Teaching Clinical Surgery: A Personal View – Changes & Challenges

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Teaching Clinical Surgery

"If I have seen further, it is by standing on the shoulders of the giants"

- Isaac Newton

India	UK	Singapore
SK Sen	R. Sutton	SC Ong
KC Mahajan	R. Todd	WC Foong
	J. Dark	Seah CS
		Lim Pin

Peers/students

Teaching Clinical Surgery

- Under Graduate (UG)
- Post Graduate (PG)
  - Diagnosis
  - Natural history
  - Intervention (management)
  - Prognosis & follow-up

→ ***Challenges***

→ ***Changes***

"If we want things to stay as they are, things will have to change" *- The Leopard, CT de Lampadusa*

Teaching Clinical Surgery – UG: Diagnosis

- History & physical examination
  - Development & progress of disease
- Investigations
  - Confirmation & assessment
- Challenge:
  - understanding anatomical, physiological and pathological change giving rise to signs & symptoms
  - Time consuming: student & teacher
  - Constant reinforcement
  - Availability of clinical material

Teaching Clinical Surgery – UG: Natural History

- Knowledge
  - Texts
  - Notes
  - Journals etc.

"What the mind does not know, the eyes cannot see….."

- Challenge: motivate students to develop self learning habits
  - **Read, read, read!!!**

Teaching Clinical Surgery – UG: Intervention

- **Evidence**-based
  - Pre-, intra- and post-operative care
- Challenge
  - Not always possible
  - Understand total care of patient & disease process
  - Avoid compartmentalisation syndrome

Teaching Clinical Surgery – UG: Prognosis & Follow Up

- "How has the natural history been changed?"
  - Early, intermediate, late
- Challenge
  - Management does not stop with the in-hospital experience
  - Follow-up: short & long

Teaching Clinical Surgery – UG: Conclusions (1)

- Changes
  - Minimal didactic teaching
  - Small group teaching: bedside tutorials etc.
  - Early exposure to clinical medicine
  - “hands on” clinical attachment
  - Student internship

Teaching Clinical Surgery – UG: Conclusions (2)

- Challenges
  - Avoid teaching: too much, being too complex, technical aspects
  - Motivate to access clinical material
  - Develop empathy for the ill & terminal patient
  - Stimulate the inquiring mind

Teaching Clinical Surgery – PG (Residents)

- Diagnosis
- Natural history
- Interventions
- Progress & follow-up

Teaching Clinical Surgery – PG: Halstedian Preceptorship (1)

- Apprenticeship has been present since Hippocrates
- Formalised in Europe
- Refined in the USA by Halsted

"The orderly exposure of graduated clinical experience during several years under the tutelage of a dedicated senior surgeon."

- Challenge
  - Avoid "see one, do one, teach one" syndrome

Teaching Clinical Surgery – PG: Halstedian Preceptorship (2)

- Why change what has served us so well after 100 years?

"To err is human" – Not acceptable today

- Medical profession
  - Most surgical faults are preventable
  - Events related to system failure should be recognized & corrected
  - Demands of trainees: lifestyle, social, priorities, better teaching
- Society
  - Increasing public awareness
  - Demands of productivity by management
  - Increasing costs

Teaching Clinical Surgery – Recent Publications

- Just culture – Balancing safety and accountability. S. Dekker
- The field guide to understanding human error. S. Dekker
- The safety at the sharp end – A guide to non-technical skills. R. Finn et al
- Safety and ethics in health care – A guide to getting it right. B. Runciman et al
- Managing the risks of organizational accidents. J. Reason
- Improving health care team communication – Balancing the lessons from aviation and aerospace. C.R. Nemeth

Publishers: Aschget

Teaching Clinical Surgery – PG: Halstedian Preceptorship (3)

- Changing concepts of learning
  - Airline pilot training, experimental lab etc.
- Questions:
  - Do we not need 8-10 years of tutelage under a senior surgeon & possibly a further 2 years of fellowship to train a surgeon?
  - Do better skills translate to better surgeon (clinician)?
  - How do we teach ethics, empathy, communications skills etc.?
- Halstedian preceptorship has stood us well, but it has to be remodelled i.e. to include modern educational tools.

