



## **TITLE: Arthroscopic treatment of two cannulated screws combined with suture anchors for split fractures of the greater humeral tuberosity (Liu-Gang IV): a novel guider technique**

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### **ABSTRACT (upto 300 words)**

**Objective** To compared the clinical effectiveness between arthroscopic hollow screws combined with a suture anchor, hollow screws and proximal humerus internal locking system(PHILOS) in the treatment of split-type fractures of humeral greater tuberosity.

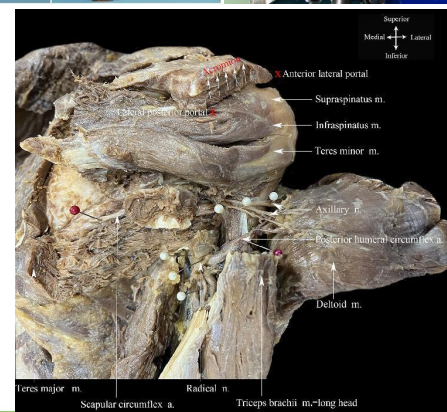
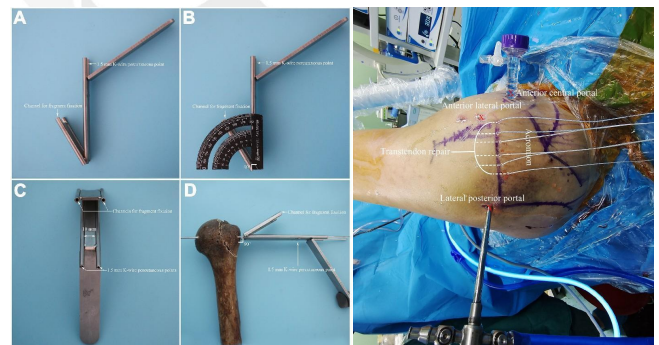
**Methods** A retrospective study was conducted to analyze the 54 patients with split-type fracture of humeral greater tuberosity who had been admitted to Department of Joint Surgery, Hospital of Traditional Chinese Medicine, Affiliated to Southwest Medical University from May 2015 to August 2020. There were 17 males and 37 females with an age of  $(58.4 \pm 12.1)$  years. According to different treatment methods, they were divided into 3 groups. Group A of 18 cases was treated with arthroscopic hollow screws combined with a suture anchor, group B of 18 cases with hollow screws, and group C of 18 cases with PHILOS. The length of surgical incision, and range of shoulder motion, visual analogue scale(VAS), and American Shoulder and Elbow Surgeons(ASES) score at the last follow-up were recorded and compared between the 3 groups.

**Conclusions** In the treatment of split fractures of humeral greater tuberosity, arthroscopic hollow screws combined with a suture anchor, hollow screws and PHILOS can all relieve pain and restore joint function of the shoulder. However, arthroscopic hollow screws combined with a suture anchor are the most

recommendable due to their advantages in minimally invasiveness and reduction in complications.

### **BIOGRAPHY (upto 200 words)**

Gang Liu, has received his PhD from Chiang Mai university, Thailand. He has published over 30 papers, authored a new subtyping of the split humeral tuberosity fracture. He has worked to integrate basic and clinical research on 3D printing and clinical instrumentation of this fracture, and is committed to bringing better medical technologies to more underprivileged patients in Southeast and East Asia. He is a member of the reviewers board of several prestigious journals.



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