The incidence of acquired flexural deformity and unilateral club foot (uneven feet) in Thoroughbred foals

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Aims: To measure the incidence of acquired flexural deformity (AFD) affecting the distal interphalangeal joint, (AFDdipj) and unilateral club foot (UCF) in a sample population of Thoroughbred foals. To examine any association between them, to examine other associated factors; including age, between AFDdipj and UCF, laterality, and time of year foaled. Methods: An observational study of Thoroughbred foals (n = 373) on one stud farm was undertaken between 2006 and 2009. The foals were assessed every 3–4 weeks prior to routine hoof trimming, recording AFDdipj and UCF. Results: One hundred and sixteen foals (31%) were AFD, 67 (18%) were AFDdipj and 72 (19%) were UCF. The incidence of AFDdipj by age was very significant (Anderson-Darling, d.d = 22.75, P = 0.092). Fifty-four foals (14.47%) were UCF right fore and 18 (4.82%) UCF left fore, a highly significant association (P<0.001 by χ²). Time of year foaled was not significant. Conclusions: In this study, AFDdipj occurred in an earlier and narrower age range than previously thought; AFDdipj foals had a 33% probability of developing UCF, which appears to be associated with laterality and is predominantly a condition affecting the right fore. Practical significance: The incidence of AFDdipj by age is earlier than previous literature has stated and therefore the causes of AFD affecting the DIP joint may need to be reassessed. Treatments, such as exercise restriction by box rest and/or intravenous oxytetracycline, need to begin immediately that AFDdipj is recognised. This study has provided useful first time data on these conditions in Thoroughbred foals in the UK, which has challenged previous wisdom.

Bone biomarker variation in broodmare and foal pairs


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Introduction: Bone quality is an important attribute for performance horses. Accrual begins in utero, where the fetus depends on the dam for calcium and other minerals. Maternal cancellous bone resorption is a feature of pregnancy in many species. Aims: We hypothesised that in pregnant mares, the bone accretion marker osteocalcin and resorption marker pyridinoline would vary through gestation. Methods: Serum osteocalcin and pyridinoline were measured monthly from 1–3 months gestation through to 4 months post foaling, in a group of 18 Thoroughbred, Standardbred and Stockhorse broodmares, using Quidel MicroVue Osteocalcin and PYD assay kits (www.quidel.com). Osteocalcin was measured monthly in foals from 1–4 months of age. Changes in bone biomarkers were modelled using general linear models. Results: In mares, mean serum osteocalcin levels decreased from 17.8 (95% CI: 14.9–20.7) ng/ml at 34 days gestation to 9.2 (7.6–10.5) ng/ml at 320 days (P<0.001 for regression coefficient). Pyridinoline increased from 2.5 (95% CI:1.9–3.0) nmol/l at 34 days to 3.2 (3.0–3.5) nmol/l at 301 days (P = 0.03 for regression coefficient). Osteocalcin increased 2 months post foaling with a contemporaneous decrease in serum pyridinoline. In foals, osteocalcin levels varied in a nonlinear fashion, increasing rapidly after birth to a peak of 122.1 (95% CI: 97.0–147.3) ng/ml at 2 months of age, decreasing by 3–4 months. Conclusions: Over gestation, bone accretion decreases and resorption increases in mares, suggesting maternal bone mobilisation to meet fetal demands. The reverse pattern post foaling suggests replenishment of maternal calcium stores. Practical significance: Human, Maternal, fetal and neonatal bone metabolism are coupled. The gestational milieu is likely to influence bone characteristics in the foal and subsequent future performance. Acknowledgements: Supported by a University of Queensland New Staff Start-Up Grant. The authors thank the staff of the UQ Gatton Equine Unit for assistance with conduct of the study.

Preimplantation factor (PIF*) displays developmental-related evoking immune anti-inflammatory response of equine endometrial explants in vitro

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Aims: Preimplantation factor (PIF), secreted only by viable mammalian embryos is essential for achieving maternal immune-tolerance without immune-suppression. In human endometrium PIF coordinates and supports implantation and modulates immunity. Transposed to nonpregnant models, PIF displays immune-control and regenerative features in neuroinflammation and diabetes. The aim was to test the hypothesis that PIF exerts anti-inflammatory properties towards equine endometrium challenged with Escherichia coli-derived lipopolysaccharide (LPS) using an established endometrial explant culture model of uterine inflammation. Methods: Luteal (n = 4) and anoestrus (n = 8) stage endometrium was collected from slaughtered mares. Explants were cultured in triplicate in serum-free medium alone (control) and with 0–1000 nmol/l PIF (25–100 nmol/l = human physiologic dose) and ± LPS (3 µg/ml). Media samples were collected at 24 and 72 h and prostaglandin F₂α (PGF₂α) secreted...
Clinical Research

