History

A 1.5-year-old neutered male British Shorthair cat was evaluated because of a 6-week history of reluctance to walk. The cat was ambulatory but had mild bilateral hind limb lameness, worse on the right side. Signs of discomfort and crepitus on extension of the right hip joint were noted. Standard radiographs of the pelvis and hip joints were obtained under sedation with the cat’s hind limbs in extension (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →
The epiphysis has separated from the metaphysis (black arrowhead). There is a degree of sclerosis of the proximal femoral epiphysis on the right side, which contrasts with an area of osteolysis affecting the adjacent metaphysis. This gives the impression that the epiphysis has separated from the metaphysis (black arrowhead).

**Radiographic Findings and Interpretation**

On the ventrodorsal image, areas of osteolysis affecting the dorsal aspect of both femoral necks are evident. A degree of sclerosis of the proximal femoral epiphysis on the right side contrasts with an area of osteolysis affecting the adjacent metaphysis. This gives the impression that the epiphysis has separated from the metaphysis (Figure 2). Interpretation of the lateral image is limited by superimposition of the hip joints.

A ventrodorsal radiograph of the pelvis and hip joints was taken with the hind limbs in a flexed, or frogleg, position (Figure 3). The flexed ventrodorsal image reveals bilateral proximal femoral physeal fractures in addition to the metaphyseal osteolysis seen on the standard ventrodorsal image. These findings are consistent with feline metaphyseal osteopathy or capital femoral physeal dysplasia.

**Treatment and Outcome**

The cat of the present report was treated by simultaneous bilateral femoral head and neck excision, and at reexamination 1 month after surgery, no signs of lameness were evident.

**Comments**

The use of only standard ventrodorsal and lateral projections of the hip joints may lead to a proportion of femoral neck fractures being missed. The flexed ventrodorsal, or frogleg, view provides an alternative view of the proximal portion of the femur because the positions of the greater and lesser trochanters and physeis are altered. The flexed ventrodorsal view has been shown to be useful in identifying fractures that are not visible on the standard radiographic images of the hip joints. The use of the flexed ventrodorsal view is advisable in cases where findings on standard radiographic images are equivocal and where clinical examination is suggestive of pathological changes of the hip joint. The flexed ventrodorsal view is also useful where extension of the patient's hip joints would be painful. Positioning is straightforward, with the patient in dorsal recumbency; the hind limbs are flexed cranially in a relaxed abducted position. The hind limbs must be positioned symmetrically to allow comparison of radiographic findings between the hip joints.

Feline metaphyseal osteopathy or capital femoral physeal dysplasia was first described in 1994. Seen predominantly in young overweight male cats, the condition is characterized by pathological fracture of the femoral neck. In most cases, there is no history of trauma, and the disease often affects both hip joints. Not uncommonly, cats initially with unilateral disease go on to develop the condition in the other hip joint some months later. Radiographic signs may include loss of definition of the femoral neck, radiolucency within the femoral neck, or a radiolucent line across the femoral neck, and in some cases, the femoral head can be seen to have slipped. The latter 2 findings are diagnostic for separation of the femoral head.

Several etiologies have been suggested for physeal dysplasia, including trauma, avascular necrosis, and osteomyelitis. More recently, histologic studies have suggested that there may be an underlying abnormality of the physeal cartilage. It has also been suggested that the fracture may be the primary lesion and that the osteolytic changes seen radiographically and histologically may occur secondary to this. Most cats with clinical disease are beyond the age at which physeal closure would be expected to have occurred. Early neutering has been shown to delay the closure of growth plates in male cats, and this has been suggested to play a role.

**References**