

IUGA Fellowship 2013 Final Report

Award Recipient: *Andrea C. Santiago, M.D.* (Philippines)

Dates of Fellowship: June 1, 2013- May 31, 2014

Host Site: University of Oklahoma Health Sciences Center

Host: *S. Abbas Shobeiri, M.D.*

Professor and Chief

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Research Study and Co-investigators:

Is there a correlation between levator ani and urethral sphincter complex status on 3D ultrasonography?

Santiago AC, O'Leary DW, Quiroz LH, Shobeiri SA

**Presented as an oral poster at the 2014 AUGS/IUGA Annual Scientific Meeting

**Published: Int Urogynecol J. 2014 Dec 2. [Epub ahead of print]

The objectives of this research study were to determine the correlation between levator ani deficiency (LAD) and urethral sphincter complex measurements as visualized on three-dimensional (3D) endovaginal ultrasonography and to compare the LAD score with continence status.

This was a retrospective analysis of patients seen at the Urogynecology clinic of the University of Oklahoma Health Sciences Center between January 2011 and August 2013. Patients were dichotomized into those with urodynamic stress urinary incontinence (SUI) and those with no SUI. Levator ani status was evaluated using a validated scoring system yielding scores of 0 - 6 (normal levator ani/mild LAD), 7 - 12 (moderate LAD), and 13 - 18 (severe LAD). The length, horizontal diameter, and cross-sectional area of the urethra, and the length, width, and the area of the rhabdomyosphincter and smooth muscle sphincter were likewise measured using 3D ultrasound volumes.

Of the 80 patients included, 54 (67.5 %) had SUI and 26 (32.5 %) were continent. 18 (22.5 %) had evidence of mild LAD, 54 (67.5 %) had moderate LAD, and 8 (10.0 %) had severe LAD. Among patients with SUI, those with normal levator ani muscles or mild LAD had greater urethral smooth muscle width than those with moderate and severe LAD ($p = 0.0238$). A greater proportion of patients with SUI also had moderate to severe LAD than continent patients ($p = 0.0177$, OR 3.59, 95 % CI 1.21 - 10.65). There was no difference in LAD distribution by type of stress incontinence (presence or absence of intrinsic sphincter deficiency; $p = 0.2377$).

In conclusion, LAD and urethral sphincter complex status, as visualized on 3D ultrasonography, are independent factors. Moderate to severe LAD is more prevalent in patients with SUI.

Other Research:

An ultrasound approach to the posterior compartment and anorectal dysfunction (video)

Santiago AC, O'Leary DW, Quiroz LH, Nihira MA, Shobeiri SA

Presented at the 2014 AUGS/IUGA Annual Scientific Meeting

Published: Int Urogynecol J. 2015 Mar 24. [Epub ahead of print]

Individualised pelvic floor muscle training is an effective conservative treatment in women with pelvic organ prolapse.

Shobeiri SA, Santiago AC.

Published: Evid Based Med. 2014 Dec;19(6):213. doi: 10.1136/ebmed-2014-110020. Epub 2014 Jul 18.

Use of Ultrasound Imaging in Pelvic Organ Prolapse: an Overview

Shobeiri SA, Santiago AC.

For Publication: Current Obstetrics and Gynecology Report

The location and distribution of transurethral bulking agent: three-dimensional ultrasound study

Yune JJ, Quiroz LH, Nihira MA, Siddighi S, Santiago AC, O'Leary DW, Shobeiri SA

For Publication

Decreased urethral volume is comparable to funneling as a predictor of intrinsic sphincter deficiency

Santiago AC, O'Leary DW, Quiroz LH, Shobeiri SA

Presented as an oral poster at the 2014 AUGS/IUGA Annual Scientific Meeting

Correlation of levator ani defect/ injury and post-obstetric chronic third and fourth degree lacerations

Santiago AC, Barenberg BJ, O'Leary DW, Quiroz LH, Shobeiri SA

Submitted as an abstract at the 2015 AUGS Annual Meeting

Imaging of the female pelvic floor: a review

Santiago AC, Shobeiri SA

Phenotypic characteristics of levator ani avulsion on 3D endovaginal ultrasound

Santiago AC, O'Leary DW, Quiroz LH, Shobeiri SA

Clinical Responsibilities and Experiences/ Special Training Obtained:

The Division of Female of Pelvic Medicine and Reconstructive Surgery (FPMRS) of the University of Oklahoma Health Sciences Center (OUHSC), headed by Dr. S. Abbas Shobeiri, is internationally known for innovative pelvic floor ultrasound techniques in the diagnosis and management of patients with urinary and fecal incontinence and other pelvic floor disorders. My one-year fellowship training focused mainly on the application of multicompartamental ultrasound imaging in clinical practice.

