RESULTS

24 dogs underwent stabilisation. All were traumatic in origin, with 13/24 (54%) due to a road traffic accident. Concurrent injuries were present in 9/24 (38%). All dogs had fractures associated with the tarsocrural joint; mostly malleolar fractures 20/26 (77%); 13 (65%) medial, 7 lateral (35 %). Two dogs had bilateral instability giving 26 limbs stabilised. 12/26 (46%) had tarsal soft-tissue wounds of which eight were shear injuries. Instability associated with the collateral ligaments was medial in 15/26 (58%), lateral in 5/26 (19%) and bilateral in 6/26 (23%) of limbs.

Nine joints had fracture stabilisation with transarticular external skeletal fixators (TESF), five had TESF alone, four had prosthetic ligament (PL) with a TESF, and four had PL with external-coaptation. Two limbs were stabilised by plated pancarpal arthrodesis. Two had primary ligament repair, one with TESF, the other with coaptation. TEFs were applied in 19/26 (73%) of limbs.

Complications occurred in 24/26 (92%) of limbs; minor in 13/26 (50%); including pin-tract infections, dressing sores, pin migration/breakage (not requiring replacement) and minor instability. Major complications occurred in 19/26 (73%);

including pin-breakage, implant failure, sequestrum formation, implant migration, implant infection and septic arthritis. Of all complications, 31/45 (69%) were TEFs associated, however overall TEFs were not a significant risk factor ($p=0.12$). Eight limbs were stabilised with PLs; six with fiberwire, two nylon-leader-line. 5/8 (63%) of these suffered major long-term complications requiring implant removal from infection, with owners reporting swelling or sinus tract formation at a median of 156 days (range 105–1006). Placement of PLs was significantly associated with postoperative complications ($p=0.017$). A significant association was seen between the cost of treatment and the presence major complications ($p=0.017$) or soft-tissue wounds ($p=0.03$).

CLINICAL SIGNIFICANCE

Complications following surgical stabilisation are extremely high, however over half are fixator related. Use of PL was significantly associated with a major complication, which can be delayed and hence careful consideration should be given to the use of PLs.

Complications and outcome of tibial tuberosity advancement surgery performed in Boxer dogs

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OBJECTIVE

To retrospectively review the incidence of complications and outcome of tibial tuberosity advancement (TTA) surgeries in a group of Boxer dogs and compare the data with a control population of Labrador Retrievers.

METHODS

All TTA procedures were performed at our institution. Information extracted from the medical records included signalment, body weight, surgery date, surgeon, affected limb, lameness score, status of cranial cruciate ligament (CCL) at surgery, CCL treatment, status of menisci at surgery, meniscal treatment, surgical and anaesthetic times, perioperative medication and use of bandage in the immediate postoperative period. Follow-up data included radiographic assessment at 6 weeks, presence of additional implants, complications and whether further surgical intervention was required to address the complications. An owner questionnaire was used as outcome measure tool.

RESULTS

Of the 100 stifles (67 Labrador stifles and 33 Boxer stifles) included in this study, 37 complications were reported in 25 joints. The complication rate differed significantly between groups ($p=0.001$). Boxers presented a complication rate of 45.5% (15/33) while the control group developed complications in 14.9% of the times (10/67). Major complications recorded included tibial tuberosity fracture (5.88%), late meniscal injury (17.6%), implant failure (8.82%), implant associated infection (8.82%), surgical wound infection (23.5%), wound dehiscence (partial or complete) with implant exposure (8.82%) and use of additional implants (17.6%). Boxers were 5 times more likely to undergo revision surgery. Surgical residents in training performed 52% of the TTA procedures under direct supervision with the remaining 48% being performed by ECVS diploma holders and board-eligible surgeons with no statistical difference found for their level of experience. No statistical significance was detected between the two groups for any of the variables assessed by radiography. The follow-up questionnaire showed statistical difference for time to peak-activity, which was significantly longer in the Boxer group; and owner satisfaction, with Boxers' owners being more dissatisfied with the outcome of the surgery.

CLINICAL SIGNIFICANCE

Boxer dogs had more major complications after TTA surgery, higher rate of revision surgery and superficial wound infection than the control group. The time to peak-activity was longer, long-term outcome was inferior and the degree of satisfaction was lower when compared to the Labrador population. The pertinence and value of breed-specific recommendations for CCL disease appears to be a subject worthy of further investigation where ideally objective outcome measures should also be assessed.

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