Squamous Cell Head and Neck Cancer

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EXTENT P/H	368 p, hardback
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REVIEWER	Mark McGurk
STAR RATING	****

This book is part of the Current Clinical Oncology series and is preceded by 14 other topics, notably the common tumours of lung, breast and colorectal as well as more diverse subjects such as hepatocellular carcinoma, myeloma and intra-operative irradiation. Now it is the turn of squamous cell head and neck cancer.

This is a multi-author book written by 48 medical/radio oncologists and unashamedly American in perspective with only one author from Europe (Jacques Bernier) and four from the National Cancer Institute of Singapore. In terms of the target audience, this is a studious work with few illustrations, produced in dense type and replete with references. It is a treasure trove for the student writing a paper or applying for a grant but not an easy read.

The book does not deal with broad issues and is likely to confuse the uninitiated. The first chapter deals with risk factors for head and neck cancer of those in the population that do not smoke or drink. This small cohort of patients has attracted attention because of the association with human papilloma virus and the potential for a vaccine solution. Other factors addressed are relatively inconsequential such as diet, genetic predisposition, immune deficiency, *etc.*

The next four chapters deal with surgical topics: the first is laryngeal preservation surgery, which is a well-established subject – nothing much new here. The next topic is laser therapy, where the European results of larynx and oropharyngeal surgery are noteworthy. The following chapter discusses the role of neck dissection in the context of organ preservation therapy. The issue is whether a patient with positive cervical lymphadenopathy needs a complete neck dissection after chemoradiation. The answer is that this is only necessary for patients with disease greater than N1. The third chapter deals with surgical salvage after failed chemoradiation (organ preservation therapy) and here there may be a surveillance role for PET in detecting persistent disease. We will have to wait for the answer.

Chapters 6–10 deal with radiotherapy issues; first, the management of the T3–T4 tumour of the larynx. The authors provide a wealth of detail on the subject and conclude that careful case selection is important for the outcome. The next chapter deals with brachytherapy, a subject with a long history but again there is little new to report. In chapter 8, intensity-modulated radiation therapy is

described but it is too early to expect a realistic account of its performance. However, the next chapter on accelerated and hyperfraction radiation therapy does provide answers within the final analysis – an assertion that the more radiation targeted on the tumour, the greater is the chance of cure.

The remaining half of the book covers medical oncology. The role of traditional induction chemotherapy is dispatched quickly but its application in organ preservation is fully developed in the succeeding two chapters. These convey the reality of a fast-moving topic breaking new ground, where the advantage now lies with multimodality therapy. Concomitant chemoradiation gives up to an 8% improvement in survival across all stages of disease. Nevertheless, there is a catch as it does not extend to all age groups, as by the age of 70 years the survival advantage is lost.

Chapters 16–19 deal with novel therapies including attempts to protect normal tissue from radiation damage and new therapy targeted at neovascularisation, cell cycle pathways and gene manipulation. Herein lie the innovations for the future and studies are already being designed to trial these molecules in the head and neck. It would be prescient for surgical oncologists to digest the chemoradiation chapters if they want to be prepared for impending environmental change.

All in all, this is a book packed with data giving glimpses of the future. It is a must for insomniacs.

Repair and Regeneration of Ligaments, Tendons and Joint Capsule

WILLIAM WALSH

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REVIEWER	George Bentley
STAR RATING	****

This is an excellent review of current knowledge and the possible advances that may be achieved in the management of common clinical problems arising from damage to ligaments, tendons and joint capsules. It is written by scientists and clinicians and its aim is to review the scientific and clinically relevant topics in the biology, biomechanics and surgical reconstruction of these tissues for a development of understanding to stimulate postgraduate research and also for resident training. Additionally, the chapters focusing on the shoulder, hand and knee are very significant for further research and the practice of sports medicine.

The book begins with an overview of tendon repair and regeneration, giving current knowledge of the pathologies

that occur, the normal healing responses and the factors that influence those responses. Specifically, there is recognition of the physical factors that may stimulate healing, in particular the biological modifiers such as growth factors and factor 5. The conclusion, which applies to all three tissues mentioned in the book, is that the injuries of these tissues are important, difficult to treat and costly. There also remain considerable challenges, especially in the exciting areas of growth factors and gene therapy, that should have a significant impact in future.

