What is Your Diagnosis

Pranee Tuntivanich Suwicha Chuthatep

Signalment

A 1-year-old male domestic short-haired cat.

History

The cat was hit by a car 2 hours ago. He had refused to use both hindlimbs and had not urinated since the accident occurred. Signs of respiratory distress could not be found.

Clinical Examination

There was large area of soft tissue swelling in the right femur. Sharp tips of the fragments underneath the fracture site could be detected from palpation. Mild abdominal distension due to an extended urinary bladder could also be palpated.

Radiographic Examination

Abdominal radiographs of the right lateral and ventrodorsal views were taken. Positive contrast retrograde urethro-cystography was performed to evaluate morphology of the urethra and the urinary bladder.

(1A)

(2)

(1B)

Figure 1. A, B. Plain right lateral and ventrodorsal abdominal radiographs.

Figure 2. A positive contrast retrograde urethro-cystograph of the right lateral abdomen.

Give your diagnosis and turn to the next page.

Department of Surgery, Faculty of Veterinary Science, Chulalongkorn University, Bangkok 10330, Thailand

Radiographic findings

Plain radiographs (Figs. 1A, B) reveal a mild cranial displacement of the urinary bladder silhouette. There are several bony fragments including the right wing of ilium and the right midshaft of femur. Small amount of subcutaneous gas is also found surrounding the fractured area in the right femur. Positive contrast retrograde urethro-cystographs (Figs. 2, 3) demonstrate contrast medium filled in urinary bladder (a) and extravasated into peritoneal cavity around the neck of urinary bladder (small black arrows). The urethra (large black arrows) and ureter (large white arrows) are easily detected due to contrast medium filled in their lumens.

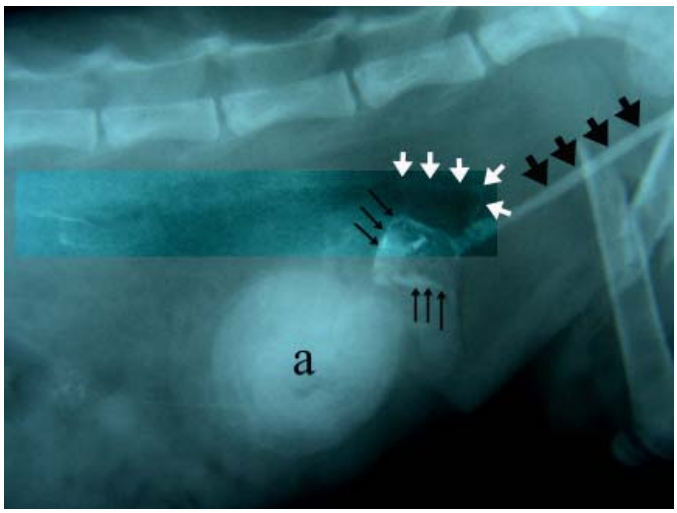

Figure 3. Positive contrast retrograde urethro-cystograph which is focused on the neck of bladder.

Radiographic diagnosis

Urinary bladder rupture, Fracture of the right wing of ilium and right femur.

Discussion

The urinary bladder has a pear shape, with narrow neck located caudally to the body. It varies in size according to the degree of distension. Neck of the urinary bladder in cats and male dogs is normally long and well defined. The serosal surface of the urinary bladder can be visualized due to intraperitoneal fat deposits. In female dogs and cats, the urethra which is short and relatively wide runs from the urinary bladder neck to the vestibule. In contrast, it is much longer and thinner in male dogs and cats. In male cats, the urethra runs caudally through the os penis, which is cartilaginous and therefore not visible.

The urethra can be effectively evaluated with a positive contrast retrograde urethro-cystography by using a low concentration of positive contrast medium. This technique may be performed under sedation or general anesthesia to avoid iatrogenic damage to the urogenital tract. Urethro-cystography is not recommended in females in estrus due to the patency of the cervix and the increased vascularity and sensitivity of the vaginal mucosa, unless it is essential. The radiographs should be assessed for the position of the urinary bladder neck, mucosal irregularities or strictures of the urethra, extravasation of contrast, filling defects or abnormal anatomy such as communication within the ureters in case of ectopic ureter.

References

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