

## VÖK Workshop "Hybride Frakturversorgung - Internal - External Hybrid Fixation (HIEF) for Fracture Treatment"

The treatment of fractures poses specific problems for implant management, whether internal or external osteosynthesis is used.

**Internal Osteosynthesis.** The method requires more or less extensive exposure to the fracture segment, increasing the risk of creating local biological damage. On the other hand, ensuring adequate leverage to the plate is fundamental to reducing the risk of implant fatigue failure.

Additionally, many locked implants must be removed to reduce the risk of demineralization associated with the plate, especially in small dogs. Implant removal increases the risk of refracture if bone consolidation is not complete.

**External Osteosynthesis.** When used as the sole fixation technique, closed reduction of the fracture requires significant experience and often the use of intraoperative fluoroscopy. Considering the lifespan of an external system, the period following removal of the fixator presents a potential risk of refracture if bone consolidation is not complete.

**Internal/External Hybrid Fixation.** The goal of internal/external hybrid fixation is to reduce the impact of the aforementioned problems using the following logic.

- The procedure begins with stabilizing the fracture using either technique that achieves fracture reduction and stabilization in the most straightforward manner possible. If internal osteosynthesis is started, a small plate is applied, which would be insufficient as the sole fixation method but insufficient alone. Due to its small size, surgical access is also usually very limited. If the fracture is too complex to reduce, it is advisable to place the fixator first, which will be used as a reduction tool in this phase.
- Whichever sequence is used, internal osteosynthesis stabilizes the fracture fragments. At the same time, the external fixator ensures the leverage arm that counteracts the forces generated by the load on the bone segment, thanks to the fact that the fixator can be attached to both ends of the bone segment without the need for an approach. This result can be achieved with a minimally invasive procedure.
- The stability ensured by the implants allows immediate loading after the procedure.
- Once the bone callus has developed, the fixator can be removed without the risk of refracture, thanks to the presence of the plate that shares the load with the callus. Given the small size of the plate, its removal is not mandatory, thanks to the reduced risk of protection against loads and subsequent bone resorption.

Therefore, this approach allows minimizing the risks related to specific implant problems and enabling rapid recovery of function with a low incidence of complications, leveraging the useful aspects of both techniques.

28.–29.11.2026

### Seminarort - Seminarleitung

Fachtierärzte Dr.Krebitz-Gressl GnbR  
 Viktringer Ring 7, 9020 Klagenfurt  
 Dr. Hannes Gressl FTA Kleintiere, AT

### ReferentInnen

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### Programm

#### Samstag, 28.11.2026

08:30–09:00 Uhr	Principles of biomechanics in external fixation	G. Rovesti
09:00–09:30 Uhr	Biological aspects of fractures in toy patients	G. Rovesti
09:30–10:00 Uhr	Fracture classification and surgical decision-making	G. Rovesti

10:00–10:30 Uhr	External fixation techniques in toy patients and cats	G. Rovesti
10:30–11:00 Uhr	The Polilock radiolucent linear system	G. Rovesti
11:00–11:30 Uhr	Pause	
11:30–13:00 Uhr	Lab 1: First introduction to the instrumentation. Assembly of the Polilock linear fixator on a mini tibia	G. Rovesti
13:00–14:00 Uhr	Pause	
14:00–15:00 Uhr	Lab 2: Application of the Polilock linear fixator on the pelvis	G. Rovesti
15:00–15:30 Uhr	Principles of circular external fixation	G. Rovesti
15:30–16:00 Uhr	Pause	
16:00–16:30 Uhr	The Universal circular system	G. Rovesti
16:30–17:30 Uhr	Lab 3: First introduction to the Universal circular fixator instrumentation and basic procedures	G. Rovesti
17:30–18:00 Uhr	Clinical case discussion	G. Rovesti

### Sonntag, 29.11.2026

08:30–09:00 Uhr	Fracture reduction techniques using external fixators	G. Rovesti
09:00–10:00 Uhr	Clinical application of circular fixation	G. Rovesti
10:00–10:30 Uhr	Principles of hybrid external fixation	G. Rovesti
10:30–11:00 Uhr	Pause	
11:00–13:00 Uhr	Lab 4: First introduction to the Universal circular fixator instrumentation and basic techniques on plastic models	G. Rovesti
13:00–14:00 Uhr	Pause	
14:00–16:00 Uhr	Lab 5: Reduction and stabilization of a distal tibial fracture using hybrid fixation	G. Rovesti
16:00–16:30 Uhr	Pause	
16:30–17:30 Uhr	Problems and complications of external fixation	G. Rovesti

### Eine Fortbildungsveranstaltung der Vereinigung für Österreichische Kleintiermedizin



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