Hall 8B  Friday 14th September

09.30–09.45
Conception and foaling rates after surgical repair of ventral cervical lacerations in a Trendelenburg position

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Aims: Proper cervical function is necessary for a successful pregnancy. Cervical lacerations typically occur during uncomplicated parturition. Cervical defects or adhesions between 6 and 8 o’clock are the most difficult to identify, visualise and repair. Our objective was to describe the surgical technique and report the conception and foaling rates of mares with ventral cervical lacerations that were surgically corrected in a Trendelenburg position. Methods: The records of all mares with cervical lacerations (n = 41) that were admitted to HEMI for surgical repair between January 2009 and September 2011 were reviewed. Eighteen (44%) of these cervical tears were located in the ventral half of the cervix and thus deemed suitable for repair in 2 layers, under general anaesthesia in Trendelenburg position. Retrieved data included history, signalment, parity, tear number, location and extent, suture material used, surgery and hospitalisation time, post operative complications, conception and foaling rates. The effect of various clinical and surgical parameters on post operative conception and foaling rates were analysed statistically. Results: Five mares presented with 2 cervical tears and 13 with a single laceration. The mean surgery time for one and 2 lacerations was 23 and 26 min, respectively. The post surgical pregnancy rate was 9/14 (64%) and the post surgical foaling rate was 7/14 (50%). Previous surgery was the only variable that negatively correlated with pregnancy (P = 0.03) and foaling (P = 0.03) rates. Complications included pregnancy loss during the last trimester of gestation, cervical adhesions and associated pyometra. Conclusions and practical significance: Foaling rate was found to be lower than pregnancy rate. Prior failed standing surgeries were associated with subfertility. Surgery time was markedly shorter for surgical repair of one or 2 lacerations than with published standing techniques. This technique allows efficient repair of ventrally located cervical tears with a satisfactory post surgery foaling rate.

09.45–10.00
Cheek tooth extractions (2005–2011): Proportion requiring surgical exodontia; technique and complications

(part of larger study reporting all results of cheek tooth extractions over 6 years)

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Aims: To report proportion of cheek teeth (CT) requiring surgical exodontia over a 6 year period and report success rates and complications of surgical procedure. Methods: A total of 214 CT were presented for oral extraction over a 6 year period; 193 were successfully extracted orally by forceps technique, oroscopically guided fragment extractions and oral screw extractions; 21 CT were presented for surgery. Conclusions and practical significance: Early pregnancy loss occurs most commonly before 30 days post mating, a time of rapid fetal and placental development. Infectious causes account for 13% of EPL, whilst no diagnosis is reached in approximately 80% of affected mares. Future work must focus on identifying the aetiology of EPL if we are to improve reproductive efficiency in TBs. Acknowledgements: Stud farms and veterinary practices for contributing data.
identification of facial nerve branches, including lengthening the incision caudally and dissecting further coronally. **Results:** Twenty-one CT in 20 horses were extracted by LB, age range 4–24 years, mean 9 years. Twenty horses had a single tooth removed. One horse had Triadan 109 and 209 removed with a 3 year interval. 62% were maxillary, 38% mandibular. Ninety-two percent of maxillary CT were Triadan _09. Out of 20 horses, 19 had no significant long-term (>2 months) complications (96%). One horse was subjected to euthanasia intraoperatively for complications. One horse developed a surgical wound abscess 2 weeks postoperatively with mild lip paresis. One horse required intraoperative transcortical osteotomy to repel an apical fragment. In one horse the parotid duct was inadvertently sectioned requiring surgical repair with no short- or long-term complications. **Conclusions and practical significance:** Compared to other surgical techniques, LB can be safe and highly successful and is recommended for cases of failed oral extraction. Slight modifications to previously described techniques can significantly reduce reported complications. Maxillary Triadan _09 teeth are markedly over-represented in this and other surgical exodontia studies. Further research is warranted into the pathology of these teeth. **Acknowledgements:** Bruce Bladon for initial help and guidance with this surgical technique.