

Urine Collection Methods

1. Free Catch / Voided Sample

This is the easiest method for the patient, but can be very challenging (depending on the animal) for the urine collector. A clean, dry collection container is placed in the urine stream and urine is directly collected into the container. Ideally, the sample would be from a midstream, clean collection to decrease potential bacterial, cellular and artifactual contamination. In cats, samples are often collected in a clean litter pan with plastic litter and urine aspirated into a syringe or poured into a container. Unfortunately, as urine passes through the urogenital track, it is not uncommon for there to be contamination. Bacterial contamination can result in false positive culture results.

2. Urethral Catheterization

This technique requires knowledge of urogenital anatomy and is a common method of urine collection in male dogs, but is difficult in female dogs. It requires at least two collectors, and may require sedation of the patient. This technique is rarely performed in cats unless a lower urinary tract obstruction is present and generally requires heavy sedation. A sterile prep should be performed on the prepuce (male) and perineal and vaginal (female) areas. All materials should be sterilized and the collector should perform a surgical scrub on their hands and wear gloves. Such precautions are to minimize the risk of bacterial contamination of the urine sample as well as iatrogenic infection. In the male, the penis should be expressed for access to the urethra. A urinary catheter is inserted in the distal end of the urethra and gently fed up the urethra into the urinary bladder. It is often recommended to discard the initial volume of urine obtained to minimize contamination from the lower urinary tract.

3. Cystocentesis

This is the recommended way to obtain urine for most laboratory testing, particularly for culture. Before puncturing the bladder through the abdominal wall, it is important to check its size, so careful palpation of the urinary bladder should always be done prior to sample collection. This may be difficult in tense or obese animals or if the bladder is small. Once the bladder is palpated, it is isolated with one hand while a fine-gauge needle is guided at a 45° angle into the bladder via the abdominal wall and a urine sample is aspirated. Depending on the size and gender of the animal, as well as the preference of the collector, the animal can be positioned on its back, in lateral recumbency, standing or propped up on its hind legs. The area should be disinfected. Urine collected by cystocentesis avoids the risk of lower urinary tract contamination noted more frequently in the other urine collection techniques and is the method of choice if bacterial culture of the urine is required. If ultrasonography is available, cystocentesis can be easily performed in animals where bladder palpation is difficult and offers the unique advantage of assessing the bladder wall as well as checking for stones or masses within the urinary bladder.

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