MODULE 7

Skin & Integument

SKIN & INTEGUMENT

15.02.05

Preamble - Objectives and Outcomes

ALSO SEE OVERALL PREAMBLE (hypertext link on webpage)

At the time of presentation for the final FRACS examination the candidate should have a good understanding of all aspects of skin anatomy and pathology, wound healing and traumatic wound and burn management, grafts and flaps. Candidates particularly interested in burn management should proceed to Burns Fellowship.

The graduating trainee will demonstrate their ability to:

- Approach and carryout procedures with due attention to safety of patient, self, and others.
- Take a history, perform an examination, and arrive at a well-reasoned diagnosis
- Recognise the most common skin disorders and differentiate those amenable to operative and non-operative treatment
- Indicate alternatives in the process of interpreting investigations and in decision-making
- Plan, and were necessary implement, a risk management plan
- Manage patients in ways that demonstrate sensitivity to their physical, cultural, and psychological needs

In the following module the material required is presented under the headings of "Revisional Knowledge", "Core Knowledge" and "Outline Knowledge".

"Revisional Knowledge" should have been largely covered in the module for the Plastic & Reconstructive Surgical Science and Principles examination, but continued revision and updating throughout clinical training is mandatory.

"Core Knowledge" is the material, which will be required to be known in detail for the Final Fellowship examinations and to practice Plastic & Reconstructive Surgery in general.

"Outline Knowledge" is material of which the principles need to be understood, but a detailed knowledge, such that the trainee would be expected to manage the conditions on their own is not required.

Reading material will be presented, but cannot be all encompassing, nor can the material listed in the curriculum modules. Plastic & Reconstructive Surgery is an evolving and changing area and trainees are required to read widely in the literature and keep up with recent events.

Most topics within this module are allocated to one of the following largely "pathological" groupings

Coding Used:

A = Aesthetic
C = Congenital and Paediatric
I = Inflammatory and Infection
N = Neoplastic & Tumours
D = Degenerative Conditions
P = Procedures and Techniques
T = Trauma

A thorough grasp of the anatomy, physiology and pathophysiology is required for each topic.

Resources

Trainees should be exposed to a variety of consultants and departments to obtain a comprehensive understanding, approach and management of the skin and integument in both public and private hospital environments. This is a basic and key module, apart from developmental techniques in burn wound management, all material is core knowledge.

Recommended Reading

Specifically - Plastic Surgery - Indications, Complications and Outcomes - B Achauer, Editor, Mosby 2000, Volumes 1 - 5 as appropriate.

Suggested Reading

A thorough knowledge of the literature as it applies the skin and integument covered in Plastic and Reconstructive Surgery, British Journal of Plastic Surgery, Annals of Plastic Surgery, the "Burns Journals", together with other publications, articles, and booklets relative to the module.

Delivery of this Module

Trainees should be able to learn the material in this module by attendance at outpatient clinics, in the operating theatre, at ward rounds and audit meetings and by involvement in the peri-operative management of patients in the public and private setting. The Annual Registrars' Course is an important part of the exposure in this area, and where possible the trainee should attend courses and/or workshops on "flaps" and "burns" and it would be worthwhile attending the Annual Burns Society Meeting, as well as the Annual Scientific Congress of the Royal Australasian College of Surgeons.

Assessment Methods Used for this Module

- Consultant assessment and mentor reports throughout training.
- Report from the Supervisor of Surgical Training in their region.
- Log Book assessment review
- Final Fellowship Examination in Plastic & Reconstructive Surgery, including written questions, long and short case clinical examinations, vivas in surgical anatomy and applied anatomy, and operative surgery and pathology (7 parts).

Revisional Knowledge: Much of the basics in this will have already been covered in the Plastic and Reconstructive Surgical Science and Principles Examination. Trainees are required to be able to analyse and apply appropriately the science and principles of the following in clinical environments.

