

IUGA International Fellowship Award 2009

Final Report

Award Recipient

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Exact dates of fellowship

March 2nd, 2009 – September, 4th, 2009

Title of research study and all co-investigators

Vagina, abdominal skin, and aponeurosis: do they have similar biomechanical properties?

Investigators: Boris Gabriel, Chrystèle Rubod, Mathias Brieu, Bruno Dedet, Laurent de Landsheere, Vincent Delmas, and Michel Cosson.

List of all ensuing abstracts based on research study. Indicate whether abstracts were submitted to an IUGA annual meeting and their status, or to another meeting and status. A copy of each abstract should be provided, along with proof of presentation (i.e. acceptance letter from IUGA annual meeting).

The results of the research study are intended to be submitted to the IUGA annual meeting 2010 in Toronto. Besides, a second, clinical research study was realized, and the results will

also be submitted to the IUGA annual meeting next year. The status of both abstracts will be communicated to the IUGA Office after submission.

Manuscript based on research study is mandatory. Indicate whether a manuscript has been written, and its status. Provide a copy of the final version of the manuscript and proof of submission, acceptance, or publication. If a manuscript will not be written, please explain.

Manuscripts

1. Vagina, abdominal skin, and aponeurosis: do they have similar biomechanical properties? Boris Gabriel, Chrystèle Rubod, Mathias Brieu, Bruno Dedet, Laurent de Landsheere, Vincent Delmas, Michel Cosson. Submitted IUJ
2. Prolapse surgery in women of 80 years and older using the Prolift™ technique. Boris Gabriel, Chrystèle Rubod, Luis Gordillo Córdova, Jean-Philippe Lucot, Michel Cosson. Submitted IUJ

The first manuscript of the research study is written. It is intended for publication in the IUJ after being presented at the IUGA annual meeting 2010 in Toronto.

The second manuscript, a clinical manuscript, is also planned for submission to the IUJ. The study is a retrospective chart review on a considerable number of total pelvic floor repair procedures in older women over the age of 80 using the Prolift® system. The aim of the study is to comment on feasibility, intraoperative, and early postoperative complications, as well as short-term follow-up results of total mesh repair as one alternative for the treatment of advanced, symptomatic POP in very old patients.

Clinical responsibilities and experiences. Provide details relative to clinical, surgical, or other responsibilities.

The Department of Gynecological Surgery of Pr Cosson exhibits a vast surgical activity in the field of urogynecology. My clinical duties were as follows:

- Daily at 7:30 am: morning round, visit of patients.
- Monday, Tuesday, Thursday and Friday: Operating sessions in the morning until afternoon for POP surgery (e.g. Prolift), vaginal procedures, incontinence surgery (e.g. TVT-O), laparoscopic sacropexies. First assistance and also first surgeon from time to time.
- Mondays, 2:00p.m.: surgery planning including presentation of cases and discussion of indications.
- Wednesday 8:00 am – 1:00 pm: Participation for outpatient clinics with Pr Cosson and also alone under his supervision (preoperative consultation and postoperative

controls). Conservative therapy, indications for surgery, and management of complications. Discussion of cases with Pr Cosson.

- Wednesday and Friday afternoon: Research at the Ecole Centrale de Lille (Biomechanics study). Depending on surgeries and mechanics lab also possible on other afternoons.
- Participation to the perineal multidisciplinary staff meetings with urologists, medical gynecologists, radiologists, gastro enterologists, and physiotherapists on Thursday afternoon/evening with presentation of clinical cases and discussion of the treatment decision.
- Participation to (dynamic) MRI diagnostics (Monday and/or Tuesday evening) at 5 p.m..
- Participation to urodynamics at the urology department and discussion of cases with the urologist on Tuesday afternoons at 3 p.m..
- Wednesday and Friday afternoon: research, literature studies.
- Redaction of retrospective clinical study paper.

Basic Science:

- Biomechanics of pelvic tissues (vaginal tissue, pelvic ligaments, abdominal skin, aponeurosis) in the Ecole Centrale de Lille under the supervision of Pr Mathias Brieu and Pr Cosson. Study of biomechanical properties of these tissues, especially the stress-strain curves before tissue rupture. Comparative analysis of tissues.
- Cadaveric dissections at the anatomical institute in Paris and removal of pelvic tissue samples.
- Training sessions for Prolift procedures on cadavers.

