Discussions covered in the lecture are a case based approach for working up, diagnosing, and management of common pet fish case presentations. The following adds to your ability to work up the case.

Information gathered by getting a complete history and a thorough physical exam can determine what course of action to take in sick fish. In addition, the history and physical exam can sometimes lead to a presumptive diagnosis. There are many types of fish clients and it is important to try to gain an understanding of their needs, level of experience in fish keeping and understanding of fish health. An effective history should be tailored to meet the needs and expertise of the type of client involved in addition to the specific problem presented.

**BASIC HISTORY**

A basic history for fish problems includes details on the environment i.e. tank(s) or pond(s); the species and number of fish; husbandry and management practices; the presenting problem; and information on previous attempts to correct the problem.

**Environmental Assessment**

In a complete fish health assessment, details on the aquatic environment, life support equipment, and the variety of the tank or pond population are critical. Most problems in pet fish are due to chronic stress. Poor water quality is the most common cause of stress. If an onsite visit is not possible, clients can be instructed to send or bring in clear digital and video images of the environment and life support equipment.

**Patient history**

Taking a specific history of the fish patient involves similar questions to those asked in histories of terrestrial species with a few exceptions. Most owners do not have a problem recognizing the significance of behavioral changes such as anorexia, lethargy, and neurologic disease in terrestrial species such as dogs and cats, but may fail to notice the importance of the same abnormalities (or even recognize some abnormalities) in their fish. The questions should always be geared towards the owner’s level of expertise and understanding. For example, a question on the presence of “flashing” may not yield the correct answer if the owner does not understand the term.

**PHYSICAL EXAMINATION**

A comprehensive physical examination of the fish patient includes an environmental examination including evaluation of water quality and assessment of life support systems, indirect visual examination of the patient(s), and a direct “hands-on” examination.

**Environmental examination**

Water quality evaluation is recommended for all sick fish, regardless of the presenting problem. Many owners will admit to having the water tested elsewhere and report the parameters were “all normal”. It is important to get specific, numerical values for each parameter. In general, it is best to repeat the water quality tests and include parameters that may not have been evaluated, such as dissolved oxygen, alkalinity, salinity, and nitrates.

Whenever possible, an onsite evaluation of the environment is recommended. Life support systems must be checked to ensure that they are adequate in size, what condition they are in (clean, filthy,
damaged, etc.), and what maintenance procedures are being performed. Many owners, particularly those with pond fish, are heavily influenced by current trends and fads in filtration systems and other equipment that may be inadequate, undersized, and ineffective for their facility. Aquaria should each have their own filtration systems and not be connected via common filter system.

Fish owners may not be aware of any deficiencies or may attribute known deficiencies to poor health in their fish.

**Indirect physical examination:**

An initial evaluation and observation should be performed with the fish in its own environment or failing that, in the transport container prior to any handling. Details of the fish’s position in the water column, orientation and swimming behavior, and reaction to external stimuli should be noted in addition to the location of visible lesions. Body condition scoring and any asymmetry are also noted on the initial exam. This information should be compared to the appearance and behavior of clinically normal fish in the same environment.

A camera is a valuable tool for documenting lesions and the overall general appearance of the fish. Digital images of lesions and abnormal behavior or posture can be retained for future reference and can also be included with any samples submitted for histological examination.

**Direct physical examination**

Direct physical examination of the fish may require some degree of sedation or anesthesia to facilitate the examination, reduce handling stress to the patient(s), and minimize further injury. It may be possible to examine debilitated, weak or very small fish without sedation. Tricaine methanesulfonate, MS-222, is the only US Food and Drug Administration (FDA) approved anesthetic for finfish.

The use of rinsed, unpowdered latex or vinyl gloves is recommended when examining fish. The gloves offer some protection against zoonotic diseases and protect the delicate mucous layer of the fish.

It is very important to have a good grasp of the fish or to perform the examination over a container of water. Fish can be slippery and it is not uncommon to accidentally “drop” the fish. Owners do not take kindly to this and appreciate all steps taken to protect their pet from further injury. If the examination takes more than one or two minutes, the fish should periodically be placed in water or irrigated with water to prevent desiccation of the external surfaces.

A systematic, thorough method of examination should be used on all fish patients. The author prefers the “head to tail” method. Oral examination can be accomplished with an otoscope and cone in small fish but larger fish need a high-quality flashlight to visualize the full depths of their oral cavity. Gravel, stones, and tank décor are common foreign body objects that may be seen lodged in the oral cavity. Chronic obstruction of the oral cavity or pharynx may result in discoloration or an ulcer on the ventral aspect of the pharyngeal region. A penlight or flashlight should also be used to evaluate the eyes. Fish with prominent eyes or pendulous eyes (bubble eyed goldfish) frequently experience traumatic injuries. Fluorescein dye can be used in fish to visualize corneal injury.

The gills are best visualized by lifting the operculum, either gently with a thumb or sterile cotton swab. Grossly, the gills should appear dark red with no mottling, masses, or ragged edges. Pale gills can be indicative of anemia and patchy areas of focal necrosis are sometimes seen in koi herpesvirus (KHV) infections.

The fins and tail are examined for ragged edges suggestive of “fin rot”, splitting, red streaking, hyperemia and parasites. Any lesions on the skin, such as ulcers, edema, lacerations, discoloration,
and missing scales should be noted. It is important to check the ventral aspect for lesions that may not have been initially visible to the owner or on indirect examination.

The coelomic cavity can be palpated gently for evidence of fluid accumulation, masses, and foreign bodies. Gentle expression of the area cranial to the vent in adequately sized fish can cause the release of eggs or milt, enabling sex identification in some species (koi and goldfish for example).

Following a complete examination, non-lethal diagnostic procedures can be performed while the fish is still sedated or anesthetized.

Further reading:


