A case of bilateral patellar osteochondrosis and fracture in a cat

Clinical and histological findings

S. Palierne; F. Palissier; I. Raymond-Leiton; A. Autfage
Ecole Nationale Vétérinaire, University of Toulouse, Department of Clinical Sciences, Small Animal Surgery, Toulouse, France

Keywords
Patella, fracture, osteochondrosis, cat

Summary
Fracture of the patella associated with bilateral osteochondrosis of the superior pole of the patella in a 14-week-old cat is reported with histological findings.

Patellar osteochondrosis has been described in humans, horses, pigs, and dogs and is characterised by incomplete union of the ossification centres related to an abnormal process of enchondral ossification. However, this disease has not yet been described in cats. Macroscopically, two main fragments separated by interposed tissue were identified on the left patella. In contrast, no fracture but only a fissuration of the articular cartilage was observed on the right patella. Bilateral partial patellectomy was performed. Histological examination of the excised fragments from the left patella revealed two main areas of trabecular bone separated by a wide irregular band of hyaline cartilage. The microscopic aspect of the right patella was similar to that of the left. Serial sections showed the initial appearance of an area of necrosis in the central band of hyaline cartilage, and that this hyaline cartilage was subsequently replaced by fibrovascular connective tissue.

These findings indicate that some patellar fractures may be due to patellar osteochondrosis.

Case report
A fourteen-week-old female Domestic Shorthaired cat was presented for consultation at the surgery department of our veterinary college for persistent weight-bearing lameness of the right hindlimb and signs of pain in the left hindlimb that had appeared three days previously, following a slight knock against a table leg during play. A self-resolving three-day episode of lameness in the right hindlimb was observed fifteen days earlier. The general clinical examination did not reveal any abnormalities.

Severe weight-bearing lameness of the right hindlimb was observed. Palpation of both stifles elicited obvious signs of pain, particularly on compression of the patella. Extension and flexion of the stifles induced severe signs of pain and the articular range of motion in extension and flexion was reduced. Palpation did not reveal any joint effusion. There were not any other abnormal findings.

Radiographs of both stifles were obtained under general anaesthesia (standard crano-caudal views and lateral views in the neutral, flexion and extension positions) (Fig. 1). A transverse fracture of the patella with moderate displacement was observed on the left stifle, the proximal fragment being longitudinally divided into a large and a smaller fragment. Radiographs of the right stiffe showed proximal fragmentation of the patella into three fragments of equivalent size with no displacement. These findings were compatible with either a bilateral fracture or an underlying bone disease such as an anomaly of ossification, osteonecrosis or osteochondrosis.

The distances between the main patellar fragments on the flexion and extension radiographs were similar (Fig. 1). The

Introduction
Acute patellar fractures in cats are uncommon and little has been reported on their aetiology and treatment. The fractures are usually transverse stress avulsion fractures, the exact cause of which is still unknown (1). However 'bipartite' or 'tripartite' patellae are occasionally seen on radiographs of the feline stifle; these lesions may result from non-union of a non-displaced patella fracture or an underlying bone disease such as osteochondrosis.

Vet Comp Orthop Traumatol 2010; 23: 128–133
doi:10.3415/VCOT-09-06-0065
Received: June 24, 2009
Accepted: November 1, 2009
Pre published online: February 11, 2010

Sophie Palierne, DVM, MSc, PhD
Ecole Nationale Vétérinaire
23 chemin des Capelles
Toulouse, 31076
France
Phone: +33 561 193 848
Fax: +33 561 193 855
E-mail: s.palierne@envt.fr

Correspondence to: