Criteria for surgeons in general

Twelve criteria were identified by the occupational psychologists as important for surgeons in general. In order of importance these were:

(i) interpersonal skills
(ii) communication skills
(iii