

The Bedside Ocular Examination

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Introduction

Ophthalmology clinics are filled with technical devices that are routinely used in patient exams. After becoming accustomed to these tools, seeing patients outside the comfortable confines of the clinic can be awkward and even challenging. For this reason, ophthalmologists should become familiar with the different tools and techniques of the bedside ocular examination.

History

Most inpatients examined by ophthalmology are seen in consultation at the request of another medical specialty. The consulting team should provide you with specific questions or concerns they would like you to address. If they have not, you should request this information from them. Focus your history on the concerns of the requesting service. From a billing perspective, lack of a documented order from the requesting service in the medical record could result in denial of payment for the consult. Acquire a past ocular history, paying particular attention to things such as history of eye diseases, past ocular surgeries, refractive error, history of ocular trauma, and ophthalmic medications. For relevant cases, such as acute ocular trauma, ascertain the mechanism of injury, whether the patient was wearing glasses or eye protection, and the time and location of the incident. Determine if the patient has family history of ocular disorders. Also obtain relevant past medical and surgical history, social history, and review of systems (often required for consultation billing codes). If the patient is unable to communicate, attempt to acquire information from family members, if available. If this information cannot be obtained, document this in your note. Occasionally, the patient's outside eye care provider must be contacted for additional information.

Examination

The bedside exam differs from the clinic exam in some ways. Typically, if you are seeing a patient at the bedside it is because he or she is physically unable to come to clinic. This may be because he or she is very ill or recovering from a recent operation. The patient may even be comatose. Often these patients will have a lower tolerance for the exam. Patients may only be able to position themselves in certain ways, and in some instances, they may not be awake or able to participate in the exam at all. What you are able to accomplish is highly dependent on how much the patient can cooperate.

As in clinic, always wash your hands before entering and when leaving each patient room. Use universal precautions if there is any evidence of blood or an open wound. This is especially important for inpatients, as they may be particularly susceptible to infection, depending on their medical condition. Make sure your instruments are clean. They usually do not need to be sterile but should not be a vector for spreading infection.

If the eyelids are exceptionally swollen, you may need to utilize one or two Desmarres retractors to assist in the exam.

Measure visual acuity using a near card. Always assess whether the patient normally wears refractive correction and have him or her wear it if available. Occasionally you will receive a consult for a patient with blurry vision only to discover that the vision is blurred because he or she is not wearing his or her spectacles. Carry a few loose trial lenses (e.g. +2.00 and +3.00 diopters) with you as patients over 40 years of age may require near assistance if they do not have their usual reading correction with them. Pinhole can be used at near just as it is when measuring distance acuity if the patient can position properly. If you plan to have serial visual acuity checks performed, remember that mydriasis and cycloplegia can have a significant impact on acuity at near, particularly in a young patient.

Confrontational visual fields are highly reliant on patient cooperation. Try to obtain them if you are able. Using two red objects, such as the bottle tops of dilating drops, usually yields better results than fingers alone.

Motility also depends on cooperation. This is critically important in facial trauma patients to assess for extraocular muscle entrapment. If a patient is unable to cooperate with this portion of the exam and there is concern for entrapment, forced ductions can be performed using toothed forceps under topical anesthesia.

The pupil exam is critical, especially in comatose patients. Assess pupil size, reactivity, and whether there is an afferent pupillary defect. The pupil exam can be performed using a Finhoff illuminator, a bright pen light, or an indirect lamp on maximum brightness. If you cannot hold open both eyelids at the same time, ask for assistance from the nurse or other staff.

Intraocular pressure is usually measured using a Tono-Pen. This device requires careful technique and can be quite inaccurate in the wrong hands. If you are unsure of your result, repeat the measurement multiple times. Try to avoid pressure on the globes while holding open the eyelids as this may give a falsely elevated measurement.

The external exam is especially important in trauma patients. Look for evidence of fractures and lacerations. Make sure the lacrimal drainage system appears intact. Palpate for crepitus which could suggest an orbital fracture communicating with a paranasal sinus. Measure ocular position using a Hertel exophthalmometer in patients with facial trauma or proptosis.

The anterior segment exam is limited when compared to the detail available under the slit lamp in clinic. Portable slit lamps can be helpful, but the amount of detail is still significantly diminished compared to the full-sized models. Be careful to document only things you can reliably assess given the limitations of your equipment. For instance, do not state the anterior chamber is “quiet” if you cannot confidently assess for cell or flare. Instead, make more general statements such as the anterior chamber is “formed.” Portable slit lamps are expensive and not available everywhere. Alternatively, the anterior chamber may be assessed using the magnification from a 20-diopter binocular indirect ophthalmoscopy lens and the illumination from a Finhoff illuminator, penlight, or indirect headset.

The fundus may be examined by indirect or direct ophthalmoscopy, similar to what one would perform in clinic. Always check with the primary service before dilating a patient with neurologic issues, as they may be monitoring neurologic status via pupil exam. Sometimes dilation must be deferred to a later date when the patient is more stable. If it is imperative that you perform a dilated exam on an eye in a neurologically unstable patient, you may be able to dilate only that eye while leaving the other eye undilated for neurologic evaluation. It is always a good idea to notify the patient's nurse when you have dilated a patient, specifying approximately how long the drops should be expected to last. Additionally, you may wish to leave this information on a note at the patient's bedside to prevent any confusion other care providers may have after noticing the acute change in pupillary status. For patients in whom you do not need to perform a peripheral fundus exam, such as an assessment for papilledema, you can use a direct ophthalmoscope to visualize the optic nerve head and posterior pole.

Even when dilation is absolutely contraindicated, limited information may be gained by examining any imaging studies (computed tomography or magnetic resonance imaging) for signs of disruption in the posterior pole. In cases where there may be concern for posterior segment pathology, B-scan echography may be indicated at the bedside.

Orders

In general, if the patient needs ophthalmic medications to treat their condition, these are best written by the ophthalmologist, who is most familiar with these medications. If systemic medications are needed for treatment, discuss this with the primary team and decide who should write the orders. Be clear in your note about whether medications should be continued after discharge.

Documentation

When writing your consult note, focus on the specific questions or concerns the primary team has proposed. Your note is meant to convey information to healthcare providers in other medical fields, thus you should write in a fashion that they can read and understand. The assessment and plan should be written without abbreviations or jargon. Avoid even routine ophthalmology abbreviations such as "OD" or "OS," instead stating "right eye" or "left eye" to avoid potential confusion. It is also good practice to leave your pager number or other contact information in the note, encouraging the primary team to contact you if they have any additional questions or concerns.

In addition to your consult note, you may need to contact the consult team directly, depending on the urgency of your findings.

Follow-up

Assess whether the patient requires further ophthalmology follow-up. You may need to perform serial bedside exams during the patient's inpatient stay or it may be appropriate to arrange ophthalmology follow-up after discharge. Include follow-up recommendations in your consult note and send a letter to the patient's eye care provider if appropriate. If follow-up is particularly important, it is often helpful to secure the patient's contact information so you may call them at a later date to assure an appointment has been scheduled.

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