Comment to “Urinary tract disease in dogs: US findings. A mini-pictorial essay”

by G. Robotti and D. Lanfranchi, J Ultrasound (2013) 16:93–96,
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Dear Editor,

We would like to thank you sincerely for having published a new article concerning veterinary ultrasonography (“Urinary tract disease in dogs: US findings. A mini-pictorial essay”, by G. Robotti and D. Lanfranchi) in the *Journal of Ultrasound* [1].

Actually we believe that some of the statements contained in this article are worthy of clarification.

In spite of the title declaring a synthetic review of pathological ultrasonographic features of canine urinary tract, the inaccuracies expressed are inferior only to the omissions, as everybody can note reading any chapter concerning the canine urinary tract in any atlas or text of small animals veterinary ultrasonography [2].

In the introduction, the authors express subjective considerations that appear rather strange in a scientific journal, such as “Shaving of the dog’s fur is time-consuming and may prevent the decision to evaluate contralateral structures, particularly if not foreseen before the examination, as contralateral shaving is difficult during the examination.” Hair clipping of the cranioventral abdomen, from the costal arch cranially to the inguinal region caudally and laterally along the body wall is mandatory, prior to performing the examination of every abdominal organ, just to allow a proper assessment of all structures of interest [3].

Particularly striking is the assertion that “The psychological aspect of shaving should furthermore not be underestimated, as it may be seen as defacement, albeit minimal, both by the owner and the animal itself.” In literature an increasing number of papers concerning cognitive abilities of dogs are available, but not one showing that the dogs have a consciousness of their own aesthetic is available. Moreover, it is still doubtful that a dog can recognize himself in a mirror [4].

The chapter concerning the ultrasonographic features of the canine bladder is mostly dedicated to cystolithiasis. Certainly, urolithiasis is very common in dogs, but the literature cited refers to a quantitative and qualitative analysis of uroliths retrieved from animals for more than 2.5 decades, and not to the prevalence of the disease in canine population [5].

Even more, it sounds surprising that “plain abdominal X-rays are required to determine the composition of the urinary calculi”. The authors affirm that “Radiographic features such as radiopacity, morphology, number and dimensions of the calculi can provide a fairly reliable identification of the chemical composition.” In the literature cited, Lulich and Osborne [6] limit to emphasize the complementarity of ultrasonography and radiography and clearly affirm that “survey radiography is suitable for identification of radio-opaque uroliths greater than approximately 2 mm to 3 mm in diameter, contrast enhanced procedures are needed to identify uroliths composed of compounds similar to the radiographic density of soft tissue (e.g., ammonium urate, cystine, xanthine). For these cases, double contrast cystography is the preferred technique...”. Moreover, Lulich and Osborne report that urolith size is not standard for each mineral type, in accordance with Moore [7] who affirms that “radiopaque calculi are typically visible on plain films. The shape of the calculi may vary, according

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to their chemical nature, although this should not be relied upon as a guide to their composition.”

The authors affirm that plain abdominal X-ray is also required in the follow-up after lithotripsy: it appears as if lithotripsy is a common procedure for the treatment of urolithiasis in the dog. In our experience, surgery remains the most common procedure for rapid removal of uroliths from the lower urinary tract of dogs.

US-guided cystocentesis is a common, safe and harmless procedure to collect urine from bladder for the chemical, physical, microbiological and cytological examination. Actually, a neoplastic disease of the bladder could be sometimes assessed by urine cytology, only in case of highly exfoliating tumors such as carcinomas.

We were very surprised to find no reference in the paper to ultrasonographic features of chronic cystitis, proliferative cystitis, emphysematous cystitis, bladder clots, etc.

Prostate is a gland of the male genital system, not of the urinary tract. Actually prostatic diseases are a real problem in the differential diagnosis of the lower urinary tract diseases in the dog, such as vaginal discharge and diseases of the uterus in the female, which has not been considered.

However, prostatic cysts are often found in dogs with concurrent BPH, but also in other prostatic pathologies [8]. Any consideration concerning ultrasonographic features of acute prostatitis, prostatic abscessation or neoplasia has not been reported by the authors.

About prostate biopsy, it would be appropriate to mention also the possibility that it may lead to a metastatic dissemination of the neoplasia through the needle pathway, as reported by Nyland et al. [9].

Renal ultrasonography is probably the first-step technique of imaging in the dog, probably because, compared to a low specificity, it has a high sensitivity to highlight pathologic changes before they can cause clinical or laboratory changes.

These changes are a bit more varied than hydronephrosis cited by the authors. Above all, the term “hydronephrosis” suggests a urinary stasis, probably caused by an occlusive urethral disease, rather than a dilatation of the renal pelvis that perhaps would have been better described by the term “pyelectasia”.

Renal ultrasonography may reveal changes in margins or in cortico-medullary definition, renal cysts, renal infarcts, and much more.

It would be very interesting if the authors could provide more information about the ultrasound-guided administration of antibiotics in the kidney, as the literature cited [10] refers only to the use of ultrasound-guided pyelocentesis for treatment of pyonephrosis in two dogs. In fact, in that paper, Szatmari et al. describe the technique to perform an ultrasound-guided drainage of pus from the dilated pelvis followed by lavage procedures of the pelvis with a 1:9

solution of povidone iodine in 0.9 % sodium chloride, but not the intra-renal administrations of antibiotics which were administered subcutaneously or orally.

It would be also appropriate to make some considerations about the pictures published and their captions.

Which breed the authors refer to the “wolfdog” in the caption of Figs. 2, 5 and 6? A Czechoslovakian wolfdog, an Italian wolfdog, a German shepherd or a *Canis lupus*? [11]. By the way, in none of these breeds the mean weight of an adult dog (7 years old) should be lesser than 30 kg (in the caption the dog’s weight reported is 10 kg)

In the caption of fig. 2 it is reported: “the stone moves according to the dog’s position”. As the authors say, in the English text of the manuscript, “They move within the bladder lumen according to the position due to gravity”, but in the Italian text they say that bladder stones are not gravity-dependant (“formazioni iperecogene con attenuazione posteriore, multiple o singole, antideclivi, mobili al variare del decubito...”); we would like to know in which recumbency was the dog in fig. 2a and in fig. 2b?

Figure 3 relates the operative findings of a pug dog with hematuria, indicating a diagnosis of cystitis and absence of neoplastic cells: I guess this is asserted on the basis of intraoperative histological samples, and I hope that the histological diagnosis is a bit more complex than noted in the caption.

In fig. 5 we really cannot see pyelectasia suggesting “urine stasis” as cited in the caption. Moreover, the right caliper of the longitudinal dimension of the kidney is placed in an area of acoustic shadowing.

In conclusion, we agree with the authors when they say “The veterinary US operator should have access to high-quality US equipment and have a thorough clinical and radiological knowledge on urinary tract diseases in dogs. In addition to this he/she should be familiar with the US appearance of the most important pathologies to identify them without delay.”

Despite what we read, we know that most of veterinary US operators have an excellent knowledge not only on urinary tract diseases of the dogs, but also in small animal internal medicine.

With unchanged respect and appreciation for your journal.

Conflict of interest Stefano Faverzani and Mario Cipone declare that they have no conflict of interest.

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