

**ADVANCED
TRAINING
IN
ONCOLOGY**

Introduction

After training in core urology, at least 12 months further continuous training within a designated Cancer Centre is necessary. The trainee undertaking this 12 month module will be expected to keep a continuing audit of their own cases. In addition they will need to keep documentation on “indicative” cases of various stages of the diseases in order to demonstrate a thorough understanding in their ability to diagnose, treat and offer prognoses with suitable intervention in the major malignancies of bladder, kidney and prostate.

For some less common tumours or to acquire training in complex surgery for penile or testis cancer or to acquire skills in reconstruction trainees will want to undertake a second clinical or “flexible” year that might be taken in a unit outside the employing Deanery.

General Introduction

The trainee will gain advanced knowledge of the following:

- 1) General tumour biology and principles of carcinogenesis
- 2) Recent clinical trials on cancer therapy
- 3) Awareness of cutting edge science and areas of controversy
- 4) Principles of epidemiology as applied to cancer including genetic aspects
- 5) Principles of screening and problems of screening for cancer
- 6) Principles of non-surgical management of cancer including the need for “fast-tracking” some patients
- 7) Psycho-social aspects of care of cancer
- 8) Working within a multi-disciplinary team of surgeons, oncologists, nurses, radiologists, nephrologists, pathologists, physicians and dieticians
- 9) Immunology and genetics related to cancer
- 10) Gross and microscopic pathology related to urological tumours including pre-malignant conditions
- 11) Clinical competence in the management of cancer including
 - a) bladder cancer
 - b) renal cancer
 - c) upper tract transitional cell carcinoma
 - d) prostate cancer
 - e) penile cancer
 - f) testis cancer
- 12) Principles of the “new biology” and genetics as applied to potential novel therapies
- 13) The hospice movement and the principles and indications for terminal care
- 14) Expertise in counselling patients with cancer and the management of the bereaved relative.

GUIDES TO LEARNING

Clinical pharmacology of drugs and hormones

Objectives

To gain an understanding of :

- 1) Hormonal agents used in the treatment of cancer
- 2) Principles of chemotherapeutic agents used in the treatment of cancer; their common side effects, outcomes of treatment and indications
- 3) A knowledge of the endocrine system as applied to urological cancer

- 4) The effects of cancer on the endocrine system
- 5) Ectopic production of hormones
- 6) Principles of Cancer Cachexia
- 7) Tumour markers

Pathology

Objectives

The trainee should understand:

- 1) Gross and microscopic pathology of
 - a) Renal cancer
 - b) Penile cancer
 - c) Testis cancer
 - d) Bladder cancer
 - e) Prostate cancer
 - f) Upper tract TCC
- 2) Principles of carcinogenesis
- 3) The metastatic process

Immunology

Objectives

The trainee should understand and be able to discuss

- 1) the essentials of basic immunology,
- 2) tumour immunology
- 3) principles of immunotherapy and current trials
 - a) intravesical
 - b) systemic
 - c) tumour vaccines

Genetics and molecular biology

Objectives

The trainee should understand and be able to discuss:

- 1) Principles of hereditary cancer syndromes
- 2) Oncogenes
- 3) Tumour suppressor genes
- 4) Angiogenesis
- 5) Apoptosis
- 6) Cell cycle abnormalities
- 7) Principles of gene therapy

Anatomy, Physiology and Pathophysiology

Objectives

To gain an understanding of:

- 1) Applied surgical anatomy of the retroperitoneum
- 2) Normal physiology of the kidney, prostate, bladder and testis
- 3) Effects of upper tract obstruction on renal function
- 4) Effects of impaired renal function on ability to tolerate surgical and medical treatments
- 5) Effect of ageing on ability to tolerate surgical and medical treatments

- 6) Detailed assessment of general fitness to undergo complex treatments
- 7) Understanding of sepsis and effects of cancer on systematic physiology
- 8) Understanding of post-operative complications of sepsis, thrombo-embolism, stroke, other cardiovascular events.
- 9) Potential problems associated with prolonged complex procedures:
 - a) Patient positioning
 - b) Homeo-stasis
 - c) Sepsis
 - d) HDU/ITU support

Clinical Diagnostic Techniques and Imaging

Objectives

The trainee should have an understanding of:

- 1) Principles of ultrasound, X-rays, CT, nuclear medicine and MRI in imaging
- 2) Principles of biopsy techniques and histological processing
- 3) Basic immuno-histochemical techniques

Working within a multi-disciplinary team

- 1) Working with clinical and medical oncologists
- 2) Joint team working in the context of regular planning treatment meetings
- 3) Involvement of others: nurses, physiotherapists, radiologists and pathologists
- 4) Involvement with palliative care team
 - a) An understanding of the importance of palliative treatment for patients with cancer
 - b) Types of palliative care available for patients with urological cancer
 - c) Involvement of hospice and social care support for patients with cancer
- 5) Role of chemo-therapy and radiotherapy in palliation

Psychological Aspects

Objectives

The trainee should be competent in

- 1) Effect of a diagnosis of cancer on patients and their relatives
- 1) Bereavement reactions
- 2) Counselling of patients undergoing treatment for cancer
- 3) Working with trained nurses and other workers to support patients and their relatives.
- 4) Sexual effects of cancer and its treatment

Occupational aspects

- 1) Awareness of occupational, environmental and drug factors in tumour formation
- 2) Medical legal implications of these aspects
- 3) Ability to advise patients and relatives on sources of information
- 4) Preparation of medico-legal report

Surgical Techniques

Objectives

Superficial bladder cancer

- a) The trainee needs to demonstrate the ability to resect any size of superficial bladder

- tumour, to take adequate biopsies of both tumour and base and to have knowledge of the need for biopsies of the bladder neck and the prostatic urethra, where indicated.
- b) They need to demonstrate an understanding of the clinical and pathological differences between a Ta and a T1 lesion.
 - c) To understand the benefits of intravesical chemotherapy and the difference between it and intravesical immunotherapy.
 - d) The uses of intravesical therapy in patients at diagnosis and in patients with recurrent tumours. They need to be aware of and to have participated in clinical trials attempting to elucidate the best therapy for such patients.
 - e) They need to be aware of the frequency of cystoscopic and radiological follow up in these patients. They must have a clear idea and to be able to define the periods of follow up and the use of radiological investigations in the follow up period.

Advanced bladder cancer

- 1) The trainee must have a thorough ability to carry out radical TUR of an invasive bladder tumour and should be able to demonstrate this ability by means of an appropriate video.
- 2) They must be aware of the indications specifically for radical surgery and radical radiotherapy and to be able to discuss and offer patients undergoing radical surgery either:
 - i) simple urinary diversion
 - ii) an orthotopic bladder reconstruction (will need 24 months)
 - iii) continent urinary diversion (will need 24 months)
 (most trainees undergoing 1 year of urological oncology training would not offer anything other than a simple urinary diversion unless they had undertaken an additional year in reconstructive urology).
- 3) They must be conversant with the current indications for neo adjuvant and adjuvant chemotherapy and to be at least familiar, if not already participating, in clinical trials to elucidate best practice.
- 4) They must be aware and be able to guide patients in the indications for radiotherapy with:
 - a) curative intent
 - b) palliative intent only.
 - c) They need to be aware of the specific follow up of patients who have received radiotherapy, to have a firm timetable for the patient in the intervals for both cystoscopic examination of the bladder and additional radiological imaging and they must be aware when a patient requires a salvage cystectomy, although this procedure may, with benefit, be carried out at the Cancer Centre.

