

## **Final report on the progress of clinical training and research – IUGA fellowship 2010**

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I would like to express my sincere thanks to IUGA for awarding me the fellowship. I would like to express my sincere and heartfelt thanks to Prof. Eckhard Petri for providing me this wonderful opportunity to enhance my clinical and surgical skills in urogynecology. In this report, I will be presenting details on the progress of clinical training and research from the 4<sup>th</sup> of March 2010 to the 25<sup>th</sup> of February 2011 at Helios Clinics, Schwerin, and University of Greifswald, under the guidance of Prof. Dr Eckhard Petri.

### **Title of research studies and names of investigators**

“Complications of alloplastic materials used in pelvic reconstructive surgery – possible reasons and their management, and application of the new IUGA-ICS classification”. Prof. Eckhard Petri and Dr Kiran Ashok.

### **Detailed summary of research study**

**Objective:** To analyze different complications of synthetic slings and meshes used in pelvic reconstructive surgery in terms of nature of complications and the possible reasons for their occurrence. To apply the new “IUGA-ICS classification of complications directly related to the insertion of prosthesis(meshes, implants, Tapes) and grafts in female pelvic floor surgery” to the list of complications and check its applicability, and give suggestions regarding possible improvements.

**Background:** The widespread acceptance and use of alloplastic materials has allowed an extension of our surgical repertoire and improvement of success rates, but, has resulted in unique complications and clinical scenarios witnessed by pelvic floor surgeon. It is important to be aware of all possible types and reasons for complications, in order to provide necessary information to the patients and to minimize them.

**Materials and Methods:** This study is both retrospective and prospective analysis of the complications of alloplastic materials in female pelvic floor surgery managed surgically at a tertiary referral center. Data on parity, weight, type of complication, time interval between insertion of the prosthesis and the onset of symptoms of complication, type and

nature of prosthesis, and the management process were documented. In order to evaluate possible reasons for the complications, additional data on presence or absence of paravaginal defects, description of prosthesis position in relation to lower urinary tract, shrinkage or prominence of prosthesis, and intra-operative nature of alloplastic material were collected for analysis.

Results: 429 cases of complications of alloplastic materials managed surgically from the year 2003 to 2010 were analyzed. Of all the complications, overactive bladder constituted 50%, lower urinary tract obstruction 41%, vaginal exposure 19%, and pain constituted 16%. 388 complications were directly related to insertion of midurethral slings. Infection, fistulae, urinary tract penetration, groin/thigh pain were other complications. Less common, but important complications were dyspareunia of the partner (with two cases of penile injury), urine loss during intercourse and foreign body sensation in the vagina. In our study abnormal positioning of the slings (48% of all sling complications had abnormal position) was the most common reason for complication, followed by use of midurethral sling in patients with paravaginal defects (44%), overcorrection or excessive tensioning of the slings (18%), and use of slings in women with previous anti-incontinence surgery (21%). The new IUGA-ICS classification could be applied to most of the types of complications, a notable exception being denovo development of overactive bladder. Also category 4B of IUGA-ICS classifications encompasses a wide clinical variety of complications and may need reconsideration.

#### **List of all abstracts resulting from the Fellowship work.**

1. "Complications of alloplastic materials used in pelvic reconstructive surgery – possible reasons and their management, and application of the new IUGA-ICS classification". Abstract submitted for presentation at IUGA 2011 meeting at Lisbon ( Submission number 2011-A-111-IUGA) and the manuscript is in the process of submission to International Urogynecology journal.
2. "Comparison of late complications of retropubic and transobturator slings in stress urinary incontinence and a review of literature". Abstract submitted for presentation at IUGA 2011 meeting at Lisbon (2011-A-245-IUGA) and the manuscript is in the process of submission to International Urogynecology journal.
3. "Partner dyspareunia – A report of six cases" a case report. Abstract submitted for presentation at IUGA 2011 meeting at Lisbon (2011-A-277-IUGA) and the manuscript is in the process of submission to International Urogynecology journal.
4. "Sacrospinous vaginal fixation - current status" Review article published in *Acta Obstetrica Gynecologica et Scandinavica Acta Obstet Gynecol Scand.* 2011 Feb 1. doi: 10.1111/j.1600-0412.2011.01084.x. [Epub ahead of print].
5. "Paravaginal defects and Stress Urinary Incontinence", a review article submitted for publication in the journal "Pelviperineology".

### **Clinical responsibilities & experiences. Details relative to clinical, surgical, or other responsibilities:**

I started my Fellowship from the 4<sup>th</sup> of March 2010 at Helios Clinics, under the guidance of Prof. Eckhard Petri. The daily routine started at morning 7.15 am with clinical meeting where clinical events of the previous day are discussed. This is followed by ward rounds. Operating theater timings were from 8 am to 2 pm, Monday to Friday. Tuesday afternoons I attended Prof. Petri's personal outpatient clinic where decisions regarding patient management were discussed. Every Wednesday I assisted in performing Urodynamics and perineal/introital ultrasound in the out-patient clinic. During weekends Research meetings were conducted where the progress of research work was discussed and suitable plans were made regarding further course of action.

