

Is that really a urinary tract infection?

Urine is often submitted for microbiological evaluation when investigating lower urinary tract disease in cats and dogs. In these cases, culture should always be accompanied by a complete urinalysis including a urinary sediment examination, and ideally should only be performed on a cystocentesis sample.

The growth of bacteria following culture of a urine sample may reflect a true infection or contamination from the lower urinary tract. Collection of urine by cystocentesis rather than free-catch or via catheterization reduces the chances of sample contamination, making interpretation of the significance of a positive culture far easier. An examination of the urinary sediment can confirm inflammation which supports the presence of an infectious aetiology when bacteria are cultured. Note, however, that inflammation may also accompany sterile inflammatory conditions such as urolithiasis, neoplasia and feline idiopathic cystitis.

Infection is uncommon in the absence of an inflammatory reaction, but can be seen in cases of hyperadrenocorticism or diabetes mellitus, and in immunocompromised patients. Patients with pyelonephritis may also show a relatively inactive sediment. If urinary tract infection is strongly suspected clinically in such patients, culture is indicated even in the face of a quiet sediment.

A positive culture in an asymptomatic patient typically does not warrant therapy; however, the entire clinical picture and the type of bacterial growth should be taken into consideration when deciding if antibiotics are appropriate.

Although culture is considered the gold standard for detecting a urinary tract infection (UTI) a negative culture in the presence of infection can occur. Non-viable organisms may be present in animal that have recently been on antibiotics, in urine exposed to high temperatures during transit, or due to the presence of numerous leukocytes in the urine sample. Rarely, a UTI may be due to anaerobic bacteria and the organisms won't grow on aerobic plates and occasionally bacteria simply don't grow.

Findings	Potential Interpretations
<ul style="list-style-type: none"> Inflammation in the sediment Positive culture 	<ul style="list-style-type: none"> Consistent with a UTI ± other urinary tract disease (eg neoplasia, urolithiasis)
<ul style="list-style-type: none"> Inflammation in the sediment Negative culture 	<ul style="list-style-type: none"> Not a UTI (e.g.feline idiopathic cystitis, urolithiasis, neoplasia) UTI is present but bacteria are dead
<ul style="list-style-type: none"> No inflammation in the sediment Positive culture 	<ul style="list-style-type: none"> Contamination from the lower urinary tract Animal is immunosuppressed, diabetes mellitus, hyperadrenocorticism Pyelonephritis
<ul style="list-style-type: none"> No inflammation in the sediment Negative culture 	<ul style="list-style-type: none"> UTI is unlikely