

Clinical use of the locking compression plate (LCP) in horses: a retrospective study of 31 cases (2004–2006)

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TABLE 1: Details of breed, age, gender, problem, fixation technique, complications, follow-up and outcome in 31 cases reported in the study

Horse	Breed	Age	Gender	Problem	Fixation	Complications	Follow-up	Outcome
1	WB	11 yr	G	Olecranon fracture severely comminuted	9 hole caudal LCP - locked and standard screws; 4 hole lateral LCP - all locked Pool recovery	None	25 months	Sound
2	STD	8 wks	F	Olecranon fracture comminuted and displaced	8 hole caudal LCP - locked and standard screws	None	9 months	Sound
3	STD	4 wks	F	MTIII fracture severely comminuted	12 hole dorsolateral LCP - all locked; 12 hole dorsomedial LCP - all locked; 5.5 mm lag screw crossing fracture <i>Minimally invasive</i>	None	20 months	Sound
4	TB	5 days	F	Iliac fracture	4 hole lateral LCP - locked and standard screws; 5 hole caudodorsal LCP - all locked	Implant/incisional infection which resolved without implant removal	21 months	Sound
5	STD	4 wks	F	Femur fracture	7 hole cranial LCP - all locked; 8 hole lateral LCP - all locked; 3.5 mm lag screw crossing fracture	Diarrhoea; screw loosening and breakage	20 months	Pasture sound
6	STD	2 wks	F	Femur fracture	9 hole cranial LCP - locked and standard screws; 8 hole lateral LCP - locked and standard screws; 2 x 5.5 mm lag screws crossing fracture	Implant/incisional infection with some screw loosening Mild carpal varus in contralateral limb	23 months	Lame - but radiographically healed
7	STD	1 day	M	Radius-mid-diaphyseal comminuted fracture	6 hole dorsal LCP - all locked; 4 hole lateral DCP		10 months	Sound
8	STD	4 yr	F	Radius-proximal diaphyseal comminuted fracture	1st surgery - 16 hole cranial LCP (condylar plate) - locked and standard screws; 12 hole lateral LCP - locked and standard screws; 5.5 mm lag screw crossing fracture. 2nd surgery - medial 12 hole DCS with initial Pool recovery	Incisional/implant infection; screw breakage/loosening; contralateral limb implants unchanged	4 months laminitis	Euthanasia
9	SAD	11 yr	G	Pastern arthrodesis - DJD	3 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws	Mild recurrence of prior laminitis resolved	23 months	Showing
10	STD	2 yr	F	Pastern arthrodesis - comminuted P2 fracture	3 hole dorsolateral LCP - locked and standard screws; 3 hole dorsomedial LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 3.5 and 4.5 mm lag screws crossing fracture	Incisional/implant infection; implants removed	14 months	Pasture sound
11	STD	6 yr	F	Pastern arthrodesis - subluxation	3 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws	None	14 months	Pasture sound
12	TB	1 yr	F	Pastern arthrodesis - large cyst in distal P1	1st surgery - 4 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws 2nd surgery - 4 hole lateral LCP - locked and standard screws; 3 hole medial LCP - locked and standard screws; 5.5 mm transarticular lag screw	Initial screw breakage and instability	9 months	Pasture sound
13	TWH	10 yr	G	Pastern arthrodesis - DJD	3 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws <i>Minimally invasive</i>	None	19 months	Pasture sound
14	TB	18 yr	G	Pastern arthrodesis - DJD	4 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws	None	6 months	Sound
15	WB	13 yr	G	Pastern arthrodesis - DJD	4 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws	None	7 months	Sound

