1.9 Evaluation

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1.9.1 Introduction

Unless emergency intervention is indicated (chemical injury; see Chaps. 1.10, 3.1), the patient's systemic condition as well as the eye's injury-related pathologies must be properly evaluated. The primary goal of the evaluation process is to obtain all the necessary information from/of the patient to allow:

- Systemic triaging: which of the patient's systemic conditions require primary intervention (brain or thoracic trauma, gastrointestinal bleeding, etc.). Teamwork, including neurosurgeons, trauma specialists, ER and ICU physicians, among others, may be required to make intervention decisions.
- Ocular triaging: this includes the determination of the sequence of interventions (e.g., treatment of an open globe injury must precede reconstruction of a lid laceration) as well as the nature and timing of the intervention (e.g., staged or comprehensive, immediate or delayed; see Chap. 1.8).

The evaluation should be sufficiently thorough so that appropriate management decisions can be based on it, yet it must be limited so that only relevant information is sought and treatment is not needlessly delayed.

Pearl

Diagnostic tests that would have no management implications or that would unnecessarily delay the treatment should not be ordered.

This chapter is dedicated to the evaluation of the acutely injured eye; the treatment of chronic trauma-related conditions is beyond the scope of this book.

1.9.2 Systemic Evaluation

Based on the patient's systemic condition, the ophthalmologist may have to check the vital signs and initiate proper intervention as necessary. If the patient is conscious and mentally stable/reliable, a brief history should be taken to determine whether systemic injuries are present. The patient may also have systemic conditions or take medications that need to be accounted for when treatment decisions concerning the eye are contemplated. Proper evaluation by an anesthesiologist of the patient undergoing surgery is an absolute must. Additional issues that should be addressed include:

- Drug allergies
- Currently taken medications[1]
- The hour the patient last ate or drank[2]
- Whether a tetanus booster shot is indicated

1.9.3 Ophthalmological Evaluation[3]

- The primary goal of evaluation is to establish the most important pathologies caused by the injury so that the intervention can be optimally planned (e.g., type, timing).
- The initial (preoperative) examination also serves as a recording of the eye's baseline condition to which the final outcome will be compared.

1 e.g., those that may increase the risk of intraoperative bleeding

2 The intervention may be urgent enough to warrant surgery without general anesthesia (see Chap. 1.8).

3 Not all of these tests are ordered routinely; every case requires an individualized decision. Further details concerning the evaluation of the injured eye are given in Chap. 2.11.

- The written record and the test results are important evidence if a legal claim is subsequently filed; this is as important for the ophthalmologist (to protect himself) as for the patient (insurance, workman's compensation; see Chap. 1.8).
- It is *not* a goal of the evaluation to try to meticulously list every minor tissue lesion. Even significant pathologies, ones whose presence would have no bearing on the decision-making process, need not be identified if in the process of obtaining them further injury to the eye may threaten. These pathologies will be recognized and addressed later when the risk of iatrogenic damage has already passed.[4]

1.9.3.1 History[5]

Since intervention may urgently be necessary, history-taking in trauma cases is somewhat different than in non-injury-related diseases. Table 1.9.1 summarizes the most important questions. Knowledge of the injury's circumstances can yield important information for the experienced ophthalmologist:

- If a hammer has been used, the ophthalmologist immediately suspects that an IOFB is present and that prophylactic chorioretinectomy may be needed.
- If an explosion occurred, multiple IOFBs may be present.
- If the object is long and sharp, there is a high probability of retinal injury.
- If a blunt object caused the injury, occult rupture may have occurred, and lens extrusion is always a possibility.

4 One example is a contact lens examination of an eye with hyphema: the evaluation of the angle should be deferred until the risk of secondary bleeding has subsided.

5 An eye injury is a mentally, not only physically, traumatic event; much like being in the "fog of war," the injury's circumstances may be difficult for the person to discern. This is the reason why the ophthalmologist should not be a passive listener when taking history but an active "interrogator", why taking history is as much an art as much as it is science, and why being able to also question an eyewitness is so valuable.

