

Topic	Speakers
Overview of major pelvic surgery and radiation: Anatomy & Mechanisms of injury to LUT and bowel	Alexis Schizas
Major pelvic surgery and radiation: Assessment and management of the LUT	Roger Dmochowski
Questions	All
Low anterior resection syndrome and radiation proctitis	Alexis Schizas
Urinary tract reconstruction in irradiated fields and urological outcomes following total pelvic exenteration	Arun Sahai
Questions	All
Major pelvic surgery and radiation: Assessment and management of sexual function	Majed Shabbir
Questions	All

Aims of Workshop

Major pelvic surgery such as low anterior resection, abdomino-perineal resection, radical hysterectomy, total pelvic exenteration and pelvic radiation are associated with lower urinary tract, bowel and sexual dysfunction with resultant poor quality of life. This workshop will review the mechanisms and anatomy that leads to the problem and the current published literature in this subject area will be reviewed. Optimum work up and management will be discussed. Finally recommendations will be made based on evidence and best clinical practice with regards to lower urinary tract, bowel and sexual function in this setting.

Learning Objectives

Understand the mechanism by which major pelvic surgery and radiation causes lower urinary tract symptoms and bowel dysfunction and have an overview of the current literature in this field.

Target Audience

Urology, Urogynaecology and Female & Functional Urology, Bowel Dysfunction

Advanced/Basic

Intermediate

Suggested Learning before Workshop Attendance

Gomes C, Nunes R, Tse V. Pelvic irradiation and its effects on the lower urinary tract: a literature review. *Curr Bladder Dysfunction Rep* (2015) 10: 295-302

Spencer K, Tse V. The effect of major pelvic extirpative surgery on lower urinary tract function. *Curr Bladder Dysfunction Rep* (2019) 14: 102-109

Peltier A, van Velthoven R, Roumeguère T. Management of erectile dysfunction after cancer treatment. *Curr Opin Oncol*. 2009 Jul;21(4):303-9

Alexis Schizas

Overview of major pelvic surgery and radiation: anatomy & mechanisms of injury to LUT and bowel low anterior resection syndrome and radiation proctitis

In this workshop we look at how pelvic surgery and pelvic radiotherapy alters anatomy and pelvic floor function as well as any nerve damage that may occur. We review the anatomy of the pelvis in the male and female, pelvic floor muscles and nerve supply within the pelvis and how different pelvic surgeries affects the normal anatomy.

We review the anatomy of common major pelvic operations, including an anterior resection, abdominoperineal excision, hysterectomy, cystectomy, prostatectomy and total pelvic exenteration.

Reconstruction of the neo-rectum and neo- bladder while trying to restore normal anatomy will often lead to defaecatory and urinary symptoms. The anatomy of reconstruction is reviewed and how it may effect function.

Male and female sexual function post radiation and surgery will also be reviewed.

Low anterior resection syndrome is a range of symptoms that includes faecal incontinence, clustering of bowel movements, faecal urgency, or feelings of incomplete emptying, alternating bowel habit with constipation and defaecatory difficulties followed by increased frequency, increased flatus. It has a significant impact on quality of life.

Radiation proctitis is inflammation of the rectum as a result of radiation damage to the rectum usually given to treat a cancer. This may be following rectal, anal, prostate or cervical cancer treatment. Radiation proctitis may occur acutely or may be chronic depending on timing of symptoms following treatment.

Treatment or management of symptoms are discussed and include, pelvic floor muscle training, dietary advice, medications, suppositories, endoscopy or even surgery.

Roger Dmochowski

Major pelvic surgery and radiation: Assessment and management of the LUT

The impact of prior pelvic interventions on strategic planning for management and, where feasible, urogenital reconstruction must be considered prior to embarking upon definitive therapy for lower urinary tract dysfunction and symptoms associated there with. The impact of radiation therapy, provided by any modality (interstitial, external, combined, adjunctive, or definitive) has long been recognized as potentially deleterious for some patients receiving this therapy for curative intent of pelvic malignancy. Not only is there acute affect associated with this therapy (such as hemorrhagic cystitis) but perhaps more perfidious are the chronic changes induced by radiation therapy which affect not only epithelial and smooth muscular structures but also vascular supply. Knowledge of timing and type of radiation is important as interstitial implants provide an additional complication to management of individuals suffering the long-term effects of post radiation injury.

Interestingly, the chronic effects of chemotherapeutic agents have only more recently been appreciated. These affects also include bladder mural fibrosis, poor storage in bladder compliance, and injury to afferent vesical function.

Increasingly, symptomatic patients are presenting who have actually received both chemo and radio therapeutic interventions for pelvic malignancy and now are experiencing functional decline directly resulted from these interventions.

