



Age and time specific management of traumatic anterior shoulder instability

The ESSKA-ESA formal consensus

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This brochure is a summary of the ESSKA-ESA formal consensus on the management of patients with traumatic anterior shoulder instability. It does not contain every statement, and some of the included content may be summarized.

To access the complete material of this project, please visit:
<https://www.esska.org/page/Consensus>

GRADING DESCRIPTION

- *Grade A: high scientific level*
- *Grade B: scientific presumption*
- *Grade C: low scientific level*
- *Grade D: expert opinion*

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PRESIDENTIAL FOREWORD

There is great variation across Europe when it comes to medical praxis. Agreeing a common approach to pathologies or procedures has always been a challenge. But some such agreement is important, if we are to ensure standards. For years now, ESSKA has developed a strict and painstaking methodology which employs our considerable European expertise. We call it ESSKA European Consensus. Mixing scientific evidence and clinical expertise, this format aims to facilitate the dissemination of knowledge among the daily practitioners. One must underline the scientific value of such a project which should not be regarded as a simple expert opinion but as the result of a complex process based on high level scientific criteria such as pluralism (large European representativeness), iterative process, independence of the different involved groups.

Five ESSKA consensuses have already been delivered. More information is available on www.esska.org/page/Consensus.

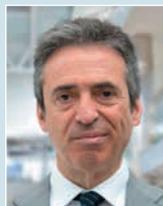
This year, at ESSKA 2024 Milan Congress, we are delighted to launch the ESSKA European Consensus on Age and Time Specific Management of Anterior Traumatic Shoulder Instability.

We thank Ladislav Kovacic and Eduard Alentorn Geli - the Project leaders - as well as the members of the Steering, Rating, and Peer Review Groups for their tremendous efforts and dedication.

A special acknowledgement also for our staff, and particularly Mrs Anna Hansen Rak, without whom this would not have been possible.



Roland Becker
ESSKA President
2022-2024



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CHAIRPERSONS FOREWORD

Patients facing the problem of anterior shoulder instability are common in orthopedic practice. Despite the relatively high prevalence of this condition in the population the optimal management remains the matter of debate. Areas of debate include diagnostic methodologies, nonoperative management, indications for surgery, surgical interventions and postoperative regimen. Scientific evidence published in the last decades provides significant improvement of understanding of the condition. On the other hand, even high-level studies are not able to answer all controversies about the appropriate management. For example, there is well known implication of glenoid bone loss on decision making. However, the amount of bone loss felt to be significant remains unclear. Furthermore, there are important regional differences in the philosophy of shoulder instability treatment. The result is contradictory management algorithm between surgeons which add further controversy to this topic.

ESSKA-ESA consensus project on traumatic anterior shoulder instability was established to intervene on this field of controversies by searching the agreement among the surgeons, experts on the topic, on the appropriate management which will yield the greatest patients benefit. Consensus is much more than simple expert opinion because it is based on through existing scientific evidence in the literature. Combining both, scientific evidence and expert opinion it can be extremely useful as a guideline for everybody treating patients with this condition.

Patients with anterior shoulder instability have different needs and individualized treatment strategy is often required. Consensus group recognized two important factors which influence decision making. These are age of the patient and time of patient presentation in the course of management. Therefore, the aspects of time including first-time dislocation and recurrent episodes of instability as the most obvious are included. Additionally, where necessary consensus statements were specified according to three age groups: adolescents (less than 20 years old), young adults (from 20-40 years old) and older adults (over 40 years old).

We want to thank all who participated in this comprehensive project. Starting with the members of the Steering and Literature group, who formulated pertinent questions, did immense literature search and proposed statements. Following by the members of the Rating group and Peer-review group from all over Europe who gave all the valuable comments. Special thanks to Nuno Gomes (Portugal), ESA Chairman, Philippe Beaufils, ESSKA consensus advisor, and Anna Hansen from the ESSKA Office for their constant and tremendous support, help and inspiration.

We hope that consensus will yield the purpose which is to provide the guidelines to help the practitioners in their daily clinical decisions regarding the diagnosis and treatment options when treating patients with traumatic anterior shoulder instability.



Ladislav Kovačič
Chairman



Eduard Alentorn-Geli
Chairman

HISTORY TAKING

What are the most important factors related to history taking for decision about conservative and surgical treatment in patients with first-time anterior dislocation?

