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Patterns of maternal - offspring behaviour of dogs and potential association with mammary health

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Objectives of the work were the description of epimeletic and etepimeletic behaviour of Beagle dogs during lactation and the study of potential associations between behaviour and mammary health. In total, 12 female dogs in lactation were used. The bitches were housed in individual pens with their puppies. Behavioural data were recorded in the females and their puppies by using digital video cameras. Observations were made on the 1st day after whelping and every two days until the 21st, then every three days until the 48th and thereafter every four days until the 84th day after whelping. Daily observation period was from 09.00 to 21.00; within that, behaviour of each bitch and her litter was recorded for three 50 min. slots. Observations were carried out in a random manner to ensure that data collection for each bitch and her litter were equally spaced within the daily observation period throughout the study. The following behaviours were recorded: ‘Butting’, ‘Grooming herself’, ‘Grooming puppy’, ‘Inside whelping box’, ‘Lying away from puppies’, ‘Lying in contact with puppies’, ‘Outside whelping box’, ‘Playing’, ‘Protecting puppies’, ‘Vocalisations’ in bitches and ‘Inside whelping box’, ‘Investigates dam’, ‘Lie down’, ‘Outside whelping box’, ‘Playing’, ‘Searching teat’, ‘Sucking attempt’, ‘Successful suck’, ‘Sucking bout’ in puppies. Moreover, teat duct material and milk samples were collected from two teats ducts and five mammary glands of each bitch, respectively, for bacteriological examination. Samples were collected on the day of whelping, 1, 2, 4, 7, 10, 14, 21 days after whelping and thereafter at weekly intervals up to the 84th day after whelping. Standard bacteriological techniques were employed for bacterial isolation and for identification of isolated organisms. There was progressive increase in mobility of bitches and decreased interaction with puppies, as the lactation period advanced. Puppies were observed to stand up for the first time on the 21st day of life; they also showed progressive increase in mobility and activity. Duration of sucking behaviours of puppies decreased and that of social activities increased with progress of the puerperium. Mean duration of ‘Successful sucks’ and ‘Sucking bouts’ by puppies reduced from 23.2 and 21.8 min during the daily observation period, respectively, at the first week reduced to 1.1 and 1.3 min at the sixth week of life of puppies (P<0.001); in contrast, duration of ‘Playing’ and ‘Outside whelping box’ increased from 0 min during the daily observation period at the first week to 13.2 and 22.2 min at the sixth week of life of puppies, respectively (P<0.001). There was no significant difference in the frequency of successful sucks of puppies between right (median: 2.0 events, range: 0-11) and the left (median: 1.5 events, range: 0-9) mammary glands (P=0.973). However, there was a significant difference in frequency of successful sucks of puppies between the more caudal (median: 1.0 events, range: 0-6) and the more cranial (median: 0.0 events, range: 0-5) mammary glands (P<0.001). Of the samples collected, 7% of teat duct material and 9% of milk samples yielded bacteria. Risk of infection for the more caudal glands was 0.107, whilst that for the more cranial ones was 0.033 (P<0.001). *Staphylococcus pseudintermedius* was the most frequently recovered species. Frequency of ‘Successful sucks’ of puppies and risk of infection of mammary glands and teat ducts of their dams were associated throughout the lactation period. In conclusion: the results indicate that sucking by puppies contributes to increased infection risk of the caudal mammary glands of bitches; the more caudal mammary glands received more sucks, likely because of their higher milk production; the increased sucking frequency also resulted in increased infection incidents.