

ABSTRACTS

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Editors: Gary England, Michelle Kutzler, Pierre Comizzoli, Wojciech Nizanski, Tom Rijsselaere and Patrick Concannon

Os clitoridis incidence on radiographs submitted for coxofemoral dysplasia evaluations

Kutzler, M¹; Keller, GG² and Smith, F^{2,3}

¹Department of Animal Sciences, Oregon State University, Corvallis, OR 97331, USA; ²Orthopedic Foundation for Animals, Columbia, MO 65201-3806, USA and ³Smith Veterinary Hospital, Burnsville, MN 55337-2901, USA

michelle.kutzler@oregonstate.edu

INTRODUCTION: In the mature female carnivore, the clitoris retains its embryonic prominence. It is located within the ventral commissure of the vulva on the caudal part of the vestibular floor. The glans, the only exposed part of the clitoris, is in the clitoral fossa and is best developed in the dog. It is largely comprised of fatty fibrous tissue and erectile tissue and covered by stratified squamous epithelium. The clitoris may even contain cartilage (queen) or a small bone (bitch). The os clitoridis can occasionally be found radiographically (1). However, some authors have associated the presence of an os clitoridis in bitches with an intersex or masculinized condition (1,2). Therefore, the objective of this study was to determine the incidence of an os clitoridis in bitches. The hypothesis was that an os clitoridis is present in normal bitches, albeit at a low incidence.

METHODS: Ventrodorsal radiographs submitted to the Orthopedic Foundation for Animals for coxofemoral dysplasia evaluations and determined to have “normal” hips were used for this study. Because of the potential difficulty in confirming the presence (or absence) of an os clitoridis in dogs with tails obscuring the perineal area on the ventrodorsal view, only dogs with docked tails were used (American Cocker Spaniels (n=200) and German Short-hair Pointers (n=200)). If an os clitoridis was visualized radiographically, its shape and degree of radio-opacity was recorded.

RESULTS: In 3% (6 out of 200) American Cocker Spaniels and 2% (4 out of 200) German Shorthair Pointers, the presence of os clitoridis in the tip of the vulva could be confirmed on a single ventrodorsal radiograph (Figure 1A). In one bitch, two mineralized opacities were present within the vulva, one at the tip and another slightly more cranial (Figure 1B). The shape of the os clitoridis ranged from circular to oblong and the degree of opacity was always slightly less than that of the cortical coccygeal bone.

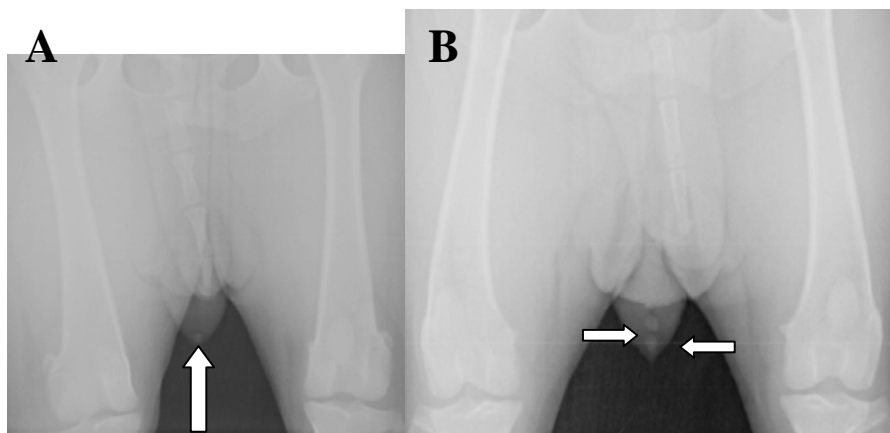


Figure 1: Singular (A) or duplicate (B) circular to oblong mineral opacities (arrows) present in the tip of the vulva visible on ventrodorsal radiographs submitted to OFA for coxofemoral dysplasia evaluations.

DISCUSSION: This study has shown that an os clitoridis can be present in otherwise reproductively normal bitches. The os clitoridis has been described to have a curvilinear mineral radioopacity¹, which differed from the round or oblong mineralized radioopacities present in this study. Since the bitch in the former study was presented for evidence of an intersex or masculinized condition and the bitches used in the current study were considered to be normal by their owners, it is possible that the os clitoridis changes in shape (elongates into a linear structure) in the pathologic state.

The functional significance of the clitoris in domestic animals is not well established but it is well supplied with sensory nerve endings and in beef cattle, clitoral stimulation at the time of insemination increases conception rates. An os clitoridis has been reported in other mammals including fossa (*Cryptoprocta ferox*) (3), ring-tailed lemur (*Lemur catta*) (4) and some strains of mice. An os clitoridis has also been reported in members of all three pinniped families, but its appearance, even within a single species, is irregular and it rarely more than 1 cm in length (5). In pinnipeds, most of the os penis length is achieved by puberty; however bone mass and density continue to increase for another decade (6). If this is also true of the os clitoridis, then radiographic evidence of its appearance may be more likely in older females. However, this did not

appear to be the case in this study as the age of the bitches with an os clitoridis ranged from 24 to 67 months at the time the radiographs was taken.

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