

Basic dentistry – the best equipment for the best job



Veterinary dentistry has long been a neglected field in medicine but with increased knowledge, better equipment and increased awareness, dentistry is quickly becoming a profitable part of the practice, providing as much as 20% of the clinic's annual revenue, writes Ingela Ericsson BA BSc VN

Apart from a general good knowledge of veterinary dentistry, the equipment used will determine whether or not your dentistry work is profitable, efficient and satisfactory.

DENTAL RADIOGRAPHY

A tooth is like an iceberg, with two thirds of the tooth hidden below the gumline. Without dental X-ray, it is impossible to make a proper dental assessment and diagnosis or address dental pathology in a safe and efficient manner. Dental radiography can also be a useful tool in helping convince the owner of their pet's need for dental treatment.

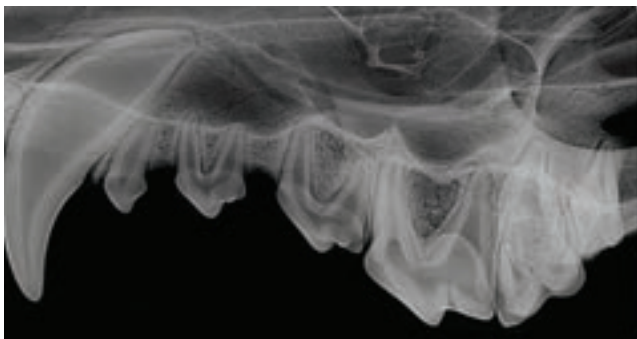


Figure 1: X-ray captured using size 5 CR image plate.

DENTAL UNIT

A dental unit with a pressurised air/water delivery system to a high- and low-speed handpiece, three-way syringe and a mechanical scaler should be the staple of every veterinary practice. The low-speed feature is used for polishing and advanced surgical work. The high-speed handpiece, on the other hand, enables efficient sectioning through the hard tooth structure. The high-speed should have coolant water to keep the bur cool and lubricated and prevent thermal injury to the patient.



Figure 2: Dental unit.

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DENTAL X-RAY



ULTRASONIC SCALER



DENTAL TABLES



DENTAL INSTRUMENTS



CONSUMABLES



HOME CARE



BURS

An assortment of round, fissure and finishing burs to suit a variety of teeth and work should be at hand during dental procedures. Fissure burs have an elongated twisted cutting surface and are used when sectioning teeth. Round burs are used to remove bone to expose roots and to level off bony spurs – not for ‘pummelling retained roots’. Burs are single use. Dentine is hard and will wear the bur. Reusing burs will result in excess force being applied, causing increased heat and potentially causing nerve damage, pulpitis, post-operative pain and will most definitely damage the hand piece, break the bur, cause great frustration and costs in repairs or new handpieces.

MECHANICAL SCALERS

Most common scalers remove plaque and tartar from the tooth surface by means of mechanical action. Never use the very tip of these scalers as they will damage the tooth’s enamel surface. The tip also generates heat so keep moving it horizontally across the tooth surface and never work on a single tooth for more than a few seconds. Use enough coolant water to prevent thermal injury to the vital pulp structure.



Figure 3: Mechanical scaler.

HAND INSTRUMENTS

Tartar-removing forceps

The tartar-removing forceps has one straight end and one bent. Gentle pressure applied to tartar with the point will cause it to crack and come away from the tooth surface. Using an extraction forceps to remove tartar, if not careful, may cause enamel damage and potentially tooth fractures.



Figure 4: Tartar-removing forceps.

Perio instruments

Perio instruments are long, thin and sharp (or so they should be) instruments commonly left at the bottom of the instrument tray. The probe is used to measure pocket depth and have small mm annotations along its length. The explorer is shaped like a shepherd’s hook and is used to detect enamel defects. Sickle scalers and curettes are deceptively confusing, both in shape and use. The sickle scaler is shaped as, you guessed it, a sickle. It’s used as a manual scaler on the supragingival surface to remove the hard but porous mineralised plaque. The curette one the other hand is used subgingivally, to remove the hard and dense calculus which a mechanical scaler can’t reach. The instrument has a more L-shaped look with a very fine end to allow for subgingival access.

Luxators & elevators

The main difference between these is their function. Luxators are used to cut down along the dental ligament to sever the attachment between bone and tooth structure. The luxator must be sharp, straight and thin. A wide range of sizes should be available for different sized teeth. Elevators, on the other hand, are used to apply gentle (yes, gentle) rotating force at the apex of the tooth in order to free the tooth from its socket. You should match the size of elevator to the size of the tooth for control and torque force. Both Luxators and elevators should fit comfortably in your hand. The handle should rest within the palm and your index finger reach the tip of the shaft for control. Too large a handle and it puts strain on muscles and tendons and too long a shaft and you lose control of the instrument.



Figure 5: Luxators.



Periosteal elevators

These are small, sharp and spoon shaped instruments used to help elevate the gingival flap to expose the underlying bone structure.

Extraction forceps & root fragment forceps

The extraction forceps can be either straight or curved and is used to extract the tooth once elevated. It is not intended to be used for pulling, twisting or forcing the tooth out but as an aid to gently pry it free. Root fragment forceps are fine tipped instruments used to carefully remove broken root fragments.

MAINTAINING YOUR EQUIPMENT

Dental X-ray equipment should be cleaned between patients and care should be taken not to reuse consumable items for risk of damaging the more expensive parts or transferring disease between patients.

The dental unit, depending on make, should be serviced once a year. Some dental units require a service technician visiting, others can be serviced by the clinic staff themselves. Maintenance, however, should be carried out daily and sometimes between patients. It is good practice to develop a maintenance protocol that outlines daily, weekly and annual care.

CARE OF HANDPIECES

Your hand pieces contain delicate internal components and should be maintained in accordance with the manufacturer's instructions. At a minimum, the handpieces should be thoroughly cleaned, disinfected and lubricated between each patient. Ideally multiple hand pieces should be at your disposal to minimise the risk of transmission of

disease between patients.

When oiling your handpiece, apply amount according to instructions and run the handpiece on the dental unit for 30 seconds to ensure the oil is distributed throughout the handpiece and into the turbine.

Scaler tips should be cleaned and autoclaved between use. Depending on make, the handpiece itself can often be autoclaved. The tips for the scaler will wear with use and will need to be changed frequently to prevent thermal burns and enamel damage.

HAND INSTRUMENTS

Would you perform surgery with a blunt scalpel blade? Dental extractions are classified as and should be treated as a surgical procedure. It is important to maintain the hand instruments as you would any other commonly used surgical instruments. Working with blunt instruments puts both the user and the patient at risk.

To ensure that your instruments are kept sharp you need a good quality sharpening stone. Depending on type of stone, these can be used with water, oil or dry or all of the above. There are numerous YouTube clips teaching sharpening techniques, but the best advice is to stick with the manufacturer's instructions or contact the seller for advice.

Luxators and elevators should be sharpened at the end of every day. Only a few strokes along the sharpening stone is often enough to bring them back to their original sharpness. Other hand instruments such as periosteal elevators, sickle scalers and curettes often only need sharpening once a month.