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University of Alberta Reconstructive Urology Fellowship

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1. Overview:

This document provides an overview of the University of Alberta Adult and Pediatric Reconstructive Urology Fellowship Program. This is a one-year clinical fellowship focusing on adult and pediatric urethral, bladder and genital urethral reconstructive surgery. The University of Alberta performs a high volume of reconstructive surgery (>200 cases / year) and acts as the main reconstructive urology center for Western Canada. The fellowship program focuses on urethral reconstruction for stricture, hypospadias, fistula, and trauma as well as complex male genital reconstruction (trauma, Peyronie's disease, lymphedema), surgery for sexual dysfunction (prosthesis), complications of prostate cancer treatment and the adult neurogenic bladder. There is also a significant component of female pelvic floor reconstruction (stress incontinence, pelvic organ prolapse and voiding dysfunction). The fellow will participate in male and female reconstructive surgeries (>300 procedures/year) as well as perform pre-operative assessment, urodynamics and urethral imaging. This is a robust clinical fellowship with dedicated time and the expectation of clinical research with the opportunity for basic science research participation.

2. Prerequisite/Eligibility Requirements:

The fellowship is open to those able to obtain medical licensure in the province of Alberta or graduates outside of Canada who have external funding. Applicants should send a cover letter, CV and 3 references directly to Dr. Keith Rourke (fellowship director).

Requirements are:

1. Applicant should obtain medical licensure or postgraduate registration with the College of Physicians and Surgeons of Alberta (depending on funding source).
2. Applicant should have completed the LMCC (parts 1 and 2) unless they have external funding.
3. Registration with the Post-graduate Medical Education (PGME) office at the University of Alberta (\$945).
4. Applicant should have a valid work permit if not a Canadian citizen or permanent resident.
5. Membership with the [Canadian Medical Protective Association](#) (CMPA) as a clinical fellow.
6. Applicant must send a cover letter, current CV, and three reference letters supporting their application. One of these letters must be from the residency program director.

3. Funding: The successful candidate will either:

1. Provide external funding
2. Generate salary support through clinical billings. This requires full licensure in the province of Alberta and will be administered through the Department of Surgery.

4. Clinical Expectations:

In a typical week the fellow would attend 2-3 operative days per week with 1-2 days of ambulatory/office experience. The fellow will be actively scheduled with Dr. Keith Rourke (Male Reconstruction), Dr. Peter Metcalfe (Transition Urology), Dr. Derek Bochinski (Andrology) and Drs. Gary Gray and Blair St. Martin (Female Reconstruction). The fellow will regularly attend ambulatory clinics (including the Adult Spina Bifida clinic), cystoscopy and urodynamics and operating rooms at the University of Alberta Hospital, Royal Alexandra Hospital and the Misericordia Hospital. The University of Alberta Hospital is also a Level 1 trauma centre and the fellow will be involved with select on-call cases. The Fellow will also participate in weekly urology rounds (Fridays 7 – 8am), attend journal club and participate in educational endeavors within the division (i.e. academic half-days and OSCE examinations).

5. Academic Expectations:

It is expected that the fellow will actively pursue clinical research. Minimal expectations are submission of two abstracts to a major urology conference and prepare/submit at least one manuscript per year. As mentioned the Fellow will also participate in weekly urology rounds, regularly attend journal club, cases conferences and participate in resident education within the division (i.e. academic half-days and OSCE examinations). It is expected that the fellow will present at the Divisional of Urology Research Day.

6. Objectives of Training (Disease Specific):

1. Urethral Stricture:
 - a. Accurately diagnose and stage urethral stricture and stenoses
 - b. Learn and apply penile, urethral, and male perineal anatomy as it relates to vascularity, innervation and fascial layers
 - c. Accurately diagnose and stage urethral stricture and stenoses
 - d. Perform and interpret both simple and complex urethrography
 - e. Outline a decision making approach to urethral stricture
 - f. Perform anterior urethroplasty for simple and complex urethral stricture including anastomotic, staged, and substitution urethroplasty techniques
 - g. Harvest buccal mucosal grafts, penile island flaps and other tissue sources when indicated for urethral reconstruction
 - h. Perform posterior urethral reconstruction for pelvic fracture associate urethral injuries.
2. Post-prostatectomy Incontinence:

- a. Perform and interpret investigations (including urodynamics) for post-prostatectomy incontinence
 - b. Outline the decision making process for treatment of post-prostatectomy incontinence
 - c. Perform implantation of the artificial urinary sphincter (AUS) including the standard perineal and transcorporal approaches.
 - d. Adeptly perform male urethral sling (MUS) procedures.
 - e. Manage variations in postoperative care for both the AUS and MUS.
3. Peyronie's Disease
- a. Outline the pathophysiology of Peyronie's disease
 - b. Outline all local, topical and systemic treatment options for acute phase Peyronie's disease
 - c. Adeptly perform assessments on patients presenting with penile deformities and Peyronie's disease
 - d. Outline the indications for surgical intervention
 - e. Independently perform both plication and grafting techniques for Peyronie's associated deformities.
4. Genitourinary Trauma
- a. Outline the presentation of genitourinary trauma including renal, bladder, urethral and genital.
 - b. List and understand the principles of imaging and investigating genitourinary trauma
 - c. Understand the principles of reconstruction for traumatic upper & lower genitourinary trauma
 - d. Manage in the acute and chronic setting renal, bladder, urethral and genital trauma.
 - e. Manage major traumatic genital skin defects
5. Transition Urology/Neurogenic Bladder
- a. Outline the key historical points for a patient with neurogenic bladder.
 - b. Perform a comprehensive neuro-urologic examination
 - c. Discuss the overall goals of care for patients with neurogenic bladder and spinal dysraphisms.
 - d. Discuss the multidisciplinary needs of patients with neurogenic bladder and spinal dysraphisms.
 - e. Discuss the clinical indications for urodynamics in neurogenic bladder patients.
 - f. Outline the medical treatment options for neurogenic detrusor overactivity (NDO) including cases with detrusor sphincter dyssynergia (DSD).
 - g. Discuss the indications for second line treatment of NDO (+/- DSD).
 - h. Outline and perform treatments for refractory NDO including botulinum toxin, neuromodulation and urinary diversion.
 - i. Perform both continent and incontinent (ileoconduit) urinary diversion.
6. Erectile Dysfunction

- a. Describe the hemodynamics, neuroanatomy, neurophysiology, epidemiology and classification of erectile dysfunction
 - b. Completely and thoroughly evaluate complex cases of erectile dysfunction
 - c. Describe and apply first, second and third line treatments for erectile dysfunction
 - d. Adeptly perform implantation of malleable, two piece and three piece penile prosthesis
7. Urinary Diversion
- a. Evaluate candidates for urinary diversion
 - b. Outline the pros and cons of different forms of urinary diversion
 - c. Independently and adeptly perform continent urinary diversion
 - d. Manage the postoperative care of complex urinary diversions
8. Urinary Incontinence and Prolapse
- a. Evaluate complex cases of stress and urge incontinence
 - b. Outline treatment options for stress and urge incontinence
 - c. Discuss and demonstrate an appropriate vaginal and recto-vaginal examination in the female.
 - d. Be able to evaluate and grade pelvic organ prolapse (POP-Q)
 - e. Perform surgeries for stress urinary incontinence and pelvic organ prolapse
 - f. Demonstrate the ability to independently set up and perform videourodynamics and be able to identify and interpret all of the following:
 - Urinary flow rate
 - Residual urine volume
 - Flow patterns
 - Bladder compliance
 - Involuntary bladder contractions
 - Abnormal bladder sensation
 - Leak point pressures
 - Pressure/flow studies
9. Genital Reconstruction: Describe the challenges, etiology, evaluation and perform reconstructive procedures for:
- a. Buried penis
 - b. Genital lymphedema
 - c. Complex hypospadias
 - d. Genital trauma
10. Urinary Fistulae
- a. List the signs and symptoms commonly associated with vesico-vaginal (VVF), ureterovaginal (UVF) and rectourethral fistulae (RUF).
 - b. Describe the pathogenesis of urinary tract fistulae including iatrogenic, post-irradiation and obstetric trauma induced fistulae.

- c. Describe the important components of the history and physical examination in patients with urinary fistulae.
- d. Distinguish between VVF and UVF using historical and diagnostic techniques.
- e. Discuss the surgical principles involved in repair of these fistulas including the biology of wound repair and the preparation of tissues for surgery.
- f. Describe the conservative management of urinary tract fistulae.
- g. Discuss in detail the surgical repair options for patients with VVF, UVF and RUF.
- h. Discuss the indications for tissue transfer and interposition when reconstructing urinary fistulae.

7. Teaching Methods:

1. Clinical performance with direct observation
2. Operating room encounters with observed performance
3. Rotation specific readings
4. Direct faculty mentorship
5. Daily supervised care of surgical patients
6. Clinical assessments in clinic
7. Rotation specific objectives
8. Select supervised on-call experiences

8. Methods of Evaluation:

1. Global faculty evaluation with fellowship committee members
2. Observed clinical examination
3. Oral examinations (OSCE)
4. Divisional teaching rounds
5. Biannual review with fellowship director
6. Portfolio-record notes about interesting cases and clinical pearls
7. Case logs and procedure logs
8. Medical records review
9. Surgical checklists