Renal cell carcinoma

- a) They must demonstrate the ability to carry out independently, a radical nephrectomy for renal cell carcinoma, knowledge of surgical approaches
- b) Use of partial nephrectomy and other treatments in patients with von Hippel Lindau or with impaired renal function; role of renal cooling
- c) Management of complex cysts and classification
- d) They must understand the indications for this procedure in the presence of known metastases and to be aware of the current trials investigating this problem.
- e) They must be aware and able to demonstrate the indications for referral to the Cancer Centre in patients with renal cell carcinoma who may require additional surgery for isolated metastatic disease, immunological therapy for metastatic disease and be able to demonstrate by means of their indicative cases how these patients are managed.
- f) Management of angiomyolipomas
- g) The management of renal vein and IVC involvement will require specialised further training.

Prostate cancer

- a) The candidate needs to be able to demonstrate the ability to carry out independently a radical prostatectomy.
- b) Indications and methods of nerve sparing
- c) Role of transrectal ultrasound and biopsy (TRUS); role of MRI
- d) They need to be able to demonstrate the indications for this procedure and to be aware of the specific indications being recommended by such bodies as the AUA and EAU.
- e) They must be aware of the indications for patients to undergo either watchful waiting, radiotherapy by means of either external beam or brachytherapy, or initiating *de novo* hormonal therapy in patients with localised prostate cancer.
- f) The candidate must be able to demonstrate their ability to offer balanced advice and have a detailed knowledge of the indications for each of these specific therapies in this condition.
- g) The trainees need to be aware in patients with advanced, but non-metastatic prostate cancer of contemporary trials and to be able to explain the rationale and the results behind these. They must be able to demonstrate the rationale for the management of patients with advanced prostate cancer by either:
 - surveillance
 - hormonal therapy
 - combination of radiotherapy and hormone therapy.They must be able to demonstrate for each item of therapy the benefits and complications that are associated and to offer a cost effective analysis in both clinical and economic terms for the therapy recommended.
- h) Metastatic disease – the trainee needs to know the indications for various hormonal preparations, and be familiar with contemporary clinical trials of hormonal therapy for patients with established metastatic disease. The candidate needs to be able to demonstrate an understanding of rational management for patients presenting *denovo* with metastatic prostate cancer.
- i) Management of hormone relapsed disease; need for clinical trials

Management of obstructive nephropathy

- 1) Alternative managements for relief of obstructive uropathy
- 2) Indications for intervention / non intervention

APPRAISALS

Appraisals will include the competency to carry out the major ablative surgical procedures of radical nephrectomy, radical cystectomy and radical prostatectomy. The appraisal will include performance in the assessment and management of patients with:

- 1 Superficial bladder cancer
- 2 Advanced bladder cancer
- 3 Renal cell cancer
- 4 Prostate cancer

MORE COMPLEX CANCER CARE

Some trainees will wish to acquire more complex skills. Provisions for such a trainee to spend up to 6 months in another Cancer Centre with a designated specialist (perhaps looking at a single organ disease) should be available.

It is possible that such an individual wishing to enhance his interest may wish to take further out of programme year - part of which time may be then spent in research and part in centre in either North America and/or Europe in which novel therapies are being developed.

During the 2nd year specific attention to the acquisition of skills in the management of the following urological malignancies will be required. This should be seen against a background of continuing experience in the management of the 3 major cancers, which were acquired during year 4 of training.

1 Penile cancer

- a) Ideally all penile cancers should be concentrated within a Cancer Centre and the diagnosis, surgical management of early stage disease and the diagnosis and management with both external beam radiotherapy and brachytherapy needs to be understood.
- b) The trainee needs to be conversant with the surgery of a full or modified radical inguinal lymphadenectomy with the assistance of plastic surgical colleagues, if necessary.
- c) The trainee needs to understand the benefits of “sentinel” node biopsy.
- d) The trainee needs to understand the integrated approach of both radiotherapy and chemotherapy of patients with advanced penile cancer.
- e) Treatment options for premalignant conditions of glans penis including laser treatments

2 Testis cancer

The trainee should become acquainted with retro-peritoneal lymph-node dissection as carried out currently in the United Kingdom, which is for residual disease following chemotherapy. They should have assisted with and have carried out independently parts or all of these procedures and these need to be documented.

3 Other malignancies

During his 2nd year within the Cancer Centre the trainee needs to have developed his own portfolio of rare urological malignancies including urachal tumours, carcino-sarcomas, neuro-endocrine tumours, angiomyolipomas and sarcomas. He should be able to demonstrate how these cases have been diagnosed and managed and how they would propose to follow up these cases and what other points of management they would wish to institute in cases under their own care.

4 Role of endoscopic surgery

- 1) Role of laparoscopy
- 2) Role of endo-urological treatments
- 3) Advanced training in endo-urology may be required for some uro-oncologists in the future.

5 Treatment of radiotherapy induced pelvic disease

- 1) Radiation cystitis, colitis
- 2) Cyclo-phosphamide induced bladder disease
- 3) Indications and types of reconstructive surgery

ASSESSMENT AND APPRAISAL

a) **Renal cell carcinoma**

- i) surgical extirpation of radical nephrectomy
- ii) the management of renal vein and IVC involvement
- iii) partial nephrectomy for localised tumour
- iv) nephro-ureterectomy

b) **The management of bladder cancer**

- i) the management of patients with residual nodal disease
- ii) the management of patients with established metastatic disease
- iii) the indications and technique of partial cystectomy
- iv) the indication for and demonstration of how to carry out a radical TUR of a muscle invasive bladder tumour
- v) the follow up and management of patients with residual disease following radiotherapy
- vi) the indications for salvage cystectomy, the specific problems encountered in this operative procedure and
- vii) the understanding of the role of adjuvant and salvage chemotherapy in patients with metastatic bladder cancer
- viii) “Down-staging” by chemo-radiation; role of bladder sparing therapies

c) **Prostate cancer**

The indications for radical surgical therapy, radical radiotherapy, watchful waiting or initial hormone therapy for pathologically localised prostate cancer and the evidence for each treatment option.

Management of patients with advanced but non-metastatic prostate cancer.

Management of patients with metastatic prostate cancer.

The possible role of novel therapies – retreatment of patients at risk because of genetics or adverse histology. The role of nutrition as neo adjuvant therapy. The contemporary place of novel therapies needs to be known.

d) **Testis Cancer**

The ability to carry out a retroperitoneal lymph node dissection. An understanding of the integrated role chemotherapy and/or radiotherapy for the management of various types of testicular tumour.

Role of testis biopsy

e) **Penile Cancer**

The ability to carry out a partial and total penectomy with or without radical or modified radical lymphadenectomy. The indication for iliac lymphadenectomy and ability to carry this out.

The management of patients post surgery or post radiotherapy with specific indications as to timings of follow up and radiological investigation needs to be known and demonstrated.

The indications for additional radiotherapy and/or chemotherapy and contemporary trials of new therapy for advanced or metastatic disease.

Trainee Year of Training

	Completed by Trainee						Completed by Trainer							
	On appointment			At Completion			Competence level at 6 months				Competence level at 12 months			
	Seen	Assisted	Solo	Seen	Assisted	Solo	1	2	3	4	1	2	3	4
Urological Oncology														
Radical nephrectomy + caval surgery														
Conservative surgery for renal cancer														
Radical cystectomy														
orthotopic neo-bladder														
continent urinary diversion														
Anterior exenteration														
Radical prostatectomy														
Para-aortic lymph node dissection														
Amputation of the penis														
Block dissection of iliac lymph nodes														

Date:

Signed Trainee:

Signed Trainer:

LEVELS OF COMPETENCE

- Level 1 Needs training to perform the task
- Level 2 Needs supervision in performing the task
- Level 3 Competent to perform the task unsupervised
- Level 4 Competent to train others to perform the task