16	TB	2 yr	M	Pastern arthrodesis - DJD	3 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws	None	8 months	Sound
17	TB	5 yr	M	Fetlock arthrodesis - DJD ± prior infection	12 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 5.5 mm metacarpo-sesamoid lag screws; 1.5 mm palmar figure eight tension band. Pool recovery	None	27 months	Pasture sound
18	Arab	10 yr	F	Fetlock arthrodesis - DJD	12 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 2 x 5.5 mm metacarpo-sesamoid lag screws <i>Minimally invasive</i> Pool recovery	Implant/incisional infection; implants removed	18 months	Pasture sound
19	TB	6 yr	M	Fetlock arthrodesis - DJD	14 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 2 x 5.5 mm metacarpo-sesamoid lag screws Pool recovery	Incisional infection	17 months	Pasture sound
20	TB	9 yr	G	Fetlock arthrodesis - axial sesamoid fracture with suspensory breakdown	14 hole dorsal LCP - locked and standard screws; 4 x 5.5 mm transarticular lag screws Pool recovery	Incisional infection	8 months	Pasture sound
21	TB	3 yr	M	Fetlock/pastern arthrodesis - axial sesamoid fracture; severely comminuted P1 fracture; comminuted lateral condylar fracture	1st surgery - 16 hole dorsal LCP extending from MTIII-P2 - locking and standard screws; 2 x 5.5 mm transarticular lag screws (P1-P2); 3 x 5.5 mm transarticular lag screws (P1-MTIII); 2 x 5.5 mm metacarpo-sesamoid lag screws; 4 x 5.5 mm condylar lag screws. 2nd surgery - replacement of 2 distal LCP screws and transarticular lag screws (P1-P2). 3rd surgery - removal of LCP; 3 hole dorsolateral LCP (P1-P2); 4 hole dorsomedial LCP (P1-P2) Pool recovery	Incisional/implant infection; screw breakage; implants removed; contralateral laminitis - hoof wall resection	8 months	Euthanasia
22	TB	5 yr	F	Fetlock arthrodesis - DJD	11 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 2 x 5.5 mm metacarpo-sesamoid lag screws; 1.5 mm palmar figure eight tension band Pool recovery	None	4 month	Pasture sound
23	TB	2 yr	F	Fetlock arthrodesis - following severe sepsis	11 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 2 x 5.5 mm metacarpo-sesamoid lag screws Pool recovery	Incisional/implant infection; implant removed at 3 months	8 months	Pasture sound
24	TB	3 yr	F	Fetlock arthrodesis - distal sesamoidean ligament breakdown	12 hole dorsal LCP - locked and standard screws; 2 x 5.5 mm transarticular lag screws; 2 x 5.5 mm metacarpo-sesamoid lag screws; 1.5 mm palmar figure eight tension band Pool recovery	Contralateral limb laminitis	2 months	Euthanasia
25	TB	4 yr	G	Condylar fracture - LF - medial spiral	11 hole lateral LCP - locked and standard screws; 2 x 4.5 mm condylar lag screws Pool recovery	None	9 months	Sound
26	TB	2 yr	M	Condylar fracture - RH - medial spiral	12 hole lateral LCP - locked and standard screws; 3 x 4.5 mm condylar lag screws Pool recovery	Fracture propagation - kicked wall while loading on van	2 days	Euthanasia
27	TB	5 yr	G	Condylar fracture - RH - medial spiral	12 hole lateral LCP - locked and standard screws; 4 x 4.5 mm condylar lag screws Pool recovery	None - plate removed at 3 months	8 months	Sound in training
28	TB	2 yr	F	Condylar fracture - RH - spiral	12 hole lateral LCP - locked and standard screws; 2 x 4.5 mm condylar lag screws Pool recovery	None - plate removed at 3 months	7 months	Sound in training
29	Arab	5 yr	G	Condylar fracture - RH - medial spiral	1st surgery - 12 hole lateral LCP - locked and standard screws; 2 x 4.5 mm condylar lag screws. 2nd surgery - additional 14 hole dorsomedial LCP - locked and standard screws Pool recovery	Fracture propagation - after episode of colic 2 days following surgery	4 month	Pasture sound
30	TB	6 yr	F	Partial carpal arthrodesis - severe DJD secondary to open carpal laceration and chronic lameness	6 hole dorsolateral LCP - locked and standard screws; 6 hole dorsomedial LCP - locked and standard screws Pool recovery	Incisional infection	10 months	Chronic mechanical lameness
31	TB	4 yr	F	Partial carpal arthrodesis - following failure of fixation of multiple slab fractures	6 hole lateral LCP; 6 hole dorsal LCP; 4 hole medial LCP - locked and standard screws Pool recovery	Contralateral limb laminitis	1 month	Euthanasia

WB = Warmblood; STD = Standardbred; TB = Thoroughbred; Sad = Saddlebred; TWH = Tennessee Walking Horse; LCP = locking compression plate; DCS = dynamic condylar screw plate; DJD = degenerative joint disease.