under the guidance of senior doctors.

**Training of chief resident assistants**

1. Responsibilities: participate in treatment of acute and severe ocular patients; assist the chief resident in charge during the off-duty period, assist the directors of clinics and wards of the administration; hold case discussions within the department and Ophthalmic Center.
2. Shifting schedule; every 4 to 6 months.

**Fourth, teaching practice**

In order to develop and enhance their teaching abilities, graduate students must participate in clinical teaching. They will meet the following requirements:

1. Not less than 60 hours teaching time (to participate in two rounds of ophthalmology practice teaching)
2. Be responsible for teaching a small clinical practice class
3. The instructor of the trainees will select one or two small topics for a theory teaching course and the total length is no less than four hours. Graduate students must prepare diligently for the lessons as the teaching trainee; lesson plans are reviewed by the instructors and the teaching leaders. A pre-presentation must be performed before the class.
4. The teaching abilities and teaching quality of the graduate students will be evaluated at the end of the teaching practice work; reviews and ratings will be recorded.

**Fifth, strengthen the basic experimental skills training**

With the help of tutors and the guiding team members, graduate students initially gain the ability to carry out scientific research, establish a rigorous and realistic scientific attitude and style, conduct innovative research about domestic common causes of blindness in terms of its pathogenesis and prevention, put forward new ideas or new results in one of these fields.

**Results**

Setting up a series of clinical shifting programs and training programs allowed us essentially to set up training requirements and training objectives in accordance with a professional degree for ophthalmology graduate students.

We make full use of the established Wetlab to carry out the ophthalmic microsurgery training course. POCs develop clinical skills very effectively, especially procedure and microsurgery skills.

Courses in Ophthalmology begin with prevention and treatment of common blind-causing eye diseases using multimedia systems, especially a large number of explanatory surgical videos. Seminars and communication and discussion are available to aid graduate students in improving their clinical diagnosis and operative skills in a relatively short time.

The graduate education at Zhongshan Ophthalmic Center is currently the leading program at the domestic scale and level. Carrying out this project will further improve the level of the teaching staff and the consistency of teaching characteristics. We will establish a platform that is integrated with high-level international ophthalmology training models.

**Conclusion**

Our hope is that the joint efforts of teachers and
students, engaging in a series of systematic training and reform, will help POCs to establish their career ethics and to master basic clinical skills that protect the interest of patients, thereby gaining a good foundation for their future careers.

References

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