

WHAT IS YOUR DIAGNOSIS

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Signalment

A 10-year-old spayed female Bangkaew

History

The dog was lame. She could not walk properly during the past 4 months. There were many small bedsores on the skin around the bone protuberances which was caused by the dog's difficulty to rise up.

Clinical Examination

The dog was in pain when hip palpation was being performed. There was a decrease of the range of motion of the right hip joint. Bone crepitation was found while femoral head was rotated during ortholani sign examination.

Radiographic Examination

Plain ventrodorsal and right lateral radiographs of pelvic girdle and hip joints were taken to evaluate pelvic bone and hip abnormalities.



Figure 1, 2 Ventrodorsal and right lateral radiographs of the pelvic and hip joint

Give your diagnosis and turn to the next page.

Radiographic findings

The ventrodorsal radiograph (Fig 1) revealed bone fusion among the left sacral wing, the left transverse process of the last lumbar vertebra and the left wing of ilium. Malformation of the left sacroiliac joint with mild rotation of the left os coxae was seen. Shallowing of the right acetabulum and subchondral bone sclerosis of the right femoral head with osteophyte formation surrounding the right femoral neck were detected. A small lesion of the osteophyte formation was also detected on the left femoral neck. The right lateral radiograph (Fig 2) represented the osteophyte bridge between the ventral floor of the last two lumbar vertebrae and sacral bone without a narrowing of the intervertebral space.

Radiographic diagnosis

Transitional vertebrae (sacralization)
Bilateral coxofemoral degenerative joint disease
Spondylosis deformans

Discussion

Transitional vertebrae are congenital malformations of the spine which may be clinically silent or induce severe clinical signs if the transitional segment involves the first portion of the cervical spine (atlanto-occipital or occipitoatlantoaxial malformation). Neurological signs will appear if a spinal cord is compressed due to instability of the transitional vertebra.

The transitional segment occurring at the lumbosacral portion may be classified into two forms. Firstly, the last lumbar vertebra shows unilateral or bilateral characteristic of the sacrum (Fig 3) in which the transverse process exists as a fused portion of the adjacent sacral wing (sacralization). The other form, sacral vertebra has unilateral or bilateral transverse process similar to the lumbar vertebrae (lumbarization) at first. These transitional lumbar vertebrae then consequently develop unilateral coxofemoral degenerative joint disease, which is indistinguishable from congenital hip dysplasia. Osteoarthritis appears later on due to asymmetrical pelvic alignment, resulting in a shallow acetabulum on one side and a compensatory deep one on the other.



Figure 3 Close-up ventrodorsal pelvic radiograph revealing the fusing portion among the left transverse process of the last lumbar vertebra, left sacral wing and the left wing of ilium.

Reference

Farrow, C.S.1987. Vertebral malformation: Transitional vertebrae. C.S. Farrow (ed.).Philadelphia: B.C. Decker Inc: 68-69.