- History and evolution of grafts and flaps
- Biomechanics of skin and integument
- Wound healing and management
- Grafts – types, healing and management
- Pathological wound healing and scar management
- Tissue expansion
- Anatomy and physiology of the skin and microcirculations and angiogenesis
- Skin - types and racial variations
- Flaps – types, techniques, planning and management
- Pathology and clinical aspects of
  - Delay phenomenon
  - Flap failure and no re-flow
- Pathology of:
  - Skin Lesions – benign and malignant
  - Vascular anomalies
  - Cutaneous-infective, inflammatory and auto immune conditions
- Development and ageing of skin and integument
  - Normal
  - Abnormal / pathological
- Soft tissue trauma management
- Burn pathophysiology and wound management – local and systemic
- Sutures and suture techniques
- Dressings, drains, and splints
- Skin substitutes and tissue engineering
- Effects of radiotherapy, lasers, cryotherapy, cautery, sun exposure and hyperbaric therapy

Core Knowledge: A detailed knowledge and technical expertise is expected in the following areas. All trainees are required to be able to diagnose, plan, perform effectively, and manage:

- Clinical examination including dermatoscopy and biopsy techniques
- In detail, knowledge of wounds (including the operative and non-operative care of wounds), grafts and flaps including their types, classification, planning and management, including:
  - Grafts P
    - Split thickness, full thickness, composite, mesh P
  - Flaps - Local: P
    - Transposition, advancement, rotation P
  - Flaps - Distant: P
    - Pedicle and free, simple and complex / compound P
    - Single or multi-stages P
    - Prefabricated, Tissue Engineering P
    - Monitoring, care, and management of the flap, and the failing flap. P
- Understand the therapeutic and pathological effects of, and implications and management of, the effect of radiotherapy, lasers and intense pulse light, cryotherapy, cautery, sun exposure and hyperbaric therapy, steroids, topical chemo and immuno therapy. P
- Assessment, diagnosis and treatment of benign and malignant skin tumours, including the aetiology, pathophysiology, histopathology, and effect of immune suppression. N
- Classification, assessment, diagnosis, investigation and treatment of vascular anomalies including pathology. N
- Assessment, diagnosis, investigation and treatment of infective, inflammatory, and autoimmune conditions. I
- Assessment, diagnosis, classification, investigation, and treatment of Lymphoedema. D
- Assessment, diagnosis, classification, investigation, and treatment of non-malignant congenital and acquired conditions of the skin, eg neurofibromatosis, ectodermal hypoplasia, epidermolysis bullosa, pigmented skin conditions.
- Understanding of the embryology and development, both normal and pathological, of fat tissue.
  - Management and understanding of the effects of fat excess.
  - Management of Fat deposition by lipectomies and liposuction (all forms) P
- Assessment, diagnosis, investigation and management of specific areas of skin and integument loss
  - Especially 1) lower limb 2) head and neck 3) special sites. P
- Management of burns including thermal, electrical and chemical P
  - Assess burn wound injury including area, depth and specific areas P/T
  - Resuscitation, fluid and airway management, circulation, cerebral and alimentary effects T
  - Inhalation T
  - Management of specific areas eg. eyes, ears, lips, face and neck, feet, hands, perineum and joints T/P
  - Escharotomy – indications, sites, techniques, and limb monitoring T/P
  - Secondary reconstruction
    - general and specific areas P
    - aesthetic and functional aspects P
  - Skin substitutes and tissue engineering P
  - Psychiatric aspects – prevention, assessment, and management*
  - Burn wound management
    - Early versus delayed debridement T
    - Excisional techniques including tangential excision P
    - Grafting P
      - Auto graft, allograft* P
      - Skin substitutes (dermal and epidermal)* P
  - Nutritional effects T
  - Analgesia
  - Non-thermal burns – electrical and chemical - specific injuries and treatment. T
  - Infection I
    - risks, complications, avoidance and treatment –
    - local and systemic
  - Burns scar management T/P
  - Frostbite T

Outline Knowledge

A thorough knowledge, understanding, and surgical ability to treat all the points in the Core Area is expected. However, as Plastic and Reconstructive Surgery is an evolving and changing area, and practised differently in various centres, some areas may be assessed to an outline level of knowledge, i.e. the principles are required but not to the detailed knowledge such that a candidate would be in a position to manage the condition alone, although may be capable. Therefore, trainees are expected to be able to discuss the outline of management of topics in the core knowledge indicated by *