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Hand surgery in Spain

Early period of hand surgery in Spain

At the beginning of the twentieth century, most surgical procedures related to the hand, mainly infection, debridement and amputation, were done by general surgeons. In the Civil War in Spain (1936–1939), many such patients were treated. In the early 1950s, the only information regarding hand surgery came from France, specifically from Marc Iselin, who had published a book '*Chirurgie De La Main*' and '*Livre Du Chirurgien*' in 1945. These books helped Spanish surgeons with a special interest in hand surgery and who were more familiar with the French language than with English (LLuch-Homedes, 2008).

In 1947, plastic surgeon Jaime Planas Guasch went to San Francisco, CA, to improve his knowledge in hand surgery. He was the first Spanish fellow in hand surgery in the United States, training under Sterling Bunnell. In 1951, Planas was responsible for the translation into Spanish of Sterling Bunnell's '*Surgery of the Hand*' (2nd Edition). This Spanish version would change the future of hand surgery in Spain and in the Ibero-American countries. After that, Planas became one of the founders of the hand surgery society in Spain in 1969 (Garcia-Elias, 2016).

The Spanish Society for Surgery of the Hand

In February 1969, the first meeting of surgeons with a special interest in hand surgery was held in Zaragoza, thanks to Alfredo Quintana's initiative and the collaboration of Drs Pulvertaft, Vainio, Tubiana and Souquet as guest professors. A few months later, the Spanish Society for Surgery of the Hand (SECMA) was founded with 29 members under the leadership of the first president Dr Enriquez de Salamanca (Quintana-Montero, 1997). At present, SECMA has a total of 380 members: 310 full, 19 associate, 25 international and 26 honour members. SECMA holds its national meeting every 2 years. At each meeting a new board is elected, which has 2 years to develop its projects.

Training of hand surgeons

In 2014, the SECMA Foundation was established with the purpose of sponsoring instructional courses, the best scientific paper and poster awards at the national meeting, the travelling fellowship award and all those activities related to research and teaching in hand surgery. That project was started in 2011 by Fernando Garcia de Lucas and continued by Miguel del Cerro. Both are past presidents of the SECMA.

Thanks to the SECMA Foundation, the SECMA offers a 2-day instructional course every year, with lectures and lab cadaver sessions for young orthopaedic and plastic surgeons. The SECMA Foundation sponsors an annual instructional course on clinical research methodology applied to hand surgery, which is free for residents, fellows and members of SECMA. The 1-day course, taught by Roberto S. Rosales since 2012, approaches the clinical design, level of evidence, the use of patient-reported outcome instruments and statistics software.

In Spain there are other fellowships for training in hand surgery, such as the Kaplan Institute Fellowship, as well as different universities offering a master degree in hand surgery. There are programmes of 'Master & Fellowship in Hand Surgery, Universitat de Barcelona'; 'Master's Degree in Surgery of the Hand and Upper Limb, Universitat Autonoma Barcelona'; and 'Master in Hand Surgery. Universidad Internacional de Andalucía'.

The training programme for surgery of the hand is officially covered by two specialties: orthopaedics and traumatology surgery, as well as plastic and reconstructive surgery. The programme in orthopaedics and traumatology surgery is 5 years long, of which 3 months are dedicated to hand surgery training, with focuses on fractures, tendon lacerations, nerve compression, tendinitis, wrist pathology, tenosynovitis and infections. The residents are also expected to be involved in cases of Dupuytren disease, compartment syndrome, joint and ligaments injuries, fracture non-unions and rheumatoid arthritis. All these include adult and paediatric patients. Microsurgical training is

not required. Residents are encouraged to take at least a 2-month rotation in plastic and reconstructive surgery to engage in skin and soft tissue injuries and burns. Every year, 230 to 250 residents enter such training programmes.

The training programme in plastic and reconstructive surgery is 5 years long, including 3 months of hand surgery. Such a programme is focused on embryology of the hand, congenital defects of the upper extremity, tumours, trauma, infection, tendon and nerve injuries, replantation, Dupuytren's contracture, rheumatoid disease and nerve palsy. In the course of their training, the residents are expected to gain competence in wound stabilization and reconstruction. The development of microsurgical skills is included in the programme. The residents usually have a 2-month rotation in the orthopaedic and traumatology departments, mostly focusing on the treatment of fractures, tumours and infections. Every year, between 32 and 38 residents enter such training in plastic and reconstructive surgery.

Hand surgery is not recognized as a specialty or sub-specialty in Spain. The regulation of health science specialties in Spain establishes that health care professionals can only use their official title. Therefore, orthopaedic or plastic surgeons cannot announce themselves as hand surgeons. Indeed, it is not even recognized by the administration of clinics in hand surgery. Therefore, hand surgery centres can only start up as part of orthopaedic or plastic surgery departments or units.

In Spain, the Federation of European Societies for Surgery of the Hand (FESSH) Diploma in Hand Surgery is not recognized except for its hours of courses, which can be exchanged via the European Credit Transfer and Accumulation System. To date, the National Health System in Spain has not established that patients with hand disorders should be treated by a sub-specialty group of hand surgeons. Therefore, specific hand surgery jobs are not offered in the public health system. In Spain, those surgeons interested in this field have to undergo advanced training on their own, usually by certification from organizations such as FESSH, or by international or national fellowships.

In 1973, *Revista Española de Cirugía de la Mano* (The Spanish Journal of Hand Surgery) was founded. In 1988, the journal changed its name to *Revista Iberoamericana de Cirugía de Mano* (RICMA) (The Ibero-American Journal of Hand Surgery) with the purpose of integrating other Ibero-American societies. In 2013, RICMA began a new editorial stage and has achieved great improvement. It is a double-blind, peer-review journal and two issues are published annually. Each issue has a fixed structure and consists of one editorial, five original articles, two clinical cases, two update articles and one surgical technique paper.

Since 2017, the journal is published by Thieme and not only accepts manuscripts written in Spanish and Portuguese, but also in English. Nowadays, the scientific societies affiliated to the journal are from Argentina, Brazil, Portugal, Venezuela, Chile, Mexico, Colombia and Peru. RICMA is an open access journal and will continue to represent the hand surgery in the Ibero-American world and to show the high scientific and technical level of all our affiliate societies.

Current practice

Before 2013, one of the most important problems of hand surgery in Spain was the absence of hand trauma centres certified by FESSH. Thanks to the efforts of Marcos Sanmartin, the Hand Trauma Committee of FESSH has accredited seven centres in Spain in the past 5 years. These hospitals are Hospital de la Santa Creu i Sant Pau and Sabadell Hospital, both in Barcelona; Hospital Universitario HM Monteprincipe and Majadahonda Fremap Hospital, both in Madrid; Complexo Hospitalario Universitario A Coruña in La Coruña; Hospital Intermutual de Levante in Valencia; and Hospital Povisa in Vigo.

In the last few years, Spanish hand surgeons have substantially contributed to the development and expansion of wrist arthroscopy techniques. Francisco Piñal developed dry arthroscopy and has written extensively on arthrodesis, distal radius fractures and ligament repair of the wrists. Pedro Delgado has published his techniques of arthroscopic repair of unstable scaphoid non-union. Fernando Corella, Montserrat Ocampos and Miguel del Cerro developed an arthroscopic ligamentoplasty technique for scapholunate instability, a new volar portal called the volar central portal, an arthroscopic technique for proximal row carpectomy, the '3D test' for scapholunate instability and the 'rocking chair sign' for a floating lunate. Vicente Carratala and Francisco Lucas published an arthroscopic technique for the foveal reattachment of the triangular fibrocartilage complex, an arthroscopic capsuloligamentous suture for the scapholunate ligament and an arthroscopic ligamentoplasty for distal radioulnar joint instability. Joaquin Casañas and Cristobal Martinez published an arthroscopic technique for the resection of the scaphoid distal pole for scaphotrapeziotrapezoidal osteoarthritis and a technique for the arthroscopic fixation of a scaphoid fracture. Finally, Mireia Esplugas has published a paper about the safety of

the 6 radial portal. These working groups organize more than six wrist arthroscopic courses annually, which are helping to implement and improve wrist arthroscopy throughout the Spanish territory.

The Spanish government has adhered to the European Council statements on vascularized composite tissue allografts. There are currently three programmes approved for allogeneic hand transplantation in Spain: Valencia, Oviedo and Madrid. Allogeneic hand reconstruction is offered to bilateral hand amputees. To date, five patients have received hand or arm allografts in Spain. All of the cases received special attention and evaluation by an ethics committee. At least four of the patients have experienced side effects from chronic immunosuppression, including kidney function impairment, but none of them have had their allografts removed or required haemodialysis. All patients have shown episodes of acute rejection that required additional immunosuppression courses. Allogeneic reconstruction of the hand still remains a procedure with notable risks.

Research activities

The Kaplan Institute in biomechanics of the wrist, under the direction of Marc Garcia-Elias, works extensively on wrist biomechanics, and the work from this institute has remarkably promoted our understanding of wrist biomechanics. The research work developed by Manel LLusa and Jose Ballesteros have focused on flexor tendon biomechanics at the Department of Anatomy of Universidad de Barcelona. The PhD programme in clinical research and outcomes instruments in hand surgery at the Unit for Hand and Micro Surgery (abbreviated as GECOT in Spanish) is under the direction of Roberto S. Rosales, with the collaboration of the University Hospital of La Candelaria in Universidad de La Laguna and Isam Atroshi. The programme has developed the cross-cultural adaptation of most used outcome instruments in hand surgery as the Spanish versions of the full length and Quick Disabilities of the Arm, Shoulder, and Hand, the Patient Rated Wrist Evaluation, the carpal tunnel syndrome-Levine questionnaire, and the carpal tunnel syndrome-6. Martin Ferrero at the University of Valladolid has directed research in nerve regeneration, carpometacarpal joint osteoarthritis and distal radius fracture.

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