

## SECEC European-Japanese travelling fellowship 2008

Diary of a great experience of life

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While the report below describes our fellowship in detail and from a more or less serious point of view, we obviously also had a very good time. For those of you who want to have a feel for the great time we had, we add the powerpointpresentation we made at the SECEC. Again, we apologize in advance to all of our wonderful Japanese host for not being able to include them all in our picture show. Nevertheless, we are extremely grateful to them for the opportunity they gave us and the hospitality we received.

Our SECEC European-Japanese travelling fellowship began October 7<sup>th</sup>, 2007, when we arrived at Tokyo Narita airport. When we arrived, dr Osawa and dr Yamamoto of the Orthopaedic Unit of Gumma University in Maebashi were already waiting for us. Their extremely kind and warm welcome immediately had a great impact on us. Time and time again during our month-long stay in Japan we were impressed with the way how the Japanese really pamper their guests.

The trip to Maebashi was to be one out of only two bus rides for the entire sojourn. Otherwise, transportation was by bullet-train or by airplane. Fortunately so, as the distances and the speed-limit of 90 kph would have been tedious.

Because October 8<sup>th</sup> was a sport holiday in Japan and because our hosts thought we might be suffering from jetlag, we spend our first morning in Japan exploring a typical Japanese pastime - a game arcade - and had our first contact with Japanese food. In many restaurants, the choice of food is on display at the entrance in the form of plastic models, even of the beverages. In the afternoon we met the host for this leg of our journey, prof Takagishi, chairman of orthopaedics at Gumma University and Japanese editor for the JSES. A scientific session with the orthopaedic staff allowed us to give our first of many lectures. (A full list of the different lectures that the two of us presented during our stay in Japan is at the end of this text.) This was followed by the first of many welcome receptions. Even those that had difficulty expressing themselves in English made every effort to try and have some words with us. The legendary Japanese affinity for electronics was illustrated by the omnipresent translating mini-computer.

October 9<sup>th</sup> apparently was destined to be another day recuperating from jetlag with a sightseeing programme to the Mt Shirane caldera and the Shitatsu onsen (hot springs). Unfortunately, the public onsen was closed and it was impossible to take a bath. At noon, we were pleasantly surprised by the Japanese enthusiasm for Italian food, pasta and pizza. Even Raffaele had to admit that the quality of the pasta was quite good. In the afternoon we went to the Gumma University to

listen to some lectures of our Japanese colleagues. Particularly, we had quite a lively discussion about ALPSA and Bankart lesions as one of their studies seemed to indicate that all the patients with an ALPSA lesion had the same configuration of capsulolabral insertion (medial to the glenoid), even in their uninjured side. If the normal attachment of the labrum in ALPSA-lesions appears to be medial to the glenoid, should we then not repair these patterns of lesion medially instead of to the glenoid rim? Another very interesting talk concerned the cause of pain in patients with a rotator cuff tear. A study still in progress tries to elucidate the cause of pain, excluding that of inflammatory origin, present at the onset of a rotator cuff tear. Different aspects of patients and lesions themselves were investigated and seem that pain can be related to the progression of supraspinatus tear posteriorly towards the infraspinatus or anteriorly towards the subscapularis tendon. The day was closed in a Japanese diner.

October 10<sup>th</sup> we were able to visit the hypermodern OR, where the first surgery was an arthroscopic rotator cuff repair. This allowed a broad discussion on the methods of repair: single row versus double row, the utmost importance of recognising the pattern of lesion, especially with a larger tear. The consensus was that not all tears can and need to be repaired with a double row technique, but that the surgeon should be able to understand the pattern of lesion and adapt the technique of repair to the pattern of the tear. Prof Takagishi subsequently performed an open surgery consisting in an osteosuture for a non union of a fracture of the medial third of the clavicle. Our discussion was continued in a typical tempura restaurant where the cook prepared the tempura with fish or vegetables in front of the guests. It also was our first occasion to taste an excellent Japanese sake.

A shinkansen (bullet train) took us from Maebashi to Utsunomiya in a display of Japanese efficiency. Arrival and departure of these high speed trains are timed to the minute (almost second) and almost to the millimetre on the platforms. Although our Japanese was not good enough to be able to follow any of the presentation, we had a nice exchange on a social level at the of the Japanese Shoulder Society which is the oldest shoulder society in the world. Here, we met three almost mythical godfathers of Japanese shoulder surgery: Takagishi senior, Fukuda and Nobuhara.

Another bullet train brought us to Kyoto and Osaka, where Dr Yoneda and his team formed another group of extremely hospitable people. In Kyoto and Nara, we were introduced to the old Japanese culture. With an overnight stay in a traditional Japanese guesthouse in Kyoto, a visit to several ancient temples and shrines in Kyoto and Nara as well as a sampler show in one of the famous geisha schools in Kyoto, we got a taste - also from a culinary point of view - of historic and traditional Japan. The temple complexes with for example the enormous golden Buddha in Nara were impressively exciting. Subsequently, Dr Yoneda demonstrated his DAFF technique for an arthroscopic capsulolabral repair which serves to improve the anteromedial footprint of the capsule on the glenoid neck and rim. As anchors of the Push-Lok variety are currently not available in Japan, some surgeons are very creative for their double-row repairs. Dr Yoneda uses a lupin lasso anchor to tie the suture limbs down. Members of the staff presented some lectures

as did we. A very interesting talk was related to a prospective study to evaluate tendon healing after a double row repair. Starting from the idea that there is tendon delamination in case of rotator cuff tear, a double row repair addressing the two layers (superficial and deep part) separately was done. At 1 year of follow up, more than 50% of the deep part repairs showed a re-tear. This finding is very helpful to understand that too much tension is placed when attaching the deep part (articular part) of cuff to the footprint during a double row-repair and that this may be the reason we observe so many re-tears. The demo of the CAD 2D and 3D simulation of knee shoulder kinematics on the basis of radiological imaging by prof Sugamoto was quite amazing. Our discussion was continued until late at night accompanied by some excellent Italian wines during a dinner in a splendid Italian restaurant in Osaka city.

October 16<sup>th</sup> we went to the Nobuhara hospital. This private, exclusively orthopaedic hospital has 100 beds for surgery and rehab. We were surprised to learn that patients not only undergo open surgery here, but stay on for rehab for the first 5-6 weeks after surgery. The centre is very famous in Japan, not only for the prof Nobuhara himself - one of the shoulder pioneers - but also for its excellent biomechanics laboratory where many (baseball) athletes with shoulder problems are evaluated. Prof Nobuhara believes that elevation and abduction form the problem after rotator cuff surgery, while adduction is aided by gravity. Therefore, patients are immobilised for 4 weeks with the arm over the head - in traction while in bed or on a modified baseball cap when walking around - to reduce the stress on the repair. We got a tour of the biomechanical lab and the engineers detailed the program used to analyse the sports specific movements. Raffaele was dressed up in a motion analysis suit to have his football kick analysed. During the short time spend with prof Nobuhara we had the opportunity to discuss about the pathology of the rotator interval, where he was one of the first to recognise its importance. In particular, one of his theories is that shoulder pain often is related to the contracture of the subscapular recess. Prof Nobuhara showed us a great number of patients in whom their shoulder pain disappeared when the pressure of an intra-articular injection with contrast medium and lidocaine under fluoroscopic control, opens up the subscapular recess.

After our brief stop in Nobuhara hospital, another wonderful shinkansen brought us to Fukuoka, the city that never sleeps. In Fukuoka we were hosted by prof Shibata, the secretary of the Japan Shoulder Society. Here we saw another example of creativity with the use of a knotless anchor laterally for "surface holding" in a double row repair with a classic anchor medially. In a baseball's athlete with an "overhead shoulder" and posterosuperior impingement, Nicole's EUA added the suspicion of laxity of the middle glenohumeral ligament to the diagnosis of GIRD with a reduction of internal rotation. This was confirmed during arthroscopy and the patient underwent a release of the posterior capsule and tensioning of the MGHL. In the afternoon, prof Shibata offered us a tour of Fukuoka centre with a walk through the park, a Zen garden and the local art museum.

The next day started with an early morning clinical conference with about 35 staff members, followed by an outpatient shoulder clinic with prof Shibata. In between, we were able to observe a brachial plexus neurography in a patient with a thoracic outlet syndrome. Injection of contrast medium around the plexus allows the visualisation of the site of entrapment during abduction and external rotation under fluoroscopic control. We were surprised to discover that, here, the orthopaedic surgeons perform the intraarticular injection for an arthroCT. In the afternoon, we presented our lectures during a scientific conference hosted by prof Shibata and prof Naito. This allowed for a lively discussion about the posterior part of the superior glenohumeral ligament, its footprint on the humeral head and its relationship with the rotator cuff footprint. During this leg of our trip, Italian food and Japanese sushi were alternated.

An early morning shinkansen took us to Kumamoto on October 20<sup>th</sup>. In the morning, prof Junji Ide, our host for the weekend, gave us a guided tour of Kumamoto with its impressive and beautiful castle. Lunch was in an Italian restaurant that actually served excellent Japanese-French fusion food. In the afternoon, the Kumamoto shoulder conference organized by prof Ide brought on a discussion about the necessity to evaluate intraoperatively the thickness of a rotator cuff, particularly in the case of a partial articular-sided tear. As the footprint is variable among people, the depth of footprint involved cannot represent a real estimation of the percentage of rotator cuff tear. Prof Ide showed that good results can be obtained with an arthroscopic subscapularis repair when the tear is treated within 6 months from injury. On Sunday, we started very early for a trip to the Mount Aso national park area with prof Ide and dr Kataoka. The volcano is one of the most famous in Japan and sports an enormous caldera of 18 km diameter! Unfortunately, the wind was blowing from the wrong direction so that the risk of toxic fumes prohibited us from a visit to the crater. The evening and night were spent in a traditional Japanese Onsen resort, where we were able to relax in the hot springs and have a superb dinner dressed in Japanese style.

Most of Monday the 22<sup>nd</sup> was spent travelling: two hours back to Kumamoto, two hours bus to Fukuoka, then a flight to Sendai and finally a train to Sendai centre. Here, we were hosted by prof Itoi at the Tohoku university hospital. In the evening, prof Itoi invited us to a typical Japanese restaurant for dinner with the visit of a mountain ghost and a lot of fun. The next morning, prof Itoi had prepared very interesting cases for his shoulder consultation. In particular, we remember the discussion about the surgical options to treat a very young patient with severe scapular dyskinesia after failure of Eden-Lange procedure. In the afternoon, we were given a tour of the animal laboratory of university, followed by a research seminar with Itoi's research fellows who presented their current work. For example, one of the fellows is working on the creation of an animal model of frozen shoulder. In the evening, there was a shoulder conference with the entire orthopaedic staff followed by a lot of laughs and fun at another Japanese restaurant.

October 25<sup>th</sup> was a day for swimming (Nicole) or shopping (Raffaele) followed by sightseeing accompanied by drs Mineta and Kanno. First, we had a look at the site of Sendai castle, which is no longer standing, and then we drove to Yamadera. This is an extraordinary site of cultural heritage with temples built against a mountain wall. 1100 steps took us to the highest point with a

marvellous view over the countryside and the surrounding mountains. In the evening, we were welcomed by dr. Mura, a shoulder surgeon, and the staff of the Orthopaedic unit of the hospital of Yamagata. Another round of our lectures was followed by a little welcome party in the hospital itself. Due to the national anaesthesiologists' congress, dr Mura was only allowed to do one surgery: an arthroscopic Bankart repair using knotless anchors. After lunch, we moved on to Hirosaki. Dr Tsuruta, a surgeon from Sendai, accompanied us on the train to Sendai, made sure we got on the right follow-up train to Hachinohe, where we were picked up by dr Sato, who accompanied us to Hirosaki. The local orthopaedic team of mainly young and enthusiastic surgeons first gave us a tour of the Sports traumatology unit of Hirosaki university, as all surgery was barred due to the above-mentioned congress, and then took us sightseeing in Hirosaki. There was a flower exposition with sculptures in the castle park, which is famous for its yearly cherry blossom festival.

In the evening, we met the entire staff during another formal shoulder conference where we were able to discuss surgical options for proximal humerus fractures as well as a non-prosthetic treatment option for glenohumeral arthritis. The next day, dr Sato and prof Tsuda drove us around to have a look at the mountains surrounding Hirosaki city, where the leaves had just started colouring the beautiful autumn red and orange. We also visited the Kokeshi – Japanese wooden doll – factory and museum and were duly impressed by the size of the apples from this region. In Hirosaki, dinner was concluded in a sakaneria on the first evening and in a music bar the second. There we were able to enjoy a concert by two women on a tsugaru shamisen – one of the versions of a three stringed Japanese Lute made from dog skin.

Sunday October 28<sup>th</sup>, we flew to Sapporo for the last week of our fellowship. , where we arrived in the afternoon. Dr Ooizumi picked us up at the airport and then, after a brief stop at our hotel, brought us to the museum of the Olympic winter games of Sapporo 1972. the view from the ski jump tower was splendid and the simulation of a ski jump was big fun. The museum hosted some other interactive simulation of typical sports as well.

October 29<sup>th</sup>, we met prof Fukuda, who's surgical case was cancelled, but who presented some interesting clinical cases. One of these was the failure of minimal surgery for a distal clavicular fracture with K-wires, in an orthopaedic fellow at his own request, followed by uneventful healing after secondary osteosynthesis with a hook-plate. Furthermore we had an interesting discussion about the surgical treatment of rotator cuff tear. In fact, prof Fukuda and his disciples have excellent results at a long follow-up time after exclusively open rotator cuff repair, sometimes with acromial osteotomy. They never do an arthroscopic rotator cuff repair. After that we had the opportunity to visit the beautiful and well organized university of Hokkaido. In the evening we had dinner in a very nice Italian restaurant, where Dr Suenaga presented the clinical cases to undergo shoulder surgery the next day.

Early in the morning, we first gave two lectures and then went to the OR. The first case was a massive rotator cuff tear with arthropathy treated with an anatomical shoulder prosthesis

associated with a cuff repair. As Japanese people have on average smaller bones, prostheses need to be adapted for the Japanese market and dr Suenaga uses his own prosthesis. Then a diagnostic arthroscopy was followed by a relatively tight open capsular shift for instability. Dr Suenaga is a firm believer in open repair as he has only 1% of recurrence in his 200 open cases (2 cases), whereas he has 4% recurrence in 20 cases of arthroscopic surgery (1 case)! The third patient had a massive rotator cuff tear without arthropathy. Here, a transosseous repair at the level of the border of the tear in a trough in the cartilage – not at the footprint – without traction is the method of choice. Wednesday 31<sup>st</sup> saw in the OR in a private clinic from midmorning to late in the evening. Another rotator cuff tear was treated with a prosthesis, but reaming provoked a periprosthetic fracture distally. A diaphyseal humerusfracture was managed with Suenaga's own humerusnail. And finally, another rotator cuff tear was repaired.

The final two days of our fellowship were spent with prof Okamura and his team at the Sapporo medical college. Once again, surgery was cancelled, this time because the patient's father had just died. Instead, our hosts showed us all their scientific work and several interesting cases in an afternoon session. This was followed by a session with our lectures. The final day was a mixture of surgery, hot curry and sightseeing around a volcanic lake, finished off with a return flight to Tokyo airport. In a double row fixation for a subscapularis and supraspinatus tear, prof Okamura impressed us with his suture management skills and we were able to convince them to 'kill' the dislocating and damaged biceps.

Saturday October 3<sup>rd</sup>, we transferred by bus from Haneda airport to Narita airport where we had to say goodbye.

It was a wonderful experience for the both of us with a great mix of scientific and clinical exchange, served with a sauce of culture, nature and not in the least social contacts that will leave a lasting memory.

Thanks to all our hosts in Japan and thanks to the SECEC for allowing us to have this great opportunity.

List of the lectures given by Raffaele Garofalo

- ✱ The Mason–Allen stitch. A new suture technique for rotator cuff repair.
- ✱ Soft-tissue tenodesis of the biceps tendon.
- ✱ No prosthetic treatment of glenohumeral joint arthritis.
- ✱ Minor Shoulder Instabilities.
- ✱ Predictors of subtle residual shoulder symptoms after transtendon repair of partial articular cuff tear.
- ✱ New Concepts in Shoulder Instability. PHAGL lesion.

List of the lectures given by Nicole Pouliart

- ✱ Folding-unfolding of the anterior shoulder capsule as an indicator of glenohumeral ligament tension: analysis of stable, unstable and frozen shoulders. Maebashi, October 8<sup>th</sup> 2007
- ✱ Shoulder Instability. Experimental Model and Related Anatomy.  
at the 34<sup>th</sup> Annual Conference of the Japan Shoulder Society, October 12<sup>th</sup> 2007, Utsonomiya, Japan
- ✱ Arthroscopic glenohumeral folds and microscopic glenohumeral ligaments: the fasciculus obliquus is the missing link. Osaka, October 15<sup>th</sup> 2007
- ✱ Arthroscopic management of Mason type 2 radial head fractures. Osaka, October 15<sup>th</sup> 2007
- ✱ Why detailed knowledge of the shoulder anatomy is important for surgeons dealing with instability. Fukuoka Shoulder Conference, October 19<sup>th</sup> 2007
- ✱ Description and Clinical Consequences of the Posterosuperior Glenohumeral Ligament – An Unrecognized Part of the Shoulder Capsule. Kumamoto Shoulder Conference, October 20<sup>th</sup> 2007
- ✱ Development of an experimental model for shoulder instability, description and results. Sendai, October 23<sup>rd</sup> 2007
- ✱ Acute acromioclavicular dislocation. Operative treatment options. Sendai, October 23<sup>rd</sup> 2007
- ✱ Surgical treatment of proximal humeral fractures. Results for hemiarthroplasty and osteosynthesis according to an algorithm. Yamagata Shoulder Conference, October 25<sup>th</sup> 2007
- ✱ Shoulderarthroplasty. State of the art 2007. Hirosaki, October 26<sup>th</sup> 2007
- ✱ Sternoclavicular dislocation: review and pictorial essay. Sapporo, October 30<sup>th</sup> 2007
- ✱ Impingement? Differential diagnosis of subacromial pathology and shoulder pain. Sapporo, November 1st 2007