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# EFECE SYSTEMS: A NEW FRACTURE FIXATION SYSTEM

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EFECE Systems are patented newly defined fracture fixation systems. EFECE System contains; EFECE device, EFECE wire and surgical tools. Surgical tools are for compression of the fracture line, locking and unlocking the EFECE device and for cutting the EFECE wire. EFECE systems are totally suitable for percutaneous technique. EFECE device is cylinder-shaped with a 6-mm radius and a 5-mm length that features a hole for the insertion of a 1.2-mm EFECE wire. EFECE device contains 2 pieces that catch each other with threads. The top piece functions as a cap, whereas the second piece contains 3 gloves for the insertion of 3 balls. These balls have a 1.5-mm radius. The locking mechanism receives help from the balls in the cone-shaped gloves. In forward movements, the balls move back to the base of the cone. During pulling movements, the balls move to the narrow part of the cone and lock the EFECE wire.

**Surgical technique:** After reducing the fracture, EFECE wire should be passed across the fracture line. EFECE device should be advanced on the EFECE wire till the bone cortex, with the help of the patented tools, and then fastened with percutaneous technique. From the counter side of the EFECE wire, the second EFECE device must be advanced till the bone cortex too. After completion of these steps, EFECE wire should be tensioned with EFECE wire stretcher and then EFECE device should be fastened percutaneously. The remaining part of the EFECE wire must be cut with the EFECE wire cutter. With this last step of the surgical technique, skin incision can be closed. During implant removal; with unlocking the EFECE device, with the help of EFECE Magnets EFECE device can be detached from the EFECE wire easily. EFECE systems are able to achieve fixation with the help of thin EFECE wires. The fixation strength is not related to bone quality. Thin EFECE wire achieve fixation in difficult bone anatomy like elbow. Technique is completely percutaneous. Indication scale is wide and implant removal with magnets is also a new approach for implant technologies.

### Biography

Emre Karadeniz has completed his MD from Osmangazi University School of Medicine and Residency from Baskent University School of Medicine. He has completed his Spine Surgery fellowship from Hacettepe University, Istanbul Spine Center in Turkey and BASS/BSS in England. He is working as a Lecturer and Spine surgeon at the Orthopedics and Traumatology Department of Kocaeli University Faculty of Medicine. He is the inventor of EFECE fixation systems. He has lots of national and international prizes for the invention of this EFECE Systems.

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