The most important factors related to history taking for decision about conservative and surgical treatment in patients with an isolated episode of anterior shoulder dislocation are: age, residual apprehension, level of sport participation specially the involvement in contact sports, gender, degree of trauma especially mechanism of injury, occupation, and nerve injury (*Grade B*).

Age at the time of first dislocation is the most important variable that increases the risk of recurrence (*Grade B*).

Adolescents:

Younger patients, particularly those aged 14 to 18, are more susceptible to higher recurrence rates and type of sports (contact, collision and overhead) needs to be considered (*Grade C*).

Older adults:

In the elderly group pre-existing complaints from the shoulder might be related to pre-injury rotator cuff disorders. In addition, the greater the age, the greater the possibility for the patient to suffer from an associated rotator cuff tear (*Grade D*).

PHYSICAL EXAMINATION

What are the most important clinical tests findings that help to decide about conservative and surgical treatment in patients with recurrent anterior dislocation?

A thorough clinical exam must be performed in each case, including passive and active range of motion, according to what is tolerated by the patient (usually after 6 weeks). Both shoulders should be evaluated and compared. In each age subgroup the most important clinical findings to look for recurrent anterior shoulder dislocation are:

Adolescents:

The anterior apprehension sign is the most important indicator of persistent instability. Signs of shoulder hypermobility and general ligamentous laxity are important. Additionally, clinical tests including load and shift test, relocation sign and release test can be performed if tolerated (*Grade B*).

Scapular dyskinesia examination should be performed so that it can be addressed before any surgical treatment of shoulder instability is considered (*Grade D*).

Young adults:

The combined use of the apprehension test and relocation test. [...] The surprise test might be of value if these two previous tests provide dubious results. Hypermobility of the shoulder joint and generalized hypermobility should be examined specifically in all patients in whom surgery is considered (*Grade B*).

The anterior drawer test and the different labral and SLAP stress tests might be of use in some cases (*Grade D*).

Scapular dyskinesia examination should be performed so that it can be addressed before any surgical treatment of shoulder instability is considered (*Grade D*).

Older adults

The most important factor in this age group is rotator cuff's integrity. Recurrence is a less frequent problem in patients of this age group. However, when a patient of this age group suffers from recurrent episodes of dislocation, a massive full-thickness rotator cuff tears should be suspected, and the rotator cuff integrity should be evaluated (*Grade C*).

IMAGING STUDIES

What are the most important imaging studies to decide between conservative or surgical treatment for first-time anterior dislocation?

In case of first-time anterior dislocation pre- and post-reduction X-ray imaging is paramount for basic bone damage identification and joint reduction confirmation. X-ray trauma series with 3 orthogonal views (anteroposterior, axillary and scapular/Y) is recommended and if any bony lesion is suspected a CT scan should be performed, particularly measurements on 3D CT scans. It enables to quantify glenoid bone and Hill-Sachs lesion. *(Grade B)* [...]

Adolescents:

One should be cautious to minimize the risk of radiation exposure in children and adolescent population. MRI can replace CT scan when assessing bony injuries in this group of patients *(Grade D)*.

Older adults:

Bone fragility in older adults is high; therefore pre-reduction X-ray is mandatory to identify fractures. Based on the higher risk of associated cuff tears in older adults, there is a low threshold for an ultrasound or MRI imaging based on persistent clinical symptoms *(Grade B)*.

What are the most important imaging studies to decide between conservative or surgical treatment for recurrent anterior dislocation?

Surgical treatment is recommended for most of the patients with recurrent instability, as conservative treatment has failed. Imaging studies in this situation play a pivotal role in evaluating bone injury and soft tissue pathology, allowing decision-making on the appropriate type of surgical treatment rather than to decide between conservative and surgical treatment.

MRI or MRI arthrography allows proper detection and evaluation of soft tissue injuries and bony injuries in the majority of cases *(Grade A)*. [...]

If precise evaluation of bony injuries and bone loss, whether on glenoid or humeral side, is necessary, then CT is indicated. *(Grade B)*. [...]

Adolescents:

In pediatric and adolescent patients with recurrent anterior shoulder dislocation MRI and/or MRI arthrography have major role in evaluating bone injury and soft tissue pathology. While CT scans can offer additional information, their judicious use is essential, particularly in young patients due to the potential risks of ionizing radiation *(Grade D)*.

ASSOCIATED INJURIES

What is the glenoid bone defect cut-off to indicate a bony procedure (bone block or Latarjet) in first-time anterior dislocation according to each specific age subgroup?

Displaced acute glenoid fractures should be fixed, particularly in adolescents and young adults (*Grade C*).

In cases of glenoid bone resorption from a previous fracture seen a long time after the first-time dislocation, the percentage of bone defect should be quantified. A bony procedure is recommended in cases of a glenoid bone defect cut-off of 20% in adolescents and young adults (*Grade B*).

Patients with subcritical bone loss (10-15%) may require a bony procedure, especially in cases of significant bipolar bony injuries or other risk factors (*Grade C*).

Some surgeons would recommend bony procedure even in case of no glenoid bone loss (*Grade D*).

Older adults:

There is no clear cut-off value for older adult patients, as glenoid bone defects are better tolerated and related to a lower recurrence rate (*Grade D*).

What is the glenoid bone defect cut-off to indicate a bony procedure (bone block or Latarjet) in recurrent anterior dislocation?

A glenoid bone defect of 15-20% is generally accepted as a cut-off to indicate bony procedures across all age groups in recurrent dislocations. However, the cut-off might be decreased in the youngest (adolescent) patients with other risk factors or increased in older adult patients without other risk factors (high-level contact or collision sports, high number of instability episodes and/or associated Hill-Sachs lesion (*Grade B*)).

Some surgeons would recommend bony procedure even in case of no glenoid bone loss (*Grade D*).

What is the Hill-Sachs lesion size cut-off to indicate an associated procedure (i.e., remplissage or bony procedure) in first-time anterior dislocation?

Hill-Sachs lesions should be evaluated in the context of the glenoid track. Without glenoid bone loss, off-track Hill-Sachs lesions indicate the necessity for an associated procedure (*Grade B*). [...]

What is the Hill-Sachs lesion size cut-off to indicate an associated procedure (i.e., remplissage or bony procedure) in recurrent anterior dislocation?

Although a cut-off value of 20-25% of Hill-Sachs lesions has been suggested, this number is not adequately supported in the existing literature (*Grade C*).

The consensus group cannot provide a cut-off value of Hill-Sachs lesions upon which an associated procedure is recommended. Because of the recurrent nature of the instability, a lower threshold should be applied to indicate an additional procedure (i.e. a remplissage or bony procedure), particularly in the adolescent and young adult groups (*Grade D*). Therefore, the glenoid track, individual patient factors (including age, sports and activity levels) and associated injuries other than the HSL (bipolar bone loss) must be evaluated when considering an additional procedure (*Grade B*).

CONSERVATIVE TREATMENT

Is immobilization recommended after first-time anterior shoulder dislocation (yes/no, type, position and timing)?

Adolescents and Young adults:

After first-time anterior shoulder dislocation, immobilisation in a sling is recommended for pain management, but early mobilisation in the first week might yield similar results as using a sling for three weeks.

The preferred type of immobilisation is internal rotation. Evidence in the literature on the effectiveness of immobilisation in external rotation is controversial (*Grade C*).

Older adults:

No comparative studies on this subject have been published for older people. Immobilisation is recommended for pain management until concomitant injuries have been excluded (*Grade C*).

SURGICAL TREATMENT

What are the indications/contraindications for soft tissue procedure after first-time anterior shoulder dislocation?

When surgery is indicated after a first-time anterior shoulder dislocation the surgical technique might be either a soft tissue procedure or a bony procedure. Acute surgical stabilization of first-time anterior shoulder dislocation in young, active patients is more effective than conservative treatment at long-term follow up, based on lower recurrence rate, better return to sports, and higher patient-perceived improvement. No definite indications and contraindications have been defined in the literature for soft tissue procedures after first-time anterior shoulder dislocation in older adults patients.

Some surgeons would recommend systematically bony procedure and have no indications for soft-tissue procedure (*Grade D*).

Indications for soft tissue procedures in first time anterior shoulder dislocation are:

- Injury of the capsulolabral complex including the anterior inferior glenohumeral ligament (IGHL) without critical glenoid bone loss requires a Bankart procedure. Bony

Bankart fractures of a size that cause acute instability and new dislocations after the reduction, should be repositioned, and fixed in the acute phase (*Grade B*).