During my first three months, I rotated at the Urogynecology clinic, under the supervision of Dr. Shobeiri, to get accustomed to doing transperineal, endovaginal and endorectal scanning, including manipulating and interpreting ultrasound images using the BK-Viewer software.

Monday mornings (7 AM- 9 AM) were spent in rounds, journal club, or didactic lectures and discussion of pre-operative cases for the week. This was attended by the clinical fellows, other research scholars and FPMRS faculty, namely Dr. Mikio Nihira (fellowship training director), Dr. Lieschen Quiroz, and Dr. Dena White-O'Leary. This was followed by a research

meeting (9 AM- 10 AM, every other week) to discuss updates on on-going research of the group.

During Wednesdays and Thursdays, I had the chance to observe surgical operations (laparoscopic sacrocolpopexy, laparoscopic/ vaginal hysterectomies, anterior/ posterior/ enterocele repairs, to name a few). Most of these patients were also recruited for basic science research using ultrasound techniques.

I also had the opportunity to do cadaveric dissections and hands-on training in intracorporeal and extracorporeal knot-tying, bulking agent injections, tension-free vaginal and transobturator tape procedures.

In addition, the fellowship training at OUHSC is unique in that the clinical fellows finish with an MS degree after training. To be at par, during the fall and spring semesters of 2013, I enrolled and completed courses in Biostatistics and SAS programming at the University of Oklahoma, Department of Public Health.

During the last three months of fellowship, I rotated at the Urodynamics clinic where I learned the basics in uroflowmetry, electromyography, and videourodynamics and did additional research pertaining to bladder neck funneling on videocystourethrography.

Scientific Meetings Attended:

22nd Annual Postgraduate Course in Advanced Gynecologic Surgery

Society of Gynecologic Surgeons, Celebration, Florida, USA, December 2013

American Urogynecologic Society Annual Meeting

Las Vegas, Nevada, USA, October 2013

Joint American Urogynecologic Society and International Urogynecologic Association Meeting

Washington D.C., USA, July 2014

Strengths and Weaknesses of the Fellowship Program:

Overall, the fellowship program is very strong and well-rounded. There is great number and diversity of female pelvic disorders being managed in the clinic or operated each day. In addition, the breadth of clinical and basic science research projects being conducted at OUHSC is truly commendable. Availability of cadavers for dissections has also been very helpful in the understanding of basic pelvic floor anatomy which is essential knowledge for a fellow-in-training to be a truly competent clinician and surgeon.

Restrictions in clinical practice imposed by the country (USA) to non-US licensed physicians is the only drawback in this fellowship as this limits hands-on training and direct participation in patient management.

Use of Funds:

Itemized Expenses	Amount
Travel (Roundtrip Airfare)	\$ 3,000.00
Housing	\$800.00 x 6 months= \$4,800.00 \$450.00 x 6 months= \$ 2,700.00
Utilities/Transportation	\$2,000.00
Food/Miscellaneous	\$8,500.00
Scientific Meetings (SGS Postgrad Course, AUGS 2013, AUGS/IUGA 2014)	\$5,000.00
Tuition Fees (OUHSC Biostatistics and SAS Programming Classes)	\$4,000.00
Total	\$30,000.00

Comments:

First, I would like to express my heartfelt gratitude to my mentor, Dr. Abbas Shobeiri, for his patience and dedication in teaching and guiding me. This fellowship training has given me a wealth of knowledge and skills which I intend to use when I practice and train other individuals in the Philippines. I will forever be grateful.

To IUGA, thank you very much for your support. I hope that you would continue providing this education grant to physicians who are determined to train in this field and make a difference in their home country but have limited resources. In the long term, I believe that this will pave the way for the improvement of women's pelvic health condition worldwide.

Activities:







