



## Development of the Seminar

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### ABSTRACT

The current issue of REUMATOLOGÍA CLÍNICA is devoted to the method of teaching clinical anatomy as it applies to rheumatology. This method was developed as a response to a perceived need. It is our belief that rheumatologists are at present insufficiently trained in clinical anatomy. As a result, our diagnostic skills may fall short of their potential. Recent rheumatologic literature shows a vertiginous growth of musculoskeletal ultrasonography. In contrast to ultrasound, however, skilled, anatomy-based inspection and palpation can be mastered by all and applied in the care of all patients. It is our hope that clinical musculoskeletal anatomy will one day be a basic component in rheumatology training programs.

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### Desarrollo del seminario

#### R E S U M E N

Este número de REUMATOLOGÍA CLÍNICA se dedica a la difusión de un método de enseñanza de la anatomía clínica para reumatólogos. No se trata de una propuesta sino más bien de una respuesta a una carencia que percibimos, a través de muchos años y hasta el presente, en reumatólogos de distintos países y continentes. La ultrasonografía musculoesquelética, a pesar de su extraordinaria importancia y creciente difusión, impactará poco en esta carencia. Es más, a menos que hagamos un esfuerzo consciente de educación puede llegar a agravarla por atrofia por desuso de nuestros músculos clínicos.

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Our seminar has been developed over decades and represents the evolution of regular case discussions into case-centered anatomical demonstrations. These have as the main ingredient the cross-physical examination of participants and instructors. As a result, our clinical anatomy seminars are participative rather than theoretical and differ from the traditional teaching of anatomy as taught in lectures, books, the dissection room or the computer screen, all of which may enhance the worth of the seminar but none of which can replace it.

Almost four decades ago one of us (JJC), perhaps influenced by his 2-year anatomy assistantship while in medical school followed by unique conducive conditions found at his new workplace (the Boston Veterans Administration Medical Center), became involved in studies of bursae and tendons. This interest, sparse at the time, must have caused curiosity as he was invited to give Meet the Professor sessions on regional pain syndromes at the annual meetings

of the American College of Rheumatology (ACR). These sessions were held twice each meeting in 3-year cycles, where Dr. Joseph Biundo from New Orleans who is an expert in both rheumatology and rehabilitation medicine was the alternate speaker. The interest of the attendants, of which approximately 2/3 were rheumatologists in practice and 1/3 fellows from around the world, was as obvious as was their unfamiliarity with the regional anatomy being discussed.<sup>1</sup>

With this ever more clear perception becoming an obsession JJC invited a former fellow (RAK) who had developed skills in rheumatology education to team up with him hoping to move beyond the regional pain syndromes and enter the uncharted field of rheumatologic clinical anatomy. The question was how to do it? Memories of the dissection room, the research on bursae and tendons, the popular sessions at the ACR and medical education skills, all in combination, suddenly delivered the answer. Cases such as those previously used at the ACR Meet the Professor sessions on regional pain syndromes would be used as a springboard to teach regional anatomy of the musculoskeletal system. And once immersed into the regional anatomy accessible relevant structures

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would be explored in the instructors' and participants' bodies. For two summers we practiced this format with the help of fellows from the Boston programs and once we felt prepared we proposed the seminar to the ACR program committee.

### At the ACR

Our first presentation was at the San Diego meeting in 2005. There were two 2-hour workshops titled "Anatomical basis of rheumatologic examination. Part 1 (upper extremity and cervical spine) and Part 2 (lumbar spine and lower extremity). They were well received and have since been given yearly to the present. Two years ago JJC was replaced by Pablo Villaseñor-Ovies, coordinator of the Mexican Group of Clinical Anatomy (GMAC), and he and 4 additional GMAC members now serve as demonstration subjects. There has been some reluctance at the ACR, theirs and ours, to name these seminars as they should: rheumatologic clinical anatomy. But this may soon change.

### In Mexico

In parallel with our ACR activities GMAC was created in Mexico 4 years ago, became a recognized activity of the Mexican College of Rheumatology in 2009, and from its inception has acquired a surprising momentum in Mexico and beyond. GMAC was born as a response to a clear need. In 2007 JJC gave 7 clinical anatomy seminars for all rheumatology fellows in Mexico, 6 in Mexico City and 1 in Guadalajara. The duration of these seminars was 7 hours. Each seminar was preceded by a one-to-one, 20-question practical anatomy examination put together by JJC and reviewed by RAK who made corrections and generally found it "too easy". The results of this examination, which were not reported individually to the participants or the department heads, were dismal. Concerned by this deficit two of the current GMAC instructors, José Eduardo Navarro-Zarza and Pablo Villaseñor-Ovies, who were among the examined fellows, pressed JJC to start a training course in Mexico. This was done and we had 4-hour training sessions every Saturday morning during 2009–2011. At present similar sessions take place about twice monthly. In February 2011 a 161-question practical examination, administered by RAK, was used to self-certify the members of our growing group.

### Content of the Seminars

Our seminars predominantly deal with regional limb anatomy. Discussed cases, as will be shown in this volume of *REUMATOLOGÍA CLÍNICA*, could be familiar conditions such as a trigger finger or a rheumatoid tenosynovitis, or uncommon but nevertheless important in differential diagnoses such as an axillary nerve neuropathy masquerading as a rotator cuff tendinopathy or a tibial nerve neuroma in the medial retromalleolar space masquerading as a Morton's neuroma. These cases emphasize an important concept: rheumatologists should not only be internists with a special interest in the musculoskeletal system but also in the nervous system and the vascular system. The chapter arrangement in this volume follows the actual sequence used in our workshops. It begins in the hand and ends in the foot. Emphasis is placed on the soft tissues rather than in the joints. Skin creases, the superficial and deep fascia, specialized dense connective tissues such as pulleys, muscles, tendons, ligaments and bursae receive most of the attention. Neuropathies and ischemic processes that are known to mimic musculoskeletal conditions are interspersed here and there. Injection techniques are not a main subject in our workshop. However, procedures are discussed to emphasize the practical importance of knowing anatomy and as a tactic to maintain the participant's

interest. We shy away from a deep discussion of the presented cases and in particular, the discussion of therapies. Our business is clinical anatomy. We dislike time limitations and prefer, if possible, workshops that extend over 7–8 hours with minor breaks for a sandwich or coffee, or even several days like the one we had in Montevideo, Uruguay, under the joint sponsorship of the "Sociedad Uruguaya de Reumatología" and the "Universidad de la República". Five members of our group and the majority of rheumatologists of Uruguay attended this seminar. Our incursions in spine anatomy have been sparse and we prefer leaving the bulk of this area to people better qualified than us. It is our hope that rheumatologists with special knowledge in spinal conditions will address this challenge.

### Nothing Static About Clinical Anatomy

Skills are being constantly perfected and original observations are often made. This is because we view anatomy with the eye of the clinician. As recent examples we are able to recognize by palpation the insertional tendon of the 1st dorsal interosseous and in doing so, understand the flexor action of this muscle on the metacarpophalangeal joint; we learned to identify the extensor lamina and in this way appreciate the lateral band displacement that occurs during proximal interphalangeal joint flexion; we learned to identify the intersection site in the dorsal forearm where the tendons from the 1st dorsal tunnel cross the underlying tendons of the 2nd dorsal tunnel; and we learned to palpate the coracohumeral ligament in normals and feel its swelling in early frozen shoulder. What a pleasure it is to be able to understand musculoskeletal pathophysiology at the level of orthopedic surgeons, MRI radiologists, and ultrasonography-enabled rheumatologists! And all of this by using our unaided sight and touch!

### Spread of the Seminars (Table 1)

Since 2009 clinical anatomy seminars were given several times in Mexico, in 7 Latin American countries and now in Spain and the USA.<sup>2</sup> Most of these seminars were preceded by a practical anatomy examination with results quite similar to those of the Mexican fellows' in 2007. The questions are worded according to the anatomical nomenclature used at a given site. We have been amazed that the old nomenclature, which precedes the *Nomina Anatomica* and the more recent *Terminologia Anatomica*, is still in use in about 50% of sites we visited and even at a given site it may be used by the older participants while the younger ones learned anatomy according to the *Nomina*. One of the papers in this issue of *Reumatología Clínica* addresses this issue. A heavy seminars program is ongoing in 2012 including 6 in Latin America (3 in Argentina, 2 in Brazil, 1 in Guatemala), plus 1 in Spain and 1 in the USA at an academic center. The most extraordinary seminar was the one in Manaus, Brazil, at the Federal University of Amazonas, with an exterior temperature of 37 °C and high humidity! The ACR workshops, having a total duration of 4 hours and without a complete overlap of attendees between the 1st and 2nd halves, necessitate modification of the usual seminar length and goals and in essence provide attendees a sampling of the whole. Currently there are 7 Mexican GMAC instructors including JJC. RAK is an ad-hoc instructor when the seminar is given in English such as the one we gave in Cancun in February 2011 for the Canadian rheumatology fellows, the one in the USA, and the ACR workshops.

### Additional Educational Activities

In addition to the seminars GMAC is involved in educational activities together with the Mexican School of Ultrasonography, which in Mexico has a legal standing under the aegis of the

**Table 1**  
Clinical Anatomy Seminars Given by GMAC Members by Country and by Year.

	2009	2010	2011	2012
Argentina			2	3
Brazil			1	2
Chile			1	
Ecuador		1		
El Salvador		1		
Guatemala				1
Mexico	1	1	2	
Spain				1
Uruguay		1		
USA <sup>a</sup>				1
Total seminars per year	1	4	6	8

<sup>a</sup> Plus 2 two-hour sessions at each ACR National Meeting since 2005 to the present.

Mexican College of Rheumatology, and the department of Anatomy of the National University of Mexico (UNAM). We have had 3 combined sessions of lectures, dissection, US in fresh cadavers and blind and guided procedures in fresh cadavers. One was devoted to the hand, other to the shoulder and the third to peripheral nerves. These sessions have been very fruitful for the 3 parties involved.

### When Should Clinical Musculoskeletal Anatomy be Taught?

We believe that an intensive clinical anatomy course should be an integral part of rheumatology fellows training. This instruction would be ideal at the beginning of training and would take about a week. The teaching could be provided by arrangement through the local rheumatism society, university or rheumatology board. However, one of GMAC's goals is that every rheumatology training program in Mexico has its own clinical anatomist on board. This can be achieved without a drain of resources by the training of current staff irrespective of this person's interests.

### Who is Fit to Become an Instructor in Rheumatologic Clinical Anatomy?

We would like to submit that every academic rheumatologist would benefit from becoming a clinical anatomist. His or her skills in physical examination would be enhanced and so the quality of their clinical teaching. Those who had training in ultrasonography should try it too. Ultrasonography is often learned through the probe and regional examination usually begins after a landmark has been identified, i.e. the coracoid in shoulder examinations. But the coracoid is readily palpable. This brings the issue of reliability. Is a landmark more reliably identified when looked at the screen or when seen or touched? The answer is obvious: our bare senses are best to identify what can be seen or touched. However, US is best where our senses fall short. This is why every rheumatologist, including our ultrasonographer colleagues, would benefit from having training in clinical anatomy. Our group may serve as an example. At GMAC, of 8 current instructors all are rheumatologists; of these, 3 are interested in autoimmune disease and one of them,

in addition, is an ultrasonographer; 1 is head of an US department; 2 are general rheumatologists and 1 of them is a US trainee; 1 is interested in spondyloarthropathies and 1 is a general rheumatologist with a particular interest on rheumatology education.

### Research

An important activity of GMAC is research. Two large projects are underway and partial results have been presented at the 2011 ACR Meeting. One is an analysis of the pre-seminar examinations. Early results have shown that we rheumatologists know the least about anatomical structures that we should know the most, i.e. the hand and the shoulder. The second study is a multinational Delphi analysis of the anatomical items that rheumatologists should know as a component of a proficient practice in rheumatology. Several additional studies are in earlier stages.

### Financing the Program

An ILAR grant allowed us to visit 5 Latin American countries in 2010 and purchase needed equipment such as a camera and a projector for displaying the didactic slides. We would pay the plane tickets off this grant and modest lodging and meals would be provided by the local rheumatism societies. No honoraria were charged during, before, or after that 1-year support. More recently we have been traveling by invitation of local societies. Industry will finance the upcoming workshop in Spain. Given the opportunity, additional industry support will be welcomed. However we understand that the very nature of our endeavor, which insulates us from ethical problems, at the same time makes us unappealing to potential sponsors. Definitely, business class tickets and 5 star hotels are not a priority to clinical anatomists. Our reward is that exhilarating feeling that emanates from our instructors-participants interaction. In addition, there is a sense of discovery in being able to identify parts of the musculoskeletal system that previously were just names and abstract concepts. For us, the instructors, there is a distinct feeling that we are addressing a real need in our profession. Last but not the least, we are quite aware that we are contributing to restore humanism to medicine. Patients feel reassured and even delighted when they are subjected to a skillful examination and sense a purpose in each palpation and in every motion the rheumatologist evaluates. This is the greatest ultimate reward we seek for our anatomical adventures.

### Conflict of Interest

The authors declare no conflict of interest.

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