Other therapies, often surgical, provided for curative intent or even for management of chronic disease (such as inflammatory bowel disease) may also uniquely affect lower genitourinary and gastrointestinal function. Data has accrued over several decades as to the effects of abdominal perineal resection, low anterior resection, radical hysterectomy, and other extensive pelvic surgical interventions. Substantial rates of voiding dysfunction, often associated with gastrointestinal dysfunction, have a noted chronically after these operations and are often surreptitious in presentation.

Evaluation of patients with functional, infectious, and other disorders directly resulting from the above enumerated interventions must take into account not only the pelvis but also a tendon functions including the real risk of renal functional deterioration and chronic bowel motility.

A critical aspect of the pre-therapeutic evaluation for individuals presenting with these disorders is a thorough understanding also of presenting comorbidities which may further add to considerations related to poor wound healing, chronic pain, and exacerbation of current symptomatology. Perhaps the most important aspect of evaluation is the patient voice in expectation of therapy. The reality of many non-surgical and surgical interventions in these individuals is a less than perfect result, often simply symptomatic amelioration.

The prism of each patient's unique condition frames not only the evaluation but also proposed interventions which should always include a stepwise algorithm prior to major surgical intervention with attendant independent risk factors.

Arun Sahai

Urinary tract reconstruction in irradiated fields and urological outcomes following total pelvic exenteration

Total pelvic exenteration is a radical procedure requiring the en bloc resection of the rectum and surrounding organs in the pelvic region. First described by Brunschwig in 1948, this operation was initially used for palliative treatment of gynaecological malignancies. Today this has expanded to the treatment of locally advanced and recurrent pelvic malignancies with both curative and palliative indication, and in many cases, it is the only curative option for a patient.

Urological reconstruction is a vital part of TPE and can be approached in a multitude of ways. This generally is split into two categories, continent and incontinent urinary diversions. Choice of urinary diversion depends on a variety of factors including age, tumour biology, co-morbidities, surgical expertise / experience, radiation and whether concomitant procedures are required eg plastic surgery reconstruction.

TPE is an extensive procedure, can require multiple specialties, can be a lengthy procedure and carries a high complication rate. Mortality rate has improved over the years but is still high by modern surgical standards. Studies have suggested that GI and urological complications make up for around half of all surgical complications following TPE.

This lecture will focus on the background of TPE with a particular focus on outcomes following urological reconstruction in this setting in patients with locally advanced and recurrent rectal cancer. Data will be presented from our institution as well as from the literature. Techniques will be discussed including ways to optimise surgical outcome in an often irradiated field. The results will assess whether outcomes are different based on indication ie locally advanced disease vs recurrent and whether the patient received radiotherapy or not.

Majed Shabbir

Major pelvic surgery and radiation: Assessment and management of sexual function

When working up patients for complex pelvic surgery, sexual function and fertility after treatment is often one of the furthest thoughts in the mind. However, pelvic surgery and radiotherapy can have a profound and lasting negative impact on both, and this impact is elevated when these treatments are used in combination. The time to address the impact of treatment on function and fertility is before any intervention has taken place. This allows for the most effective, pro-active management, and for the least intrusive methods of fertility preservation.

When added to a cancer diagnosis, anxiety of the impact of infertility and impaired sexual function on life after treatment can add significant stress to an already difficult situation. This can be mitigated by managing expectations from the outset and giving patients a clear understanding of how life will change after intervention. Clarity on these consequences, rather than complications, of intervention and clear guidance of the pro-active steps that can be taken to effectively manage any changes in function allows patients to have a roadmap to returning to as normal a life as possible after treatment.

Problems with sexual function after pelvic surgery are often under-reported. Given the improvements in treatment strategies and increased survivorship, more patients than ever are now presenting with treatment related functional problems. This is particularly important to the younger cohort of patients requiring intervention.

Common factors which can affect erectile function after surgery or radiotherapy include age, co-morbidities such as diabetes, cardiovascular disease and smoking and the pre-treatment baseline erectile function. For surgery, the extent of the disease and type of dissection, the surgical approach and ability to nerve spare may influence outcomes. With radiotherapy, the extent of the treatment field, total radiation dose, fractionation schedule, type of treatment (external beam vs brachytherapy) and setting of the radiotherapy (primary, adjuvant or combination) will have an impact on functional outcome. While the greater focus is typically placed on erectile dysfunction, it is important to also address the impact of treatments on ejaculation, and the potential psychological impact of changes to body image and stomas on sexual function, which will all be addressed during the session.

In this lecture we will address the impact of pelvic surgery and radiotherapy on sexual function and fertility, including strategies to mitigate the impact of treatment and to pro-actively manage the sexual consequences of intervention. We will discuss the concept of pre-habilitation, and lessons learned from the management of sexual dysfunction after prostate cancer. Incorporating discussions on expectations of functional outcomes after treatment in pre-intervention counseling can lead to less treatment regret and better, patient centered care.