

potentially linking chronic infection to ischemic stroke is a continuous low-grade inflammation that may stimulate procoagulant pathways and promote atherogenesis, for example, by activated mononuclear leukocytes. Chronic infection as a vascular risk factor could explain the association of leukocyte count, and fibrinogen with stroke and myocardial infarction and constituents of Hp were shown to activate leukocytes. Result of our study may support existence of direct and indirect effect of Hp on atherogenesis. We also found that WBC, fibrinogen, AT 3, HDL-cholesterol, LDL-cholesterol, and VLDL-cholesterol levels of the stroke patients were higher than healthy control subjects. Anthropological measurements are important and should be taken in this case. However, we could not determine anthropological measurements due to coma in the patient group. Some authors suggested that activation of leukocytes, promotion of leukocyte-endothelium interaction and conversion of local endothelium be a prothrombotic state.<sup>5</sup> Fibrinogen is an acute phase protein and its level strongly corresponds to the process of atherogenesis. Chronic Hp infection may enhance plasma fibrinogen concentration and, therefore, may increase blood viscosity and promote clot formation in Hp positive persons. There may be a possible interaction between Hp infection and acute cerebrovascular stroke. An Hp infection is a well-treatable condition, and its identification and eradication may be important on stroke prevention.

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Open bankart repair using suture anchors and capsular shift for recurrent anterior shoulder dislocation

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Instability of the shoulder is one of the most common disorders affecting the shoulder particularly in young active patients. The glenohumeral joint is more frequently dislocated than any other major joint in the body. The exact nature of the essential lesion of recurrent anterior instability is still not well understood. A common cause of the recurrent dislocation of the shoulder is the avulsion of the anterior capsular labrum complex (Bankart lesion), which is the most important stabilizer for the glenohumeral joint.<sup>1</sup> Various procedures have been described for the repair of the traumatic anterior dislocation of the shoulder, but the most popular surgical management is the Bankart repair (described by Bankart<sup>2</sup> in 1939), which is a reattachment of the capsule to the glenoid rim by placing drill holes through the bone. In 1991, Richmond et al<sup>3</sup> described their modification of the Bankart procedure using suture anchors. The open Bankart repair using suture anchors, and capsular shift for recurrent anterior dislocation of the shoulder is a predictable method of restoring shoulder stability in recurrent dislocation. The suture anchors facilitated the Bankart repair, decreased operative time, spared the articular surface, and allowed secure and quick fixation of the Bankart lesion to the anterior glenoid cavity, in comparison to the trans glenoid traditional sutures. The capsular shift technique adds to the stability without significant reduction of joint motion, mainly in external rotation. Open surgical stabilization of the shoulder has been the gold standard against which all other techniques have been compared. This is attributable to a success rate of 94-97%.<sup>4</sup> The success is defined as the absence of further complications of subluxation or dislocation, presence of stability, pain relief and a near-normal range of motion which will allow overhead function. The goal of surgical repair of anterior shoulder dislocation is to restore stability without compromising shoulder motion. Motion and function need not to be sacrificed in exchange for stability. The purpose of this study was to determine the efficacy and the results of open Bankart repair using suture anchors and capsular shift for the treatment of recurrent anterior dislocation of the shoulder.

This procedure was performed at King Hussein Medical Center, Amman, Jordan. Sixty male patients underwent Bankart repair using suture anchors and capsular shift (mean age of patients was 24 years, range 18-38). All patients were military personnel and were involved in high demand military activities. All had history of trauma that was believed to have initiated the instability. All patients had recurrent dislocations more than 3 times (the number of recurrent episodes of instability ranged from 3 to 22). All had a positive sulcus sign and a positive anterior apprehensive test. All patients underwent Bankart repair using 3.7 mm TAG (Acufex) suture anchors, and Polydioxanone (PDS) sutures. Surgery was performed on 38 left shoulders and 22 right shoulders. The dominant shoulder was involved in 32 patients and the non-dominant shoulder in 28 patients. Immobilization in a sling was carried out for 6 weeks postoperatively and then free active range of motion in all directions was permitted followed by strengthening exercises and coordination training. Military training was allowed at 6 months if the shoulder had regained functional stability. Clinical follow up ranged from 18-36 months after operation with an average of 28 months.

Operative findings were as follows: Bankart lesion (avulsion of the capsule and labrum from anterior glenoid) was identified in all patients (100%). Excessive laxity of the capsule was identified in all patients (100%). Hill Sachs lesions of the humeral head were identified in 41/60 patients (68%). All 60 patients were available for follow up, which was conducted by personal interview and clinical examination. Average follow up period was 28 months (range from 18-36 months). The Rowe scoring system<sup>3</sup> was used to assign stability, function, and range of motion. In this 100-point scoring system, 50 points are assigned for stability; 30 points for function; and 20 points for motion. The ratings are assigned as (100-90) points excellent; (89-75) points good; (74-51) points fair; and (50 or less) points poor. The results were excellent in 51 patients (85%), good in 7 patients (11.7%), fair in 2 patients (3.3%); one of those 2 patients had recurrence feeling of instability without subluxation, the other had further dislocation after 12 months. The patient who had a dislocation of the involved shoulder after the procedure, sustained a re injury of the shoulder 12 months postoperatively in a fall, landing on the shoulder, after heavy military activity, but this did not warrant repeating the operation.