Teaching Clinical Surgery – PG: Diagnosis

- History
- Physical examination
- Investigations
- Challenges:
  - When to stop investigating
  - Rational use of complex, sophisticated & expensive investigations

  → E.g. does every acute appendicitis require an U/S CT scan for making a clinical decision?

Teaching Clinical Surgery – PG: Natural History

- Knowledge
  - More easily accessible → Internet
- Challenge
  - Clinical skills may not develop on par with knowledge
  - How do we teach "clinical acumen?"

→E.g. "This patient is not well"

"Something is not right with this patient"

Teaching Clinical Surgery – PG: Intervention

- Challenge:
  - How to apply evidence-based medicine to procedural choice?
  - → Always possible?
  - → Role of surgical intuition
  - → role of clinical experience
  - Multidisciplinary co-ordination in management

Teaching Clinical Surgery – PG: Procedural Skills (1)

- Lessons learnt from MAS
  - High rate of complications with introduction of laparoscopic cholecystectomy
- Challenge
  - **Technological advancements e.g.**

  → optical improvements, miniaturization, robotics

  → endoluminal surgery

  → Image-guided surgical navigation

  → Remote controlled robotics

  → Have to be learnt, knowledge transferred and applied to clinical situations with care & control
  - Development of clinical acumen at par with procedural skills

Teaching Clinical Surgery – PG: Procedural Skills (1)

“Technology comes before knowledge. Knowledge in turn, precedes wisdom.”

Teaching Clinical Surgery – PG: Procedural Skills (2)

D. Smith 2005

Teaching Clinical Surgery – PG: Pre-, Intra-, Post-operative Care

- Changes
  - Total care of patient
  - Communication skills
  - Develop empathy for patient problems
- Challenges
  - Difficult to teach and learn
  - Needs mentorship, supervision & exposure
  - Motivate continued self learning
  - “role model”

Teaching Clinical Surgery: Assessment (1)

- UG
  - Modular, continuous assessment of knowledge: MCQs, OSCEs, written, communications, ethics etc.
- PG
  - Mentorship: hopefully mentee will become better than mentor someday
  - Evaluation → procedural skills, technical knowledge, research – evaluable
    → clinical competence, administrative ability, leadership quality, communication skills
- Challenges: Mentorship (Role model)
  - More complex today
  - Difficulties → interpersonal skills, time management, prioritisation (personal & professional interests)

Teaching Clinical Surgery: Assessment (2)

- Challenges
  - Objectivity in evaluation
  - Seamless & continuous training & evaluation
  - Use of modern educational tools to effectively enhance knowledge
  - Multidisciplinary approach
- Ultimate “product”:
  - Technically skilful surgeon with good clinical judgement!!

Teaching Clinical Surgery: Surgical Specialties

- **Group A**: Recognised specialties (4-6 years)
  - Plastic
  - Eye
  - Neurosurgery
  - Paediatric
  - ENT
  - Orthopaedics (Hand)
  - Urology
  - Cardiothoracic
- **Group B**: General surgery (5+2 years)
  - Abdominal surgery: upper GI, lower GI (colorectal)
  - Hepatobiliary
  - Breast and endocrine
  - Vascular
  - Trauma (acute care surgery)

Teaching Clinical Surgery: Surgical Specialties

- *"To survive, we must subspecialise"*
- Challenges
  - How much time, if any, does Group A, require in General Surgery?
  - Does a breast surgeon really need 3-4 years in General Surgery before a breast fellowship?
  - How does one train a trauma surgeon?

    →"acute care surgery" – trauma, emergency & critical care
  - When should a subspecialty in Group B become a major specialty?

Teaching Clinical Surgery

- Ultimate observation to all (UG and PG) is to realise

“We heal sometimes, palliate often but may we comfort always”

- *The Tyranny of Pain*

THE END