- In cases of a humeral avulsion of the glenohumeral ligament (HAGL) the ligament has to be repaired at the humeral side (*Grade B*).
- Patients with a full thickness rotator cuff tear as a consequence of an anterior shoulder dislocation need a rotator cuff repair to stabilize the joint and prevent degenerative changes. This is the main indication for a soft tissue procedure in the older adults group and the most performed procedure is rotator cuff repair and not labral repair (*Grade B*).
- Additional indications in full version.

Contraindications for soft tissue procedures in first time anterior shoulder dislocation:

- Severe humeral, glenoid, or bipolar bone loss (*Grade B*).
- Presence of severe osteoarthritis (*Grade B*).

Special attention is needed in patients with collagenous and soft tissue pathology (e.g., Marfans, Ehlers-Danlos, Down Syndrome).

What are the indications/contraindications for soft tissue procedure after recurrent traumatic anterior shoulder dislocation?

Surgical stabilization is indicated in most patients suffering from recurrent anterior shoulder instability. The surgical technique might be either a soft tissue procedure or a bony procedure. An increasing number of dislocations will lower the threshold for additional soft tissue procedures or bony procedures. Soft tissue procedures such as open and arthroscopic Bankart repair have proven to lower the recurrence rate in anterior shoulder dislocation.

Some surgeons would recommend systematically bony procedure and have no indications for soft-tissue procedure (*Grade D*).

- Specific indications in full version.

When should additional soft tissue procedure be added to the regular Bankart repair (remplissage/ASA/DAS or others)?

Both for a first time and a recurrent shoulder dislocation the decision for additional soft tissue procedures is based on the size and location of Hill-Sachs lesion, the anterior glenoid bone loss, the anterior glenoid soft tissue condition and on co-existing joint injuries. The purpose of additional soft tissue procedure is to lower the recurrence rate after Bankart repair in specific cases.

In the case of off-track Hill-Sachs lesion it could be argued that bony procedure is indicated, however if Bankart repair is chosen remplissage should be added to the regular Bankart repair (*Grade B*). [...]

What are the indications/contraindications for bone augmentation/Latarjet procedures after a first-time anterior shoulder dislocation?

A bony procedure is recommended in cases of a glenoid bone defect cut-off of 20% in adolescents and young adults (*Grade B*).

Patients with subcritical bone loss (10-15%) may require a bony procedure, especially in cases of significant bipolar bony injuries or other risk factors (*Grade C*).

Some surgeons would recommend systematically bony procedure and have no indications for soft-tissue procedure (*Grade D*).

The practice of collision sports, younger age or hyperlaxity can lower the threshold for a bone procedure even in patients with limited glenoid bone loss (*Grade C*).

Adolescents:

In the adolescent patients the risk of bone loss, both on the glenoid and humeral side is increased when compared to the adult population (*Grade B*).

The threshold for the Latarjet procedure after first time dislocation in this group of patients should be high with the possible exception of high-risk contact sports (*Grade D*). [...]

What are the indications/contraindications for bone augmentation/Latarjet procedure after recurrent anterior shoulder dislocation?

A bone augmentation procedure is indicated in patients with traumatic recurrent anterior shoulder dislocation and a critical glenoid bone loss (>20) (*Grade B*).

It can also be an option in cases of subcritical (10-15%) glenoid bone loss, especially with a concomitant off-track Hill-Sachs lesion (*Grade B*). The practice of collision sports, younger age, hyperlaxity and failed previous soft tissue procedure can lower the threshold for a bone procedure even in patients with limited glenoid bone loss (*Grade C*).

Some surgeons would recommend systematically bony procedure and have no indications for soft-tissue procedure (*Grade D*). [...]

POSTOPERATIVE REGIME

What are the criteria to return to sports after surgical treatment of anterior shoulder instability (yes/no, timing and goal)?

No specific criteria are defined for return to sport (RTS) after surgical treatment of anterior shoulder instability. The RTS must be individualized based on the patient's demands and the type and level of sport practised (*Grade C*).

The patient should have a stable shoulder with negative apprehension test, be pain-free, have a full active range of motion, restored scapulothoracic rhythm and appropriate strength compared to the contralateral shoulder. In addition, the patient should meet their sport's specific functional, proprioceptive, and physical demands. Psychological readiness of the patient remains mandatory. [...]

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