Postoperative outcome was as follows: 59 patients (98.3%) had no postoperative pain. One patient (1.7%) had pain with strenuous activity; controlled by non-steroidal anti-inflammatory drugs. Fifty-seven patients (95%) had no limitations in

their jobs (returned to their military activities, 5 of them with parachute jumping). Two patients (3.3%) had limitation of external rotation, one patient had loss of 5 degrees, the other had loss of 15 degrees, in external rotation. Fifty-eight patients (96.6%) regained nearly all of their shoulder motion. The recurrence rate was 1.6%. There were no infections, or neurological deficits reported. Two patients (3.3%) had limitation of external rotation, one patient had loss of 5 degrees, the other had loss of 15 degrees, in external rotation. The anatomical repair of the underlying pathology, reattachment of the labrum, and capsule laxity will bring the best results in the long term for patients who have had recurrent anterior dislocation of the shoulder.

The Bankart procedure is considered by many surgeons to be the treatment of choice for recurrent anterior instability of the shoulder, particularly if the disorder is a result of trauma. This is due to the repair directly addresses the torn or attenuated capsule or labrum, or both, at the glenoid rim.<sup>6</sup> The open Bankart repair has generated excellent results with high patient satisfaction, and low recurrence rates. There is almost no loss of external rotation movement while the stability of the shoulder is greatly improved.<sup>7</sup> The Bankart repair using trans glenoid traditional sutures is popular, but it is technically a difficult procedure. It needs special forceps, curved awls and angled drills. Using suture anchors simplifies the Bankart repair, decreases operative time, spares the articular surface, and allows secure and quick fixation of the Bankart lesion to the anterior glenoid cavity. The use of suture anchors is an appropriate way of reattaching the capsulolabral complex to the glenoid cavity to restore stability in recurrent anterior dislocation of the shoulder. Arthroscopic repair of instability has advanced, although recurrence rates of instability appear to be higher than open repair in most series, and also requiring a high learning curve.<sup>8</sup> The recurrence of instability after arthroscopic stabilization has been significantly higher than after open repair, therefore, the open Bankart repair remains the gold standard for operative stabilization of recurrent anterior dislocation of the shoulder. The purpose of a capsular shift is to eliminate excess capsular laxity and to allow repair of the stretched anterior aspect of the capsule. Anatomical repair of subscapularis will prevent limitation of external rotation. Capsulorrhaphy will add to the satisfactory results, in respect to stability, pain relief, range of motion and function.

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 Bronchial artery embolization in China

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**P**rior to bronchial artery embolization (BAE), the number and origin sites of bronchial arteries from the aorta should be carefully evaluated to determine the optimal angiographic approach. This can be accomplished with a preliminary descending thoracic aortogram. Abnormal bronchial arteries are visualized on an initial thoracic aortogram in the majority of affected patients. A descending thoracic aortogram is also useful in the detection of nonbronchial systemic arteries that supply parenchymal lesions. Although cobra-type curved catheters are most commonly used for catheterization of the bronchial artery, several different types of catheters for example Simmons-1, RLG, and Yashiro-type, should be prepared for optimal selection of bronchial arteries. The usefulness of a microcatheter for selective BAE has been emphasized in many recent articles.<sup>1-5</sup> This superselective catheterization permits stabilization of the catheter position within the bronchial artery and safe positioning in the bronchial circulation

beyond the origin of spinal cord branches, which prevents severe complications. After catheterization of the bronchial artery, bronchial angiography is performed with manual injection of contrast medium.

Bronchial arteries that originate outside the area between the T5 and T6 vertebrae at the level of the major bronchi are considered to be anomalous. The reported prevalence of bronchial arteries with an anomalous origin ranges from 8.3-35%. These aberrant bronchial arteries may originate from the aortic arch, internal mammary artery, thyrocervical trunk, subclavian artery, costocervical trunk, brachiocephalic artery, pericardiacophrenic artery, inferior phrenic artery, or abdominal aorta. Aberrant bronchial arteries can be distinguished anatomically and angiographically from nonbronchial systemic collateral vessels in that they extend along the course of the major bronchi. In contrast, nonbronchial systemic collateral vessels enter the pulmonary parenchyma through the adherent pleura or via the pulmonary ligament, and their course is not parallel to that of the bronchi. The majority of aberrant bronchial arteries originate from the aortic arch. The prevalence of bronchial arteries with origins outside the aorta is unknown. Interventional radiologists should be aware of the possible presence of aberrant bronchial arteries, especially when a significant bronchial arterial supply to areas of abnormal pulmonary parenchyma is not demonstrated during a catheter search or at descending thoracic aortography. In addition, bronchial arteries of anomalous origin should be suspected and investigated angiographically in patients who present with recurrent hemoptysis despite successful embolization and in those in whom the source of bleeding has not been detected.<sup>2,3</sup>

Angiographic findings in massive hemoptysis include hypertrophic and tortuous bronchial arteries, neovascularity, hypervascularity, shunting into the pulmonary artery or vein, extravasation of contrast medium, and bronchial artery aneurysm. Although extravasation of contrast medium is considered a specific sign of bronchial bleeding, this finding is rarely seen, and its reported prevalence ranges from 3.6-10.7%.<sup>3</sup> Thus, the determination of which arteries are to be embolized should be based on a combination of computerized tomography (CT), bronchoscopic, and angiographic findings with clinical correlation. All angiograms, including intercostal arteriograms, must be carefully scrutinized for opacification of spinal arteries to avoid inadvertent embolization.

A variety of embolic materials are used for BAE. Absorbable gelatin sponge is widely used because it is inexpensive, easy to handle, and has a controllable embolic size. However, disadvantages