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Comment on the Article „Algorithm for Evaluation of Bipolar Defects in Anterior Instability of the Shoulder“

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The actuality of the issue of diagnostics and treatment of patients with shoulder joint instability is not raising the doubts today in view of high spread of such pathology and absence of a single reference system for practicing specialists in respect of rational choice of treatment tactics. Evolution of arthroscopy in orthopaedics from end of 1990-ies allowed surgeons not only to better understand the morphology of injuries to capsule-labral complex triggering shoulder instability but provided excellent options for restoration by various anchor suture techniques. Since then orthopaedics surgeons maintain great keenness on arthroscopic Bankart procedure. First of all it's related to the anatomical character of this procedure, simplicity and safety of its surgical technique. However the issue of shoulder instability is extremely complicated and diversified which is confirmed by multiple classifications elaborated by researchers during learning process of this topic [1-2]. And as is well known the attempt to solve a highly complex problem by a single simple solution is destined to fail. Accumulation of surgical experience and analysis of late term outcomes after arthroscopic Bankart procedure established the fact of unacceptably high rate (from 12 to 42%) of postoperative recurrent dislocations in the long term (from 2 to 5 years) [3–5] which proves the above. Some of current literature reviews comparing outcomes of Bankart and Latarjet surgeries present data that in long term follow up the Latarjet procedure ensure more secure shoulder stabilization (recurrence rate 2,7–5,0%) but is featured by the highest rate of neurological complications (9,4–17,2%) [6]. Due to this a rational choice between Bankart and Latarjet is the biggest dichotomy of current orthopaedic treatment for shoulder instability.

At present, orthopaedic surgeons have clinical and roentgenological concepts to make the choice. Clinical evaluation of the shoulder instability index (ISIS) suggested by F. Balg and P. Boileau in 2007 is undoubtedly a diagnostics tool which significantly altered and simplified surgical approaches to treatment of patients with posttraumatic shoulder instability in Russia as well as in many European countries and Canada [7]. It should be noted that the present evalu-

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ation system remains less known and little used in the USA where orthopaedic community is greatly oriented on roentgenological „glenoid track“ diagnostics concept of — assessment of engaging defects of biomechanical pair „glenoid — humeral head“ developed in 2017 by E. Itoi et al [8]. Just for this reason the majority of surgeons in the USA are considering Latarjet technique as a saving procedure performed only in case of a recurrent instability after Bankart. The key rationale for such approach given by orthopaedic surgeons in the US is the „non-anatomical“ character of Latarjet procedure and substantial risk of neurologic injury, so called „10% quota“.

ISIS is a 10 points pre-operative questionnaire which takes into consideration six most valuable preoperative risk factors for development of shoulder instability after arthroscopic Bankart procedure. Statistically significant correlation of those factors with risk of postop recurrence was proven in previous clinical studies of surgeons with great clinical experience of such procedure. The main advantage of ISIS concept remains simple computing of scores. Already at the first visit surgeon should ask a patient three questions: 1) how old are you? (younger than 20 + 2 points); 2) what is your regular sports activity? („overhead“ or contact sports +1 point); 3) what is the level of your sport? („competition“ + 2 points). Then surgeon examines the patient to identify sign of capsule hyperlaxity (+1 point) and carefully check the visualization of bone injury on glenoid side (+2 points) and humeral head (+2 points). After calculating the final score a surgeon can provide evidence based explanations to the patient and relatives why arthroscopic Bankart can or can’t be used for treatment of this specific instability. A group of authors from Italy conducted and published their clinical study aimed to answer the question „is the ISIS a right tool to forecast failures after primary arthroscopic procedure for anterior shoulder instability?“ in February 2019 in the „Arthroscopy“ journal [9]. In our opinion the present work is a valuable input into independent assessment of ISIS validity. M.Loppini et al confirmed based on big clinical material (670 patients with at least 5 years follow up after arthroscopic Bankart) that recurrent shoulder dislocation averagely occurs 3 years postoperatively, and the multifactor analysis performed during this study indicates that contact sports and posttraumatic bone defect in glenoid are serious risk factors for recurrent dislocations [9]. We also fully support the opinion of Bouliane et al [10] that enhancement of accuracy in X-ray evaluation of bone lesions in the „humeral head — glenoid“ pair significantly improves information value and reliability of ISIS. According the paper we are commenting the use of two and three plane CT and MRI for visualization of glenoid and humeral head lesions provides the most precise scope of injury and should be an integral part of standard preoperative examination for patients with shoulder instability.

Definitely, a rational choice of surgical option for treatment of shoulder instability should be made considering risk factors of the patient (ISIS concept) as well as size and location of bone lesions („glenoid track“ concept). Patients with ISIS less than 3 and no signs of changes in the contour of articular process of scapula on standard X-rays of shoulder joint it would be appropriate to go for arthroscopic reconstruction of shoulder joint capsule (Bankart procedure). Patients with ISIS of 3 and more points and/or with signs of bone injury in glenoid (humeral head) on standard X-rays should undergo CT or MRI examination with following measurements to identify presence or absence of engaged defects. In all those cases it would be reasonable to use an isolated Latarjet procedure or in combination with remplissage for the defect of the humeral head.

Current literature doesn’t demonstrate a single approach to the treatment of primary

traumatic shoulder dislocation. For example, M. Loppini et al excluded the patients with acute shoulder instability from their research and respectively did not confirm ISIS validity for such cases [9]. In the available literature we did not see evidence on ability of early arthroscopic stabilization of shoulder by anchor suture of the capsule to prevent instability progressing from initial dislocation to chronic recurrent pathology. This fact should be taken into consideration when planning new research.

In respect of available data today we can state that Latarjet procedure can be selected much more often than it's now used in our practice as the first and only technique for treatment of recurrent instability. Continued improvement of known „mini-open" and arthroscopic techniques is required focusing on surgical tricks to minimize risk of injury to brachial plexus in order to enhance the reproducibility of this procedure and its safety in terms of neurological complications. All orthopaedic surgeons who operate often on shoulder joint must undergo this rather abrupt learning curve to master this reliable procedure.

In conclusion we would like to cite one the chief authors of ISIS diagnostic concept, the recognized expert in shoulder surgery Dr. Pascal Boileau: „...being asked a questions, in which patients the arthroscopic Bankart will be effective, today we exactly know only a part of the answer — in patients with preoperative ISIS over 3 points the game if over — too high recurrence risk".

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