Table 1.9.1 The basic questions in taking the history after a mechanical eye injury

Question[1]	Comment
What happened?	General circumstances are sought
Have other body parts also been injured?	A negative answer does not necessarily imply that such an injury has not occurred
What object caused the injury?	Only blunt objects can cause occult ruptures; conversely, an IOFB must always be suspected if a sharp object is the culprit
Is the object available?	Examination of the object can yield important additional information[2]
Was the injury self-inflicted?[3]	The injured person may be a bystander, or a victim of assault or domestic violence
When did the injury occur?	This has significant implications for management
Where did injury take place?	The possibility of soil contamination has utmost importance
	An injury at the workplace has legal implications
What were the initial symptoms?	Loss of vision is the most crucial information
Have the symptoms changed since?	An increase of pain may signal severe intraocular hemorrhage; in children, the lens may become cataractous within hours
What treatment has been applied so far?	Information on topical (e.g., irrigation, foreign body removal) as well as systemic (oral, intravenous) medications is equally important

[1] The line of questions must be adopted to the demands of the individual case.

[2] e.g., the IOFB is often a splinter from the hammer itself, rather than from the object that was hit with the hammer

[3] Caution is always advised with the answer, especially in children.

In *children*, the art of history taking requires even more special skills than usual [7]. The child may be unable (e.g., because of young age, pain, fright) or unwilling to describe what happened. Children even lie (Munchausen's syndrome [16]) about the event to "cover up" an activity perceived as impermissible or to hide the presence/responsibility of another person[6] (see Chap. 2.16 for further details).

In *elderly* patients, difficulties may arise if the person's memory is poor and they are unable to recall exactly what happened.

If it is possible, questioning a *witness* about the event is extremely useful.

1.9.3.2 Subjective Testing of Visual Functions

1.9.3.2.1 Visual Acuity

Unless the patient is unconscious or very uncooperative, or the injury is caused by a chemical agent, it is imperative that the ophthalmologist determines the visual acuity[7] in both the injured and the fellow eye[8] (see Table 1.7.4).

- Care must be taken that the uninjured eye is properly covered during the test.
- Whenever possible, standard charts (Snellen, ETDRS) should be used; for illiterate persons or preliterate children the E or C charts should substitute.
- In infants, fixation and pursuit should be tested.
- In immobilized patients the near card can be used or a gross measurement be taken (e.g., LP, HM/CF at a given distance; there should be proper contrast between finger and background).

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6 This is of special importance if child abuse is suspected (see Chap. 3.3).

7 The goal is not to obtain the "best-corrected" visual acuity value but one that serves as an acceptable basis to compare the post-treatment visual acuity with. The pinhole, if the patient can utilize it, is of great help.

8 The fellow eye's *major* findings should also be recorded during the evaluation; however, a detailed examination of the fellow eye should be postponed until after the acute treatment phase.

Testing for NLP must be done with the strongest light of the slit lamp *and* of the indirect ophthalmoscope. The test should be conducted so that no "click" is audible, and both tests should be done in "two directions": changing from darkness to light, and vice versa.

Pearl

Careful testing to determine whether the eye has NLP or LP vision is performed not to justify choosing reconstruction or enucleation but primarily for prognostic purposes (see Chap. 1.8).

Especially if worker's compensation issues are at stake, malingering may have to be ruled out [5].

1.9.3.2.2 Confrontational Visual Field

This simple test may reveal severe retinal injury or optic nerve damage.[9]

1.9.3.2.3 Color Vision

Color vision testing is rarely used in the setting of acute trauma, even though the red saturation phenomenon[10] is a useful indicator of optic nerve damage [6].

1.9.3.3 Objective Testing of Visual Functions

1.9.3.3.1 Pupils

- The *shape* and *position* of the pupil in the injured eye are noted: a drawn or asymmetrical pupil may signal presence of an open wound and iris prolapse.
- The *diameter* of both pupils should be recorded; dilation can be caused by iris trauma (sphincter damage), scattering of incoming light (e.g., vitreous hemorrhage), or by eye's inability to properly perceive light

9 The examiner's hand or a strong light source is used as the target.

10 Compared with the intact other side, the redness of the object appears diminished with time if the optic nerve is damaged.

(retinal or optic nerve damage). Anisocoria can also be caused by damage to the sympathetic fibers (causing miosis); this is characterized by greater anisocoria under scotopic than under photopic conditions.[11]

- Testing the pupils' *reaction* to direct and consensual light.
- If the pupil is nonreactive, it should be determined whether the afferentation (APD) or efferentation is responsible (Fig. 1.9.1).

1.9.3.3.2 Electrophysiology

The test is virtually never used in the acute setting. Contrary to the wildly held belief, the predictive value of ERG [4] is limited; even the *bright flash ERG* may be nonrecordable in the presence of massive vitreous hemorrhage [14]. This test, just as the loss of LP, should not never serve as justification to forgo reconstructive surgery (see Chap. 1.8).

Conversely, the ERG is useful in determining the need for intervention with chronic, otherwise symptomless IOFBs (see Chap. 2.13) [18].

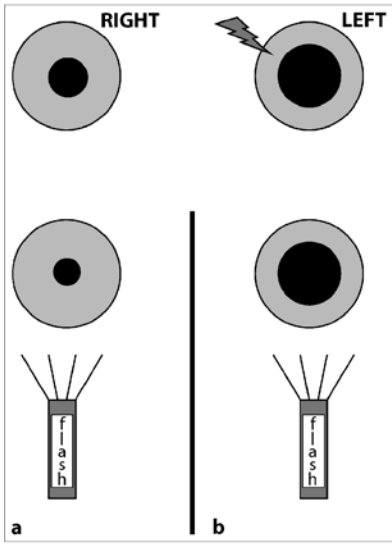
The *VEP* is able to monitor the changes after optic nerve trauma [13].

1.9.3.4 Miscellaneous Other Tests

1.9.3.4.1 Motility

The most important indication of motility testing is a suspected orbital injury [11]. Direct muscle or cranial nerve trauma is rare, and if the ophthalmoplegia cannot be explained by adnexal or orbital injury, a neurosurgeon should be consulted to rule out a central origin. Severe lid edema or orbital hemorrhage, or the lack of patient cooperation, makes the motility test impossible to conduct. If orbital wall fracture with muscle entrapment is suspected and open globe injury can be ruled out, the forced duction test [8, 17] should be performed to distinguish nerve/muscle trauma from entrapment (see Chap. 4.4).

11 Traumatic Horner's syndrome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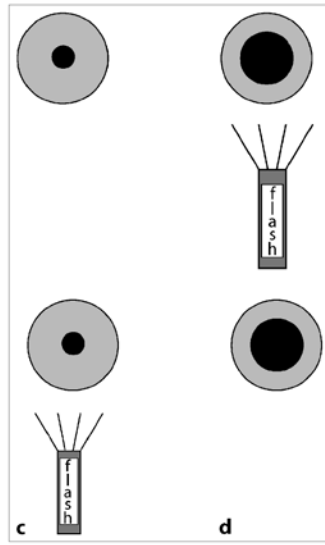
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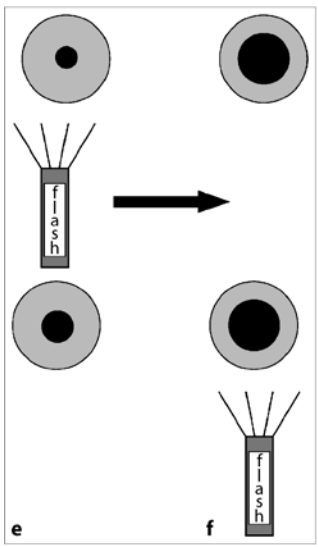
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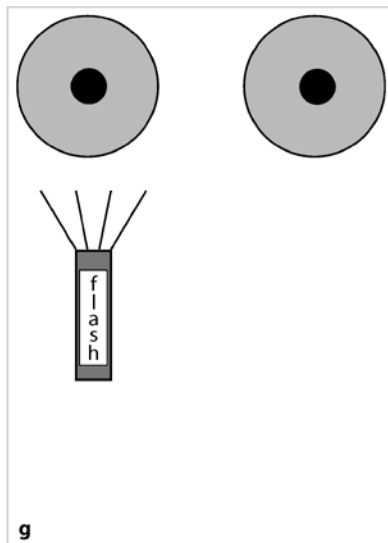
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Fig. 1.9.1 Differential diagnostics in case of a dilated pupil.[1] **a** The left eye is injured and has a dilated pupil; the right eye is not injured. **b** The left pupil does not react to light shone *separately* into the two eyes. **c** If the *afferentation* in the left eye is intact, the right eye's pupil will react to the light shone into the left eye (consensual reaction). **d** If the light is shone into the right eye and the left pupil remains dilated, *efferentation* or a local pathology is the problem (see Table 2.6.1). **e**,**f** Diagnosis of an APD. By swinging the flashlight between the two eyes and observing the right eye from which the light is moved over to the left eye, the right pupil's dilation is noticed since it now does not receive consensual signal from the left eye. **g** If in the left the *efferentation* is unaffected (and there is no local pathology, see above) and the light is shone into the right eye, the left pupil also reacts via the consensual reaction

