

# Role of Hyalgan in the treatment of arthrosis

Giovanni Di Giacomo MD, Alberto Costantini MD, Andrea De Vita MD,  
Nicola De Gasperis MD

Concordia Hospital for Special Surgery. Roma, Italy

Treatment of the shoulder joint by injection has been widely debated. The lack of guidelines concerning indications and the techniques for this treatment makes it difficult to assess its efficacy properly.

Our approach to shoulder injection relies on a correct diagnosis of the shoulder joint pathology on the basis of symptoms (pain, limited Range of Motion [RoM], etc.), age, gender, the patient's line of work, sports activities and any concomitant metabolic diseases.

Patient history and clinical examination must be supplemented with other instrumental tests; routine tests such as radiography can be useful diagnostic tools if the appropriate views are used and correctly interpreted.

For the sake of simplicity and brevity, we will merely stress that cortisone and hyaluronic acid are the substances used most frequently for intra-articular shoulder injections. The area of the shoulder that is treated most often is the glenohumeral space, and adhesive capsulitis is the pathology frequently treated with injections and subsequent rehabilitation.

Our aim is to create a practical and simple algorithm that can be used to refer the patient to the best available treatment.

Physical examination plays a fundamental role, and assessment of the passive RoM on the scapular and related planes is essential.

A limited passive RoM is normally due to capsular injury (capsulitis) or arthrosis, with similar symptoms in both pathologies (e.g. pain, night pain, difficulty executing active movements).

It is therefore essential that the two pathologies be correctly distinguished at diagnosis, as their treatment is completely different.

Shoulder X-rays performed in the proper anteroposterior (AP) view makes it possible to distinguish passive limitation of the RoM, caused by an intrinsic sclerotic process of the capsule (capsulitis), from a degenerative process (arthrosis) due to secondary capsular injury following cartilage degeneration and synovial inflammation.

The AP view must be supplemented by two other views: the shoulder axial view and the outlet view. In our

daily practice the dynamic AP view with intra- and extra-rotation movements has proven to be particularly useful for detecting calcifying tendinopathies, which frequently trigger – and are associated with – adhesive capsulitis.

Primary adhesive capsulitis (without arthrosis) can be treated with intra-articular cortisone injections (Kenacort 1 cc + 4 cc saline) once every ten days, repeated three times. Patients who could potentially experience cortisone side effects (such as heart patients, diabetics, etc.) must be identified promptly.

The injection is performed following basic aseptic techniques, with the patient seated and the upper limbs in a neutral position; the needle is inserted into the glenohumeral space through a posterior route at 30 degrees of anteversion.

Rehabilitation treatment of capsulitis in stages 2 and 3 (i.e. with little or no pain) can be started during infiltration. If signs of even mild arthrosis are detectable on the X-ray, low-molecular-weight hyaluronic acid is preferable for treatment. In more serious cases of arthrosis (stages 2 and 3), Hyalubrix (high-molecular-weight hyaluronic acid) appears to be more effective because of its mechanical effects (medical device). Low-molecular-weight hyaluronic acid is a drug and, as such, it stimulates the production of endogenous hyaluronic acid by stimulating the synovial cells. At the same time, it acts through a competitive mechanism at receptor level, thereby improving proprioceptive control and inhibiting the action of the substances produced as part of the inflammatory process of the synovial fluid. High-molecular-weight hyaluronic acid (Hyalubrix) is a medical device, inasmuch as it has only a mechanical effect but no pharmacological ones. The treatment schedule consists of two annual cycles of five intra-articular injections of hyaluronic acid, once every ten days. In this case as well, rehabilitation can be useful, but due care must be taken to avoid exacerbating any pain or exceeding functional limitations.

Infiltrative anaesthetics in the subacromial space are frequently used to detect subacromial impingement.

Unlike what has been reported by other authors, we believe that these drugs do not play a very important role.

Correct patient history; careful assessment of passive and active RoM; close examination of the scapulothoracic joint, core and posture; and the most significant tests are sufficient for an accurate diagnosis.

Some authors recommend treatment with hyaluronic acid in the subacromial space in rotator cuff tendinitis and subacromial impingement. This treatment would appear to improve the microenvironment, thereby enhancing the results of rehabilitation and functional recovery.

