

## A Rare Complication After Shoulder Arthroplasty, Radial Nerve Palsy: A Case Report

Kishan BS, Ezrat B Samadi, Felix LYS

Department of Orthopaedic Surgery, Ampang Hospital, Jalan Mewah Utara, Pandan Mewah, 68000 Ampang, Selangor, Malaysia.

### INTRODUCTION:

Shoulder arthroplasty modernized by Neer and al for proximal humerus fracture has shown excellent outcome.<sup>1</sup> Despite its clinical success, complications do occur. Neurological injury is a rare complication with an estimated incidence 1% to 4%.<sup>2</sup> Here we would like to report an uncommon complication of radial nerve palsy hence to discuss the possible causes and preventive measures.

### CASE REPORT:

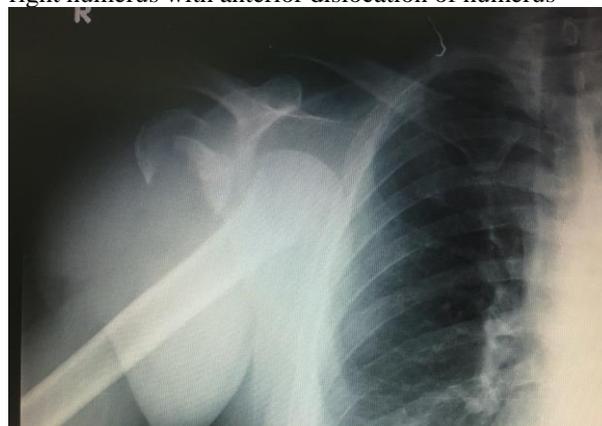
Mr X, a 50 year old gentleman, right hand dominant who works an office clerk, presented with a 4 parts fracture of proximal right humerus with anterior shoulder following a motor-vehicle accident (Figure 1). He underwent a shoulder hemiarthroplasty 2 weeks post-trauma. Procedure was performed under interscalene regional block with a standard delto-pectoral approach. The displaced humeral head button hole into pectoralis major muscle was removed carefully under direct visualization. No complication occurred intra-operatively. Shoulder x-ray showed a well-placed, cemented humeral stem arthroplasty (Figure 2). On post-operative evaluation, patient had clinical evidence of complete radial nerve palsy; where else other peripheral nerves were intact. This initially attributed to the residual effects of interscalene block. However on discharge post-operative day 5, there was no improvement.

### DISCUSSION:

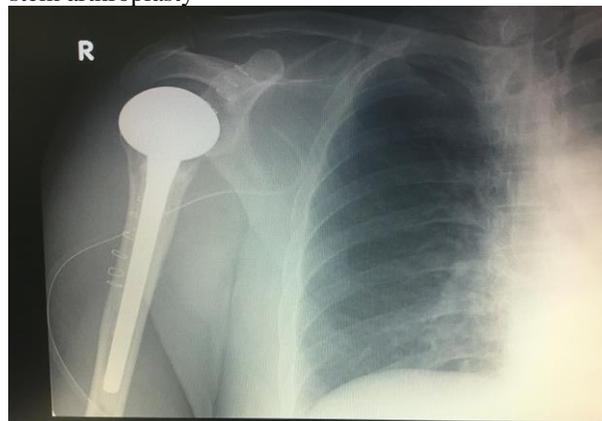
Complications related to shoulder implant arthroplasty are well documented. Incidence of complications approached 14%.<sup>3</sup> These include instability, rotator cuff tear, ectopic ossification, glenoid loosening, intraoperative fracture, nerve injury, infection and humeral loosening. No vascular injury was reported. Most cases of nerve injury are neuropraxia involving the axillary nerve, musculocutaneous nerve, median and ulnar nerves.<sup>3</sup> Age, sex, height, weight, preoperative diagnosis, and coexistent rotator cuff disease

were not statistically significant risk factors.<sup>2</sup> We believe that tractional injury on the brachial plexus during surgery is likely mechanism of injury. Placing the shoulder in excessive abduction, extension and external rotation for prolonged period of time especially during removal of the humeral head from the pectoralis major muscle may have caused tractional injury to the posterior cord.

**Figure 1:** X-ray showed 4 parts fracture of proximal right humerus with anterior dislocation of humerus



**Figure 2:** Shoulder x-ray showed cemented humeral stem arthroplasty



### CONCLUSION:

Although neurovascular injury after shoulder replacement surgery is rare, its occurrence could lead to significant impairment. Knowledge of shoulder anatomy, meticulous surgical technique and proper positioning and traction can decrease the chance of occurrence of this injury. Patient education regarding this injury should be advocated.

### REFERENCE:

1. Lugli T. Artificial shoulder joint by Péan (1893): the facts of an exceptional intervention