[1] In the scenario shown here, normal conditions are present in the right eye.

1.9.3.4.2 IOP[12]

- In case of an *acute* injury, a low IOP (or palpation estimate) may be found, suggestive of an occult rupture; however, a normal or even higher value does not rule out the presence of an open wound: the wound can spontaneously close and an intraocular hemorrhage can actually elevate the IOP.

Pearl

Treatment decisions should therefore not be based on whether the IOP is normal, low, or high.

In *chronic* cases, IOP elevation can be caused by many factors. Its proper treatment is one of the more neglected aspects of ocular traumatology (see Chap. 2.18).

1.9.3.5 External Inspection

First under bright diffuse illumination, then with a penlight, the periocular regions as well as the globes should be meticulously evaluated. The exami-

12 Tonometry should be performed only in eyes without a visible open wound.

nation is made much easier if the fellow eye/periocular regions are normal and can be used for comparison.

- Inspect the periocular region for wounds, hemorrhages, edema, ptosis, FBs, and any bony asymmetry or step-off deformity.
- Examine the eye's position (eso/exo/hypo/hyperphoria) and location (sideways dislocation, enophthalmos, or exophthalmos). Looking at the patient's forehead from above is a good indication of whether the eye is pushed inward or outward, but the Hertel prism yields an accurate and reproducible measurement. The globe may also luxate in front of the lids.
- Inspect the globe for wounds, tissue prolapse, chemosis, hemorrhage, and FBs, both superficial and protruding. If the lids are swollen, careful exploration using a speculum/lid retractor[13] may be performed if the patient cooperates. If the swelling is very severe, it may be impossible to open them without exerting major pressure on the globe. In such cases ice packs and corticosteroid ointment should be applied to reduce the swelling as rapidly as possible.

Cave

If the lids are swollen, an assistant should help to hold the lids apart. The pressure must be exerted over the bone, never over the globe (Fig. 1.9.2).

- Periocular subcutaneous hemorrhage, especially if it is fairly symmetrical and bilateral, should always raise the possibility of skull basis fracture.
- Liquorrhea may also be found and should be treated as an emergency.

The lids may have to everted to allow gross examination of the tarsal conjunctiva (see Chap. 2.1).

13 See Chap. 2.1 for retractor use.

Gentle *palpation* of the periocular region is an often neglected part of the examination. Palpation can help finding bone dislocation and subcutaneous foreign bodies and air. It can also elicit pain, which signifies an underlying pathology. Estimating the IOP may also be an indication for palpation if the traditional methods of pressure-taking are not feasible (see above).

- If bone asymmetry is found, testing for infraorbital hypo/anesthesia is recommended.
- If the lids are swollen without a proportional hemorrhage being present, palpate for crepitus. If crepitation is found, forbid nose-blowing, and ask for ear–nose–throat consultation.

1.9.3.6 Slit Lamp

The slit lamp is able to provide crucial information on the periocular soft tissues and the anterior segment of the globe (Fig. 1.9.3) [9],[14] even the anterior vitreous.

