วิธีผ่าตัดแบบใหม่ในการยึดตรึงข้อ acromioclavicular หลุด

วีระชัย โควสุวรรณ, ทวีโชค วิษณุโยธิน, วินัย ศิริชาติวาปี, พลศักดิ์ จีระวิพูลวรรณ
ภาควิชาออร์โธปิดิคส์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น ขอนแก่น 40002

A New Fixtion Technique for Acromioclavicular joint dislocation

Weerachai Kosuwan, Tavechock Visanuyotin, Winai Sirichativapee, Polasak Jeeravipoolvarn
Department of Orthopaedics, Faculty of Medicine, Khon Kaen University, Khon Kaen, 40002. Thailand

หลักการและเหตุผล: วิธีผ่าตัดรักษาข้อต่อ acromioclavicular เคลื่อนหลุดนั้นมีสองวิธีที่นิยมทำคือ วิธียึดตรึงผ่านผิวข้อ และวิธียึดตรึงกระดูกไหปลาร้ากับ coracoid process ทั้งสองวิธีนี้อาจจะผ่าตัดเสริมโดยการเย็บซ่อมเอ็นรอบข้อ หรือ เอ็น coracoclavicular อย่างไรก็ตามทั้งสองวิธีมีข้อกำจัดและมีภาวะแทรกซ้อนเกิดขึ้นด้วยเสมอ

วัตถุประสงค์: เพื่อเสนอวิธีการผ่าตัดรักษาการเคลื่อนหลุดของข้อต่อ acromioclavicular แบบใหม่โดยใช้ malleolar screw หนึ่งตัวร่วมกับ washer ยึดจากปลายกระดูกไหปลาร้าไปยังฐานกระดูกของ acromion process

รูปแบบการศึกษา: เป็นการรายงานวิธีการผ่าตัด และผลการผ่าตัดในผู้ป่วย

สถานที่ทำการศึกษา: ภาควิชาออร์โธปิดิคส์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

ผลการศึกษา: มีขั้นตอนในการทำผ่าตัดที่น่าเชื่อถือ เพราะใช้เครื่องมือที่ช่วยกำหนดทิศทางในการเจาะกระดูก ซึ่งปลอดภัย และสามารถไขสกรูได้ทันทีโดยไม่ต้องสร้างเกลียว วิธีการนี้จะสามารถยึดข้อต่อได้แน่นหนาและแข็งแรงนำไปสู่การขยับของข้อหัวไหล่ได้ทันทีหลังผ่าตัด

สรุป: ได้เสนอวิธีการผ่าตัดแบบใหม่ที่ปลอดภัยและได้ผลดีในผู้ป่วยข้อต่อ acromioclavicular เคลื่อนหลุด

Background: There are two principles of operative technique for the treatment of acromioclavicular dislocation. One is transarticular fixation of the acromioclavicular joint and the other is coracoclavicular fixation. Both two techniques may or may not include ligamentous repaired. However, both techniques have many complications.

Objective: To present a new operative technique which based on extensive studying of anatomy of this particular area. This technique is open reduction and transfixation the lateral end of clavicle to the base of acromion process with single malleolar screw and washer.

Study Design: Case report.

Setting: Orthopedics department, Faculty of Medicine, Khon Kaen University.

Results: The reliability technique was presented by using the aiming device for directing the drill from the clavicle to scapular spine. This technique was done in one patient. This technique provides the ritid and stable fixation of the joint, therefore, the patient can move his shoulder immediately after operation.

Conclusion: The new operative technique for acromioclavicular joint dislocation has been presented.

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There are many techniques for the fixation of type III acromioclavicular joint dislocation. The primary intra-acromioclavicular (AC) joint and coracoclavicular ligament fixations, with and without coracoclavicular ligaments repair of reconstruction, are techniques that have been used in literature[1]. These techniques have their owns advantages and disadvantages. The acromion is usually thin and curved, therefore, an acromioclavicular joint fixation is difficult, even when performed as an open or closed procedure[1]. Moreover, the pin migration and irritation to deltoid muscle by the pins are complications of this technique[1]. A coracocla vicular ligament fixation even when fixed with a screw or sutured materials is diffiuclt to perform due to the

small size of the coracoid process. We would like to introduce a new technique of extraarticular fixation of the AC joint by using malleolar screw fixation from the distal end of the clavicle to the based area of the acromion process posteriorly **Figure 1**.