The chapters on basic science give a clear description of the fracture and microfracture of tendon, with some excellent illustrations of the ultrastructure and also comparisons of the structure of tendon, ligament and capsule. Mechanical properties are also analysed and the explanation of the cellular mechanisms by which energy is stored and transmitted to and from bones by the soft tissues for locomotion is extremely clear.

The special chapter on tendons of the hand includes the anatomical basis of management of tendon injuries, the surgery and the rehabilitation and particularly the interesting work on the inhibition of adhesions which have bedevilled hand surgery in the past.

In the intriguing chapter on shoulder ligaments, the authors indicate the complexity of the three glenohumeral ligaments and also point out that the anatomy of the acromio-clavicular and sterno-clavicular ligaments is well-developed but knowledge of the mechanics is lacking. A particular question is how the properties of shoulder ligaments are affected by age, pathological processes and types of treatment that could be developed to alleviate these complex pathologies or slow down age changes.

The chapter on the history of cruciate ligament repair is a succinct description of the development of repair techniques, in particular cautioning against the use of artificial materials rather than biological replacement by patellar tendon or hamstring grafts.

The rotator cuff presents different problems, especially that of degeneration with age and associated pain and disability. The authors indicate the value of conservative surgery by arthroscopy and the fact that simple debridement is much less successful in older patients. The main advantage of repairs of the rotator cuff is relief of pain rather than improvement in function although the absence of pain has a consequent beneficial effect on function. The problem of a degenerating cuff remains formidable.

The fascinating condition of frozen shoulder is described in detail including the natural history and the pathology. The authors indicate that research has been limited by the heterogeneous nature of the patient population. They emphasise the importance of arthroscopy in identifying

patients suitable for treatment and also for surgical research. The link between frozen shoulder and Dupuytren's disease relates to the predominance of fibroblast-type cells in the coracohumeral ligament, which leads to restriction of shoulder joint movement.

An interesting chapter on the current status of capsular shrinkage of the shoulder indicates that type 1 collagen is shortened by exposure to heat. Shortening achieved can be up to 50% of the original length of the capsule though more usually it is 15–20%. It is of interest that in one study thermal application by a 'paint' technique, where contiguous areas are treated (compared with the 'grid' technique, in which corridors of normal tissue were left untreated), led to areas of non-viable tissue in the 'paint' group, where the tissue was weaker and less stiff.

The section on research contains a fascinating description of the biomechanical and clinical evaluation of tendons and ligaments but the authors do point out that although the testing of ligaments and tendons is relatively easy in principle, the unique biological properties of the tissues make testing 'far from straight forward'.

It is of clinical interest that the augmentation of a free tendon graft with periosteal tissue is regarded as a promising technique to accelerate tendon-to-bone healing without the application of growth factors and has the advantage of having no side effects.

The chapter on artificial ligaments is a thoughtful analysis of the development of these ligaments, the materials involved, clinical indications and problems. It is quite apparent that the interior of the knee is a 'very demanding environment' in which to test new materials and that debris from artificial implants can cause adverse tissue reaction. Thus, the author concludes that artificial ligaments based on non-resorbable polymeric fibres will fail eventually.

This field is concluded by a good chapter on tendon and ligament fixation to bone, analysing the different devices which have been developed, emphasising that fixation of graft remains the weak link.

The final chapter is concerned with tissue engineering strategies for regeneration of the anterior cruciate ligament which could be expanded to involve other ligamentous or tendon or capsular structures. In this chapter, the delivery of growth factors in genes is intimated and laboratory research certainly implies that growth factors may enhance repair by increasing ligament fibroblast proliferation and matrix synthesis.

From the reader's point of view, this book is attractively laid out with excellent illustrations and with a very useful summary at the end of each chapter. I consider it to be a very significant contribution to the topic and it will be of great value as a source for scientists and clinicians alike.