### Bibliography

- Blaine T, Moskowitz R, Udell J, et al.: Treatment of persistent shoulder pain with sodium hyaluronate: a randomized, controlled trial. A multicenter study* J Bone Joint Surg Am. 2008;90:970-9
- Heyworth BE, Lee JH, Kim PD, et al: Hylan versus corticosteroid versus placebo for treatment of basal joint arthritis: a prospective, randomized, double-blinded clinical trial.* J Hand Surg Am. 2008;33:40-8
- Valiveti M, Reginato AJ, Falasca GF: Viscosupplementation for degenerative joint disease of shoulder and ankle* J Clin Rheumatol. 2006;12:162-3

*Ishikawa T, Arita S, Takagishi K, et al.: Therapeutic effect of hyaluronic acid injection for knee and shoulder joint* Clin Calcium. 2002;12:104-7

*Nozaki H.: Injection technique of intra-articular hyaluronic acid for knee osteoarthritis and periarthritis of shoulder* Clin Calcium. 2002;12:98-103

*Andrews JR.: Diagnosis and treatment of chronic painful shoulder: review of nonsurgical interventions* Arthroscopy. 2005;21:333-47

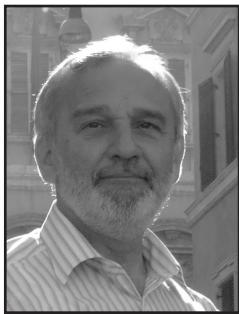
*Kelly MA, Moskowitz RW, Lieberman JR.: Hyaluronan therapy: looking toward the future* Am J Orthop. 2004;33(2 Suppl):23-8

*Altman RD.: Status of hyaluronan supplementation therapy in osteoarthritis* Curr Rheumatol Rep. 2003;5:7-14

*Leardini G, Perbellini A, Franceschini M, Mattara L.: Intra-articular injections of hyaluronic acid in the treatment of painful shoulder.* Clin Ther. 1988;10:521-6.

*Di Giacomo, G.; Pouliart, N.; Costantini, A.; De Vita, A. (Eds.) Atlas of Functional Shoulder Anatomy 2008. XVI. 232. ISBN: 978-88-470-0758-1*

## Kormány Imre (1953-2009)



Nagy veszteség érte lapunkat és az Osteologiai Szekciót: elhunyt Kormány Imre munkatársunk. Olvasóink közül személyesen azok ismerték, akik Balatonfüreden az osteológiai kongresszusokon átadták neki előadásuk számitógépes vetítési anyagát. Rövid életútja sajnálatosan hirtelen ért véget. Nyomdaipari üzemmérnöki diplomáját 1976-ban vette át. Pályáját az Akadémiai Nyomdában kezdte, majd 1985-től a Belügyminisztérium Nyomdáját vezette tizenhat éven át. Nyomdaipari tevékenységet folytató vállalkozását 1989-ben indította, melynek élete végeig ügyvezető igazgatója volt.

Számos orvosi témaúj ismeretterjesztő kiadványt jelentetett meg, így került kapcsolatba az Osteológiai Közlemények szerkesztőbizottságával. Szakértelmét és gondosságát, kitartó és ötletekben gazdag munkáját

nemcsak a folyóiratunk olvasói számára megszokottá vált nyomdalai színvonala dicséri, hanem számos más kongresszusi és egyéb tudományos kiadványunk is.

Szerteágazó aktivitása messze túlnőtt a szorosan vett nyomdalai feladatokon. Igazi szakértője volt a nívós kiadványszerkesztésnek, beleértve ebbe az orvosoktól származó kívánságok és a tipográfiai lehetőségek magas színvonálú összehangolását, és végleges megvalósítását is. Valódi alkotómunka szintjére emelte tevékenységét. Informatikai jártasága folytán sokrétű segítségére volt az Osteológiai Szekciónak és a „Csontizületibetegségek Korai Felismeréséért” Alapítványnak feladataik megvalósításában.

Kormány Imre több volt mint munkatárs, barátok lettünk. Széleskörű tájékozottsága és különlegesen jó humora kellemessé tette a hatékony együttműköést, és biztosította barátságunkat.

Korai távozása miatt szomorú szívvvel búcsúzunk lapunk hasábjain is Kormány Imrétől, és kifejezzük részvétünket családja számára. Emlékét megörizzük és megbecsüljük, a friss újságokat kézbe véve rá fogunk gondolni ezen túl is. Nyugodjék békében!