Strategies and Pitfalls in Surgical Therapy of Rheumatic Diseases

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INTRODUCTION:

About 1-2% of the European population suffers from inflammatory rheumatic diseases, induced by autoimmunological processes. Radiological disorders may look similar to degenerative osteoarthrotic changes, although the pathophysiological development of arthritis follows quite characteristic patterns. Often rheumatic patients need different therapeutic assessments to avoid complications and revision surgery in these multimorbid and vulnerable patients.

METHODS:

Strategies for sufficient surgery on autoinflammatory joint and tendon destructions were collected and summarized with a special view on pitfalls.

RESULTS:

Dealing with rheumatic joint diseases means to be familiar with the special risks associated with autoimmunological changes like vasculitis, neuropathy, instability of the craniocervical joints, rheumatic joint effusion, severe osteoporosis, increased rate of wound and systematic infections, insufficiency of heart, liver, lung, kidneys, muscles, bone, skin, and gastrointestinal illnesses. Especially a craniocervical instability and rheumatoid serositis may lead to avoidable lethal complications.

Besides the perioperative management and eventual modification of immunosuppressive drugs, mechanical aspects are important, to perform surgery in rheumatic patients on different joints in the appropriate order. Surgical correction of deformities of the extremities should be done from proximal to distal, while vertebral deformities should be corrected from caudal to cranial. Altogether it is helpful to start with the lower extremity when operative interventions are in question, to ensure the patient`s mobility. Deformities in rheumatoid arthritis are mostly symmetric. Therefore wrist fusion for example should be performed rather in a straight position, in contrast to slight extension in degenerative unilateral wrist arthrosis, to ensure postoperative hygiene.

Because of the lack of weight bearing, the joints of the upper extremities tolerate higher rates of destruction than those of the lower extremities. Radical synovectomy, nowadays mostly performed arthroscopically, should be done as soon as possible in cases of insufficient immunosuppression to stop joint destruction early. This mostly leads to sufficient pain relief. Synoviorthesis six weeks after synovectomy decreases the recurrence rate of joint effusion significantly. Complete synovectomy should also be performed in arthroplasty, because persisting synovitis may lead to early implant loosening.

Persisting synovitis of the tendon sheathes invades the tendons themselves and should therefore be removed before rupture occurs. Rheumatic tendon tears at the hand and foot show large defects of mostly more than 1 cm of length which need to be reconstructed by tendon-transposition or free tendon grafts. Direct suture is commonly impossible in these cases.

Healing of bone, soft tissues and skin may by prolonged because of the sufficient autoinflammation effects caused by the modern disease modifying antirheumatic drugs (DMARDs). Therefore immobilization and removal of skin sutures should be performed individually, when healing is securely completed to avoid non-union and wound complications respectively.

DISCUSSION AND CONCLUSION:

Rheumatic patients suffer from different symptoms affecting almost all tissues of the body. Therefore therapeutic options must be determined interdisciplinary, including the specialist for orthopedic rheumatology, who should be a well trained generalist in orthopedic surgery. The therapeutic strategy should be highly variable and individual because symptoms may change within short intervals. A lot of pitfalls exist already for surgeons specialized on degenerative joints, therefore a profound knowledge of rheumatic diseases is needed for successful therapy in this population.