Case report

A 37 year-old man was admitted after sustaining a motor cycle accident. He complined of severe pain in the right shoulder area. On physical examination, there was a prominence of the lateral end of his right clavicle with tenderness. He had a painful limitation of shoulder elevation. The X-ray of the right clavicle revealed a dislocation of acromioclavicular joint type III. The patient was operated on his right AC joint while lying on the left lateral decubitus position. The first incision was over the AC joint. Exploration of the AC joint and debridement were performed. Reduction of the AC joint was done. The second stab incision was performed and identifying the bony structure at the based area of the acromion process. A pinpoint reduction forcep was used to maintain the position. The aiming device was, then, used for locating and directing the drilling hole from the anterior aspect of the lateral end of clavicle (2 centimeter from the joint surface) to the based area of the acromion process posteriorly. The depth of the drilled hole (four cortexes) was measured and an appropriate length of the malleolar screw was used **Figure 2.** The joint capsule was repaired and the bleeding was checked. The skin incisions were closed. An arm sling was used and early mobilization was started immediately **Figure 3**.

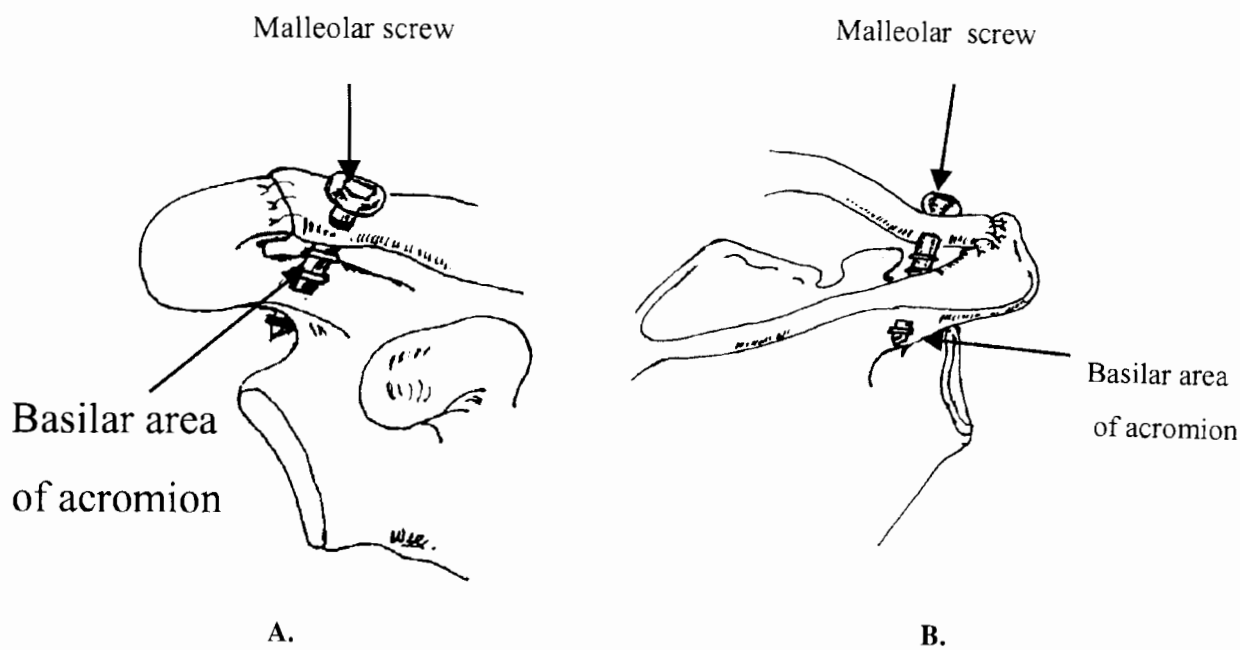
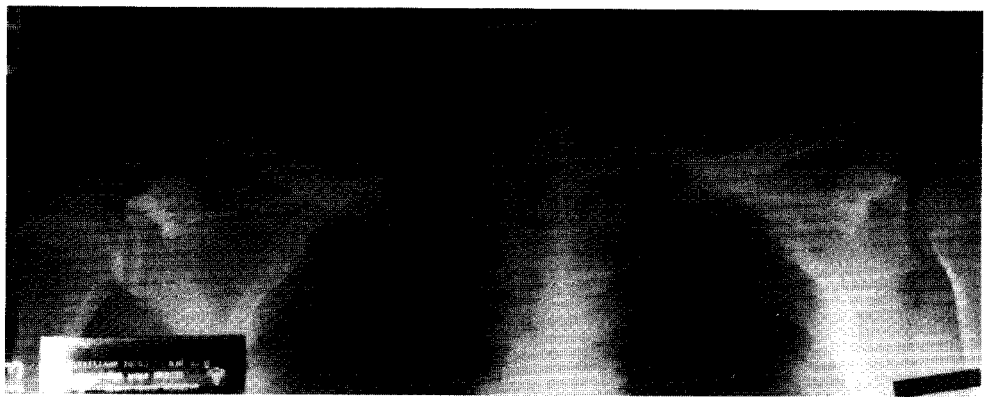
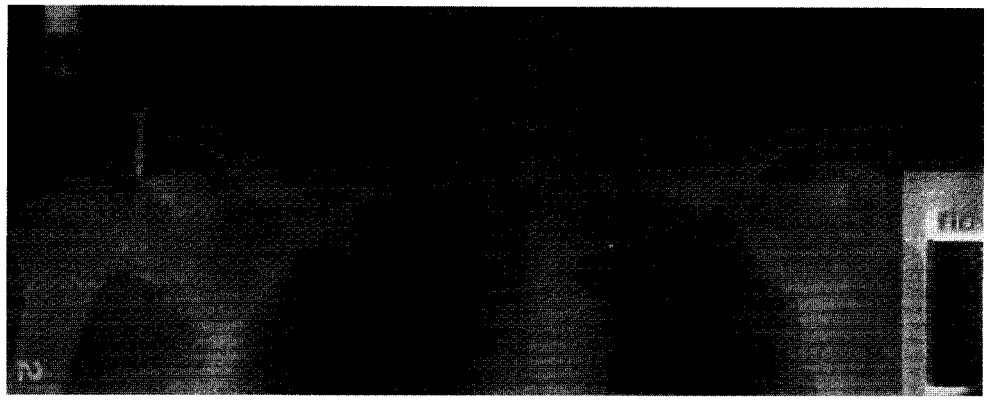


Figure 1. Diagram demonstrating A. an anatomical configuration of the lateral end of clavical and the neck based of the acromion process. B. a fixation technique of extraarticular fixation for acromioclavicular joint dislocation by using malleolar lag screw.



A.



B.

Figure 2. A. and B. Anteroposterior and axillary roengenograms of the right acromiclavicular joint before operation. C. and D. Anteroposterior and axillary roengenograms of the right acromiclavicular joint after operation.

Discussion

The anatomical relationship between the lateral end of clavicle and the based area of the acromion process was similar to the apex of triangle (Figure 1.). If the lateral end of clavicle is in the anatomical position of the AC joint it's posterior surfacr will contact with the anterior surface of the based area of the acromion process. This anatomical configuration will prevent posterior displacement of the lateral end of clavicle while the lag screw effect of the malleolar screw was applied. The pure motion of the AC joint has a limitation of only 5-8 degree during overhead elevation of the arm[2-6]. This fixation technique will be less affected by this motion as found in the Bosworth lag screw technique[7].

The thickness and broadness of the bone in the based of the acromion process, therefore, will increase the freedom of direction for drilling the hole from the clavicle to the based of the acromion process. Moreover, in this area there is no vital structure of large muscle so this technique is a safe procedure and less interfering to the muscle. Earlgy mobilization, therefore, is recommended and the patient needs to stay in the hospital for only one day. The screw may mot be removed as in the Bosworth's technique[7].

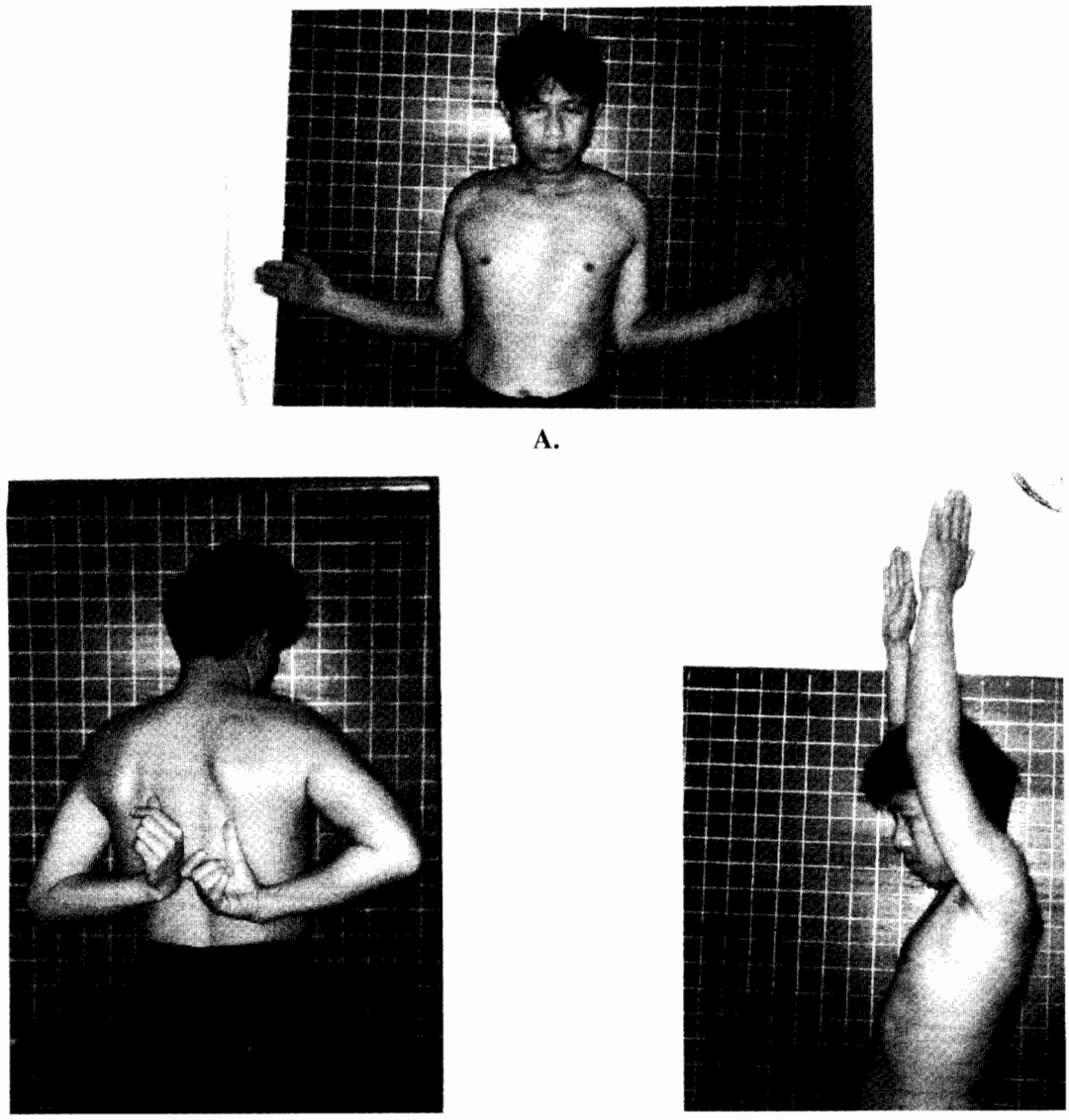


Figure 3. The shoulder motion of the patient one month post operation.

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