



3-5 December 2018

ICLO Anatomical Laboratory + Orthofix Education Centre, Verona, IT

### Short report article

Participants' full satisfaction for the FEF Orthofix Medical Education Course, from the 3<sup>rd</sup> to the 5<sup>th</sup> December in Verona, addressed to orthopaedic surgeons early in their career, or with little experience when using external fixation devices. An educational success, due to a continuous team interaction, high quality scientific contents and an outstanding Faculty, always willing to explain and debate.

Around 50 attendees arriving from France, Germany, Italy, Netherlands, Switzerland, Spain and United Kingdom – mainly orthopaedic surgeons and clinicians, but also Orthofix Personnel from the company departments of Marketing and Clinical Research, took part to the training initiative on Fundamental of External Fixation. The Faculty was represented by three well known European experts: Nikolaos Giotakis, chairman, an orthopaedic surgeon from The Royal Liverpool University Hospitals in Liverpool – UK; Amir Qureshi an orthopaedic surgeon from the University Hospital Southampton NHS Foundation Trust, Southampton – UK; Nicola Tartaglia, an orthopaedic surgeon from the Orthopaedic and Traumatology Department, Regional Hospital F. Miulli in Acquaviva delle Fonti, Bari – Italy.

**The main objectives** of the course were summarised by **Elisa Luciani**, Orthofix Global Medical Education Manager, at the beginning of the seminar: learning how to stabilise a fracture safely; how to use at best several types of implants and tools in order to achieve bone stabilisation, promote bone healing and minimise potential complications; how to treat pelvic, diaphyseal and simple peri-articular fractures, using different available techniques.

About the **training methodology**, she described an innovative and effective balance between frontal tuition and wet and dry lab sessions. During the three days course, the speakers presented a significant numbers of clinical cases, encouraging open discussions and a free exchange of visions and different experiences. The learning process followed three steps: *"tell me, show me, involve me"*.

## DAY 1

### Temporary External Fixation

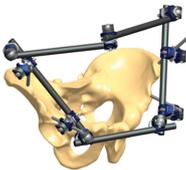
The importance to go back to the basics: the experts started with some theory on biomechanics – for N. Giotakis "a fundamental chapter of the course", definition of low and high-energy trauma and the mechanism of injury, types and complexity of fractures, basic principles of external fixation: safe corridors, safe pins and wires insertion.

The modularity and versatile application of external fixation (born more than 2,000 years ago!) has enlarged in the last years its potential use and vital role in the management of fractures for temporary or definitive fixation. The benefits of external fixation are numerous. When compared with internal fixation devices, external fixators generally cause less disruption of the soft tissues and less disturbance of osseous blood supply and periosteum.

In provisional stabilisation – short term applications mainly include Damage Control Orthopaedics procedures, but not only – the surgeon must always consider the impact of the fixator on the patient's physiology and care, as well as the ability to change the provisional fixator into a definitive device.

Experts described how to assemble a modular external fixator safely in case of severe injuries, and how to insert pins and wires properly. The surgeon should follow the "near and far" guide: pins should be spread along a segment of bone such that the segment is spanned, with one pin at approx. 2 cm from the fracture line.

Practical sessions on cadavers in the wet lab followed the theoretical frontal lectures, regarding initially the right method to insert half pins and the application of a modular pin-to-bar fixator to:

<p>a) A diaphyseal tibial fracture with a simple "Z" frame configuration</p> 	<p>b) To the pelvis</p> 	<p>c) Across the knee</p> 
<p>d) Across the ankle</p> 	<p>The practical learning, tutored by the experts, consisted in how and where exactly to position the external fixator, the importance of a double check, the need to respect the bone axis, the attention to the safe corridors. The lab session ended with the practical application of a unicortical temporary external fixation on a diaphyseal tibial fracture</p> 	

## DAY 2

### From temporary to definitive external fixation

Aim of the second day was helping the surgeons to further understand how the different external fixation devices work on fractures, explaining in details monolateral and circular frames. For a surgeon, utilising the full "fixation devices portfolio" with appropriate competence and awareness - analysing and experiencing different features and indications - can promote the best choice for the patient's positive recover and general well-being.

Comparing the two apparently similar Monolateral and Modular external fixation devices, **N. Tartaglia** highlighted that the former is usually applied as a definitive treatment, whereas the latter more often in Damage Control Orthopaedics, temporary stabilisation and limb salvage procedures.

#### Monolateral frames

##### ADVANTAGES

Stability, dynamisation possibility, easier post-surgical corrections

##### DISADVANTAGES

Less versatile and reduced freedom of bone screws placement, pre-op planning is important, limited clamp manipulation

##### ADVANTAGES

Easy and quick application, higher freedom of pin placement, versatility with numerous pin-clamps-rods configurations

##### DISADVANTAGES

No dynamisation possibility, reduction may be more difficult