Dystocia following prolonged retention of a dead fetus in an Asian elephant (*Elephas maximus*)

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Abstract
A 32-year-old nulliparous female Asian elephant (*Elephas maximus*) showed signs of parturition 8 months later than predicted from the breeding records. However, while serosanguineous fluid, necrotic tissue and pieces of amnion were expelled, second-stage labor did not progress. Since the fetus was not found during an endoscopic examination of the vestibule, it was assumed that the elephant had calved unseen and she was returned to the forest to recuperate. Twelve months later, the elephant showed clear signs of second-stage labor accompanied by a bulge in the perineum and passage of keratinized nail through the vulva. A 35cm episiotomy incision was made in the perineum just below the anus, via which chains were attached to the forelimbs of the fetus. Traction on the forelimbs alone proved insufficient to achieve delivery because the fetal head kept rotating and impacting in the pelvis. However, traction applied via a hook inserted behind the mandibular symphysis allowed the head to be elevated and extended, and the fetus to be delivered. The episiotomy wound was sutured in two layers and although the skin did not heal during primary closure it subsequently healed uneventfully by second intention. Retrospective evaluation of the elephant’s serum progestagens profile demonstrated a fall to baseline at the suspected onset of parturition, supporting the supposition that the fetus was retained in the uterus for 12 months after parturition began. It is suggested that serum progestagens concentrations should be monitored regularly in mated elephant cows to verify the establishment of pregnancy and to better estimate the expected timing, and the onset of calving.

Keywords
Asian elephant (*Elephas maximus*); Dystocia; Episiotomy; Retained dead fetus; Progestagens

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