

## Joint Event

11<sup>th</sup> International Conference on

# OSTEOPOROSIS, ARTHRITIS & MUSCULOSKELETAL DISORDERS &

## 10<sup>th</sup> INTERNATIONAL CONFERENCE ON ARTHROPLASTY

December 04-05, 2017 | Madrid, Spain

### Treatment of post-traumatic elbow stiffness - Our experiences

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**Introduction:** Elbow stiffness is one of the most common elbow disorders because of its nature being vulnerable to contracture. The conservative treatment should be recommended firstly, then the surgical intervention is indicated after the failure of the conservative attempt. From 2010 to 2015, we have treated 258 cases of post-traumatic elbow stiffness in our center.

**Pre-operative Assessment:** Patient history including the incision, internal fixation, and nerve intervention would guide the plan of surgery. An overall physical examination should be emphasized including extension and flexion deficiency, rotation limitation, stability, skin contracture, and nerve symptoms. Radiographic assessment aims to address the heterotrophic ossification, malunion, joint space, and target pathologies such as synovium.

**Surgical Techniques:** A single lateral or medial approach is sufficient for moderate elbow stiffness. We recommend the combined medial and lateral approaches to treat severe stiff elbows. General release and clearance should cover the hypertrophic capsule, humeroradial joint, triceps, olecranon fossa, coronoid fossa, and HO. The anterior bundle of the medial collateral ligament and lateral ulnar collateral ligament should be left intact to prevent instability while we further release the ligament contracture. Ulnar nerve anterior transposition is routinely performed to prevent ulnar nerve symptoms. We believe it reasonable and helpful to adopt a hinged external fixator in severe cases. It provides extra stability and security for repaired ligaments, facilitate rehabilitation, and a less painful situation leads to more effective outcome.

**Postoperative Rehabilitation:** A prolonged and rigorous rehabilitation protocol after elbow release is important for preserving the arc of motion achieved during surgery. The exercises consist of active, assisted, and passive elbow flexion and extension movements. During the interval of each exercise session, a compressive cryotherapy device is applied to relieve pain. The applying of drains and indomethacin aims to reduce the pain as well as the incidence of edema and heterotopic ossification.

### Recent Publications

1. Han B, Xue F, Fan C and Mo X (2017) Surface heparinization and blood compatibility modification of small intestinal submucosa (SIS) for small-caliber vascular regeneration. *Bio-Medical Materials and Engineering* 28(3):213-222.
2. Chen S, Jiang S, Zheng W, Tu B, Liu S, Ruan H and Fan C (2017) RelA/p65 inhibition prevents tendon adhesion by modulating inflammation, cell proliferation, and apoptosis. *Cell Death and Disease* 8(3): e2710.
3. Liu S, Chen H, Wu T, Pan G, Fan C, Xu Y and Cui W (2017) Macrophage infiltration of electrospun polyester fibers. *Biomaterials Science* 5(8):1579-1587
4. Yu S, Chen M and Fan C (2017) Team approach: elbow contracture due to heterotopic ossification. *JBJS Reviews* 5(1).
5. Sun Y, Cai J, Yu S, Chen S, Li F and Fan C (2016) MiR-630 inhibits endothelial-mesenchymal transition by targeting slug in traumatic heterotopic ossification. *Scientific Reports* 6:22729.

### Biography

Cunyi Fan is a Professor of Orthopedic Surgery. Currently, he is working in 6th People's Hospital as an Orthopedic Surgeon and working as a Professor in Shanghai Jiaotong University, China. His articles are published in PubMed, and respective journals.

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