When examining the cornea, it may be necessary to determine whether a recent wound is self-sealing or it leaks. The Seidel test is performed by momentarily inserting a wet fluorescein strip into the conjunctival cul-de-sac, and examining the ocular surface under blue light. If there is aqueous leak,[15] the fairly stagnant yellowish dye cover is broken by a green stream originating from the wound.

Chapter 2.2 provides additional details on how to use the slit lamp to examine the cornea and how to utilize certain vital stains. Retroillumination is a very useful technique to show pathologies such as pigment deposits on the lens surface, loss of iris pigmentation, occluded iridectomy, or lens subluxation.

If the lids can be separated and the media are clear, the vitreous and the retina can be examined with a 90-diopter lens. The image is erect and has

14 Virtually all conditions listed in Chaps. 2.1–2.7, and many in Chaps. 2.11–2.15 are diagnosed using the slit lamp; see these chapters for further information.

15 Mild pressure on the globe may be necessary to "provoke" the leak.


a


b


c

Fig. 1.9.3 Slit-lamp evaluation of the cornea A superficial corneal FB is being identified. The angle and power of illumination are adjusted by the examiner's left hand

Fig. 1.9.2 Spreading the lids for inspection.[1] **a** The assistant's fingers are gently placed over the lids; the patient is asked not to squeeze; the lids are carefully pulled apart. **b** Now that the fissure is open, pressure can be applied to keep the lids in this position. Notice that this pressure is over the orbital bones, not over the globe.[2] **c** A combination of using a finger and a Desmarres lid retractor may also be utilized (Photograph courtesy of D. Kalra, Panchkula, India)

[1] Gloves must be worn if blood is present; the use of gauze is helpful if the lids are slippery.

[2] Even if an open globe injury were present, the intraocular contents are unlikely to be extruded due to the lack of external pressure on the eye itself.

a higher magnification than ophthalmoscopy, allowing evaluation of finer details. The angle and the retinal periphery can be examined with a three-mirror contact lens, although this examination should not be performed if the injury is open globe.

1.9.3.7 Ophthalmoscopy

Unless media opacity interfere, the indirect ophthalmoscope[16] is able to provide a wealth of information on the vitreous and retina. The image is inverted but 3D and a large area[17] of the vitreous and retina can simultaneously be observed. By directing the patient to move the eye side to side and up and down, the dynamic components of certain vitreoretinal pathologies can be observed. The test is ideally performed with the patient in a supine position (Fig. 1.9.4) to spare the ophthalmologist of uncomfortable body postures.

Scleral indentation should be used only if the examiner is first able to rule out the presence of an open wound.

1.9.3.8 Imaging Studies

Whether and which type of imaging test to use is not always an easy decision. The indication is primarily for diagnostic but also for medicolegal purposes. It is important to realize that no test is 100% reliable; therefore, the test results must always be interpreted within the context of the entirety of the specific situation. The inability to identify an IOFB does not necessarily mean that none is present (see below); conversely, a test may be false positive. If the test is negative but history is strongly suggestive, the surgeon should presume that history is correct.

16 Obviously, a binocular ophthalmoscope is used.

17 The size of the area and the magnification also depend on the power (20 or 28 D) of the double aspheric lens used.

Fig. 1.9.4 The proper technique of indirect ophthalmoscopy. The ophthalmologist is standing with a straight back. The patient is in a supine position, and his head is slightly elevated

1.9.3.8.1 Ultrasonography

In the hands of an experienced examiner, the B-scan is a reliable method to demonstrate both static and dynamic pathologies of the eye. A series of tests conducted over time allows observing how the condition progresses.

Pearl

Ultrasonography should be performed by the surgeon who is in the best position to correlate the test's results with the clinical findings.

With improving technology (20-MHz transducer), high-resolution images can be obtained [2], revealing information about the presence/absence of:

- Eye wall wounds
- IOFBs (whether these are radiolucent or opaque)
- Lens/IOL dislocation

- Condition of the posterior lens capsule
- Vitreous hemorrhage and other opacities (e.g., due to endophthalmitis)
- PVD[18]
- Vitreous incarceration into a wound
- Vitreous mobility and vitreoretinal adhesions
- Retinal breaks
- Retinal detachment, distinguishing between serous, tractional, and hemorrhagic
- Choroidal thickening/detachment

Cave

Even an experienced trauma surgeon may not be able to differentiate on the B scan between a PVD and a detached retina in an eye with dense hemorrhage (Fig. 1.9.5); other diagnostic traps also exist in ultrasonography of the injured eye (Fig. 1.9.6).

A contact method, ultrasonography is risky if the eye has an open globe injury. Although under sterile conditions and with great care it is possible to conduct the test, tissue extrusion and contamination remain a concern.[19]

1.9.3.8.1.1 Ultrasound Biomicroscopy

This test may be the sole method[20] of identifying distinct anterior segment pathologies such as IOL haptic dislocation, presence of an IOFB at the iris root, ciliary epithelium detachment, or trabecular meshwork tearing [3]. It is also the best method to diagnose a cyclodialysis (see Chap. 2.8). The test is not recommended if the injury is open globe, and, to prevent an iat-

18 The usefulness of ultrasonography is highly questionable (see Chap. 2.9 and Fig. 1.9.5).

19 A safer alternative is to utilize it in the OR under sterile conditions after the wound has been sutured.

20 Noninvasive; endoscopy (see Chap. 2.20) is an invasive alternative.

rogenic hemorrhage, pressure on the eye should not be exerted even if the injury is a contusion.

1.9.3.8.2 X-ray

Once a mainstay of detecting otherwise invisible pathologies, such as an IOFB in eyes with vitreous hemorrhage, the test is rarely used today because of a high false-negative reading rate [15].

1.9.3.8.3 Computed Tomography

Modern (helical) CTs constitute the most accurate and thus most often used radiological method in evaluating the injured eye and especially the orbit [10, 12]. The noncontact test is able to determine the presence/absence of:

- Optic nerve damage
- Orbital and facial fractures
- Orbital pathologies such as hemorrhage, abscess, air
- Extraocular muscle damage

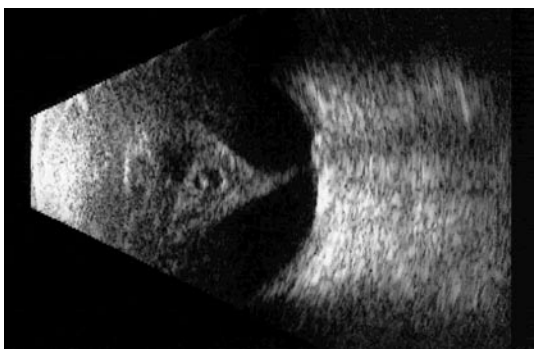

Fig. 1.9.5 Ultrasonography of a severely injured eye: PVD or a retinal detachment? The interpretation of the test in this 9-year-old boy who sustained a rupture was "total retinal detachment inserting on the optic nerve; retina very thin at insertion." During surgery, no retinal detachment was found after the vitreous hemorrhage had been removed

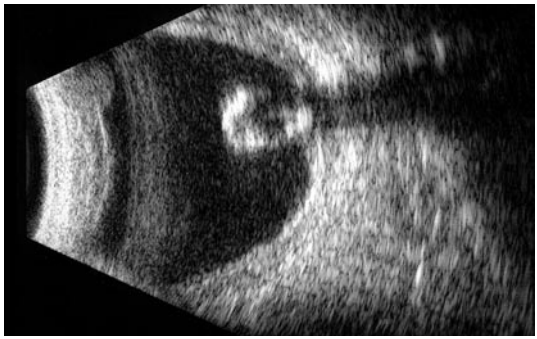

Fig. 1.9.6 Ultrasound image of an "IOFB." The patient had a chronic IOFB injury. The eye was aphakic but vitreous hemorrhage prevented direct inspection of the posterior pole. The mass suspected to be the IOFB on the ultrasonogram proved to be the calcified crystalline lens. The IOFB has dissolved over time and was not found during surgery

- Intraorbital and intraocular FBs[21]
- Occult scleral wounds
- Certain additional intraocular pathologies (e.g., intraocular air, lens damage, vitreous hemorrhage, retinal detachment)

The radiologist should always be consulted about the expected pathology so that he can set the parameters (thickness of cuts or, occasionally, the use of contrast materials if vascular trauma is suspected) of the test accordingly. Figures 1.9.7–1.9.9 show various pathologies detected on CT.

Cave

Although CT is a very sensitive method for detecting a wide variety of pathologies, a negative test reading should not be considered as an absolute indicator that a pathology (i.e., an IOFB) is not present.

21 The surgeon must be careful when interpreting the CT measurements of an IOFB: the test overestimates the real IOFB size by 17–129%; the enlargement factor depends on the composition of the IOFB (D. Briscoe et al., in press).

1.9.3.8.4 Magnetic Resonance Imaging

Pearl

The test provides superior images of all soft tissues (Fig. 1.9.10), and can detect very small nonmetallic[22] IOFBs [20]. It is expensive, though, and some patients may object to it for feeling claustrophobic "in the tube."

1.9.3.8.5 OCT

While an increasingly important diagnostic tool, the use of OCT in acute trauma cases is extremely limited. The method is exceptionally effective, however, in identifying several pathologies (e.g., macular hole, EMP) that can be surgically treated or in showing the spontaneous resolution of such pathologies [1]. High-speed, ultra-high-resolution OCT offers to delineate details never captured before [19].

1.9.3.9 Exploratory Surgery

- In the *acute* phase following the injury, even advanced diagnostic testing may not allow determining whether an occult scleral rupture is present (see Chap. 2.12).
- In such cases the patient should be taken to the OR to verify whether the sclera is intact. Topical anesthesia is usually sufficient[23] to allow opening of the conjunctiva, and draining the blood or removing the clot. Inspection of the sclera far posterior to the equator is dangerous and should not be attempted (see Chap. 2.3).
- In the *subacute* phase (a few days postinjury), the severity of the intraocular damage needs to be determined.

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22 It is contraindicated to use MRI in cases of magnetic IOFBs since they can easily be mobilized, risking severe additional injury. Metallic object elsewhere in the body (e.g., pacemakers) are also prohibitive.

23 If extensive manipulations are deemed necessary, other forms of anesthesia are available (see Chap. 1.8).

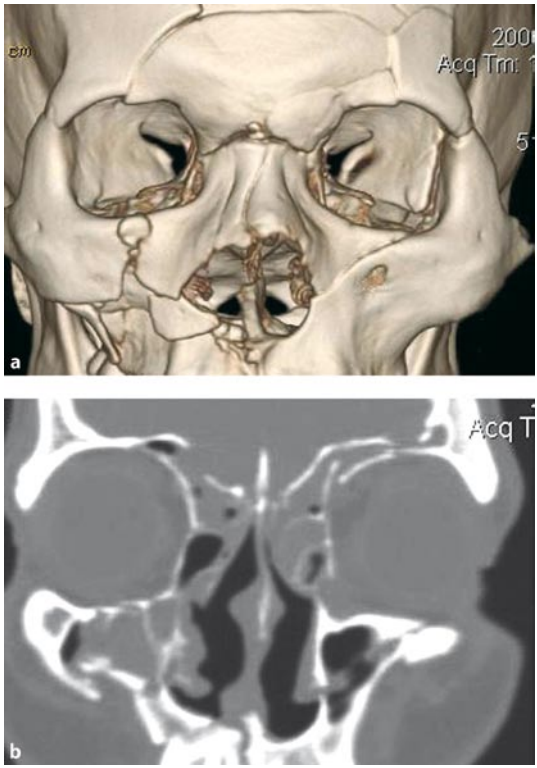

Fig. 1.9.7 CT imaging of multiple cranial fractures (Lefort III). A young male was involved in an MVC. Several fractures are visible, involving, among others, the orbital rim. **a** Coronal image; **b** three-dimensional reconstruction (Courtesy of A. Palkó, Szeged, Hungary)