Provide detailed summary of what you have learned related to urogynecology since completing your fellowship and how you plan to apply this knowledge in future.

First, it was a great honor and award for me to work in the team of Pr Cosson for the period of six months. I could significantly improve my knowledge related to urogynecology and also my surgical skills. At the same time, I had the unique opportunity to work in the field of biomechanics in the Ecole Centrale laboratory under the supervision of Pr Brieu, who is a recognized engineer and mechanician. This co-operation between urogynecologists and

basic scientists is very useful and gives one the chance to get a different view on our working field, the pelvic floor.

In detail, some of the new skills I could acquire are:

1. Diagnostics and case discussions: Multidisciplinary view on patient problems and multidisciplinary staff meetings, especially taking into account anorectal function and dynamic MRI diagnostics. I think that I can apply this knowledge in my own hospital and focus now more on anorectal function and treatment of related problems, such as rectal prolapse.
2. Surgical skills: I have assisted a lot of urogynecology surgeries and have done some of them myself. Pr Cosson is a great surgeon and one of the pioneers in this field. So, it was a unique chance for me to operate with him. I have seen very nice and careful dissection of tissues. I learned to use local infiltration (I did not use it before) and to get familiar with the different view on tissues. I learned pelvic floor repair using the Prolift system, which I did not use before. I learned performing insight-out transobturator suburethral sling procedures (before, I only used outside-in procedures). Moreover, I learned a different method of vaginal hysterectomy using only Deschamps instead of clamps, which can be very useful in case of narrow space. I could learn more about a concerted and stepwise morcellation of the uterus. The French "Cosson-Querleu-Dargent-technique" of hysterectomy was an enrichment for my surgical repertoire, and I believe that I will now feel safer when performing difficult vaginal hysterectomies (big uterus, little space etc.) in my own hospital.
Most importantly, I learned how to perform laparoscopic sacropexy. I have assisted a lot of such procedures, and done successively several steps of the operation myself. At the end of the six months period, I was able to perform two sacropexies from the beginning until the end without Pr. Cosson by my side, and this is a great success in my opinion taking into consideration the long learning curve of this procedure. Thus, I have entered now into my own learning curve and I can continue using this technique in my hospital.
3. Basic science: The knowledge of the biomechanical properties of pelvic floor tissues is of outstanding importance when we are trying to create prostheses which are adapted to the local native tissue properties. I will try to continue with this research in close collaboration with the team of Pr. Cosson in Lille. We have planned investigating tissues derived from surgeries in Freiburg in order to better understand the *in vivo* tissue biomechanics. Moreover, an international network in pelvic floor basic research has been established by Pr. Cosson, and researchers will meet at Lille in regular intervals.
4. Last but not least: to improve French language.

Provide summary of the strengths and weaknesses of the fellowship program

Strenghts

- Organized schedule.
- Great quantity of surgical procedures in urogynecology.
- Working with one of the pioneers in this field.
- Opportunity to perform successively some of the procedures oneself depending on level of experience.
- Opportunity for high quality basic research in the Ecole Centrale de Lille in close collaboration with the engineers/mechanicians.
- Existing and established experimental protocol (which saves a lot of time for research).
- Good balance between clinical and scientific work.
- As a member of the team, to participate and assist in all surgery workshops at the department, as well as in operative training sessions on cadavers in Paris (which is otherwise very expensive).
- Prof. Cosson personally takes care that the IUGA fellowship is going well and one's personal goals (which are discussed before starting) are virtually achieved.
- Very kind nurses and staff at the operating theatre.
- Mostly bad weather in Lille (average temperature in July is 17°C), one can concentrate on the work.

Weaknesses/Suggestions

- The fellowship program should be rather for a one-year period instead of six months. This would be of advantage for both, surgical skills and also basic science projects. On the other hand, it would be also of advantage for the whole team, because the fellow will be able to work more and more independently with the time.
- The starting of the fellowship program should be adapted, if possible, to the yearly start of the new French fellows (October), in order to join the staff at the same time. This would facilitate the start and also the acceptance of the new foreign fellows.

Other comments you feel will be relevant to the continuing growth of the IUGA International Fellowship program.

- A presentation of the different fellowship sites at the annual IUGA meeting would be interesting for potential candidates to get more information about the different hospitals, clinical, and research activities.
- Optionally, contact list of Fellows alumni on the IUGA Homepage.