From January 2<sup>nd</sup> 2011 to Feb 25<sup>th</sup> 2011, I was assigned to work in the department of Urogynecology at the University of Greifswald, Germany to enhance my knowledge and skills in Laparoscopic urogynecology. Apart from the above mentioned Urogynecology routine, here I assisted in performing laparoscopic Sacrocolpopexy and a newly devised mesh kit which avoids complete passage of obturator foramen.

#### **Special training obtained**

I underwent one week of practical training in Perineal/Introital ultrasound under the guidance of Dr Jacek Kociszewski at the Protestant Hospital, Hagen, Germany. This helped me to acquire sonographic skills in dynamic imaging of lower urinary tract, assessment of bladder neck and urethral mobility, posterior compartment defects, anal sphincter imaging, determining midurethral tape position and functionality, assessment of complications of vaginal slings and meshes, identification of paravaginal defects and structural changes in levator muscles after vaginal delivery.

#### **Meetings and Conferences attended**

1. Intensive course in Urogynecology organized by German Academy for Gynecology and Obstetrics, 22<sup>nd</sup> to 24<sup>th</sup> April 2010 at Berlin.
2. North German congress on Obstetrics and Gynecology on the 18<sup>th</sup> and 19<sup>th</sup> of June 2010, at Schwerin, Germany
2. Advanced course in Urogynecology and Hands on workshop in perineal ultrasound, 9<sup>th</sup> and 10<sup>th</sup> of July 2010, at Hagen, Germany.
3. Conducted Live surgical workshop on Urogynecology at Karnataka State Gynecology conference on the 5<sup>th</sup> September 2010 held in Hassan, India. In the same conference I delivered a lecture on "Recent concepts in pelvic floor surgery" on the 7<sup>th</sup> of September 2010.
4. Assisted in conducting Anatomical workshop on Pelvic floor at University of Lubeck on the 24<sup>th</sup> of November 2010.

Leipzig Urogynecology meeting at Leipzig, Germany on the 6<sup>th</sup> December 2010

### **Clinical and surgical work statistics**

In addition to urodynamics, perineal ultrasound and out-patient work, my work included assisting surgeries and sometimes independently performing surgeries under the supervision of Prof. Eckhard Petri. Following are the surgical statistics from 4<sup>th</sup> March to 23<sup>rd</sup> February 2011.

	<b>Procedure</b>	<b>Number (assisted)</b>
	Modified colposuspension for SUI	78
	Colposuspension following failed mid-urethral slings	26
	Mid-urethral sling resection for pain & obstruction	31
	Midurethral sling resection for defect healing	17
	Resection of trans-vaginal mesh for defect healing and obstruction	21
	Vesico-vaginal fistula repair using Martius flap	7
	Abdominal VVF repair using peritoneal flap	5
	Removal of mid-urethral sling because of bladder penetration	2
	Removal of mid-urethral sling because of urethral penetration	1
	Tension-free vaginal tape	12
	Intra-urethral injection of bulking agents	22
	Urethro-cystoscopy	57
	Anterior mesh repair	9
	Abdominal sacrocolpopexy	12
	Sacrospinous vaginal fixation	63
	Anterior colporrhaphy	39
	Posterior colpoperineorrhaphy	67
	Culdoplasty	49
	Repair of anterior enterocele	1
	Vaginal hysterectomy in non descent uterus	41
	REEMEX system removal	1
	Anterior mesh system	3
	Radical abdominal hysterectomy	15

Prof. Petri taught me not only the technical aspects of surgery, but also the pre-operative selection of patients with particular emphasis on underlying pathophysiology. I learned that there is no singleton solution to complex pathologies of pelvic floor and that treatment must be individualized based on the underlying pathophysiology. This approach to selection of patients for surgery greatly enhances the effectiveness of the

procedure and minimizes complications. An important advancement in my surgical education was learning “Modified colposuspension”. This technique utilizes a small 5-6cm suprapubic incision and requires an operative time of less than 30 minutes. Participating in Prof. Petri’s surgical program greatly enhanced my understanding of pelvic floor anatomy and its pathomorphology. Simplified approach to Sacrospinous ligament for vaginal apical suspension gave me confidence to perform this procedure safely. These surgical procedures have proven not only effective but also economical, which is an important factor to consider while working in a developing country like India. I plan to apply for my knowledge of Perineal ultrasound to conduct future studies on the pathophysiology of pelvic floor disorders. Our research indicated that transobturator route is associated with increased risk of pain and infections. Therefore, in order to avoid passage through the muscular and fascial structures of obturator region I was taught the use of a new anterior mesh which just fixes the mesh avoiding complete passage through the obturator region. In summary, I learnt the all time wisdom that when considering treatment of pelvic floor disorders we need to focus on the improvement of overall quality of life with emphasis on economy and long term satisfaction.

**Strength and Weakness of the Program:**

Working and learning under one of the most experienced and authoritative Urogynecologist is a life-time opportunity. This program will teach not only the scientific and technical aspects of Urogynecology, but most importantly it will teach to look at our patients in a humanistic way. This means, understanding their problems and expectations, empathizing with their situations and provide long term solutions to their problems.