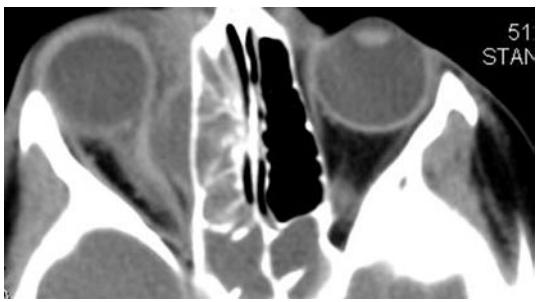

Fig. 1.9.8 CT image of an orbital abscess. An abscess is seen nasally in the right orbit, originating from a fracture of the lamina papiracea (not visible) (Courtesy of A. Palkó, Szeged, Hungary)

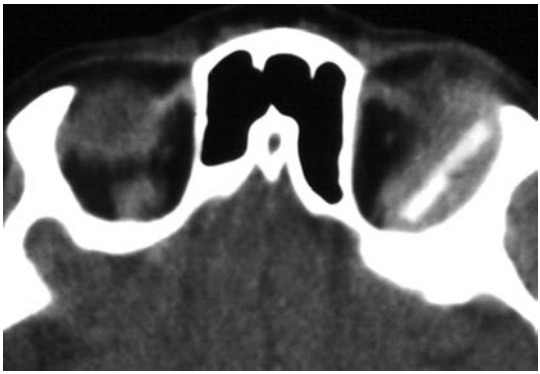

Fig. 1.9.9 CT image of an orbital FB. The hyperdense object (windshield glass fragment) in the left orbit measures 2×2×20 mm on the scan (Courtesy of A. Palkó, Szeged, Hungary)

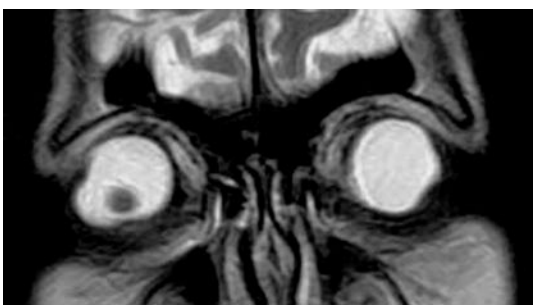

Fig. 1.9.10 An MRI of lens luxation. The accidental discovery[1] of luxation of the right lens; there is no accompanying vitreous hemorrhage. T2 coronal image (Courtesy of A. Palkó, Szeged, Hungary)

[1]The test was conducted for a different disease.

- *Exploratory vitrectomy* can be performed to visualize the postequatorial retina and the optic disc; this alone is a somewhat curative effort since the vitreous hemorrhage must be removed first. The technique is described in Chaps 1.9 and 2.12.

- The *endoscope* may be utilized to in eyes with opaque cornea to allow making an informed decision regarding management (see Chaps. 2.15, 2.20).

Based on the type and extent of the damage found during exploratory surgery, and on the patient's preferences[24], the diagnostic procedure can be extended to become a therapeutic one.

1.9.4 Documentation

As mentioned previously, for both medical and legal purposes it is necessary to meticulously document the information gained during history-taking and examination. In addition to the narrative and the attached test readings, drawings should be made and photographs taken.

To aid in (self-)training and research, both the initial and final outcome data should be reported to a standardized database (www.weironline.org; see Chap. 1.7). Data gathering and analysis of such large data sets are the prerequisite to improve the management of the injured patient.

Further details on evaluation are provided in Chap. 2.11.

DO:

- find the right balance between a patient wanting to describe all minor, often irrelevant, details of the injury vs only letting him answer your questions
- be wary of the possibility of an open globe injury when opening swollen lids
- weigh the usefulness and cost of a diagnostic test before ordering it
- consult with the radiologist before a test is conducted so that he knows exactly what question needs to be answered

24 A detailed discussion of "what to do if we find such and such a pathology" should precede the onset of the procedure (see Chap. 1.4).

DON'T:

- be on "autopilot" when ordering a diagnostic test but tailor it according to the individual case
- neglect entering the case into a standardized eye injury surveillance database

Summary

The purposes of evaluation are to take account of the eye's (patient's) condition as a result of the injury and to gather sufficient information to guide treatment, but also to offer legal protection to the ophthalmologist. The entering of nonidentified data into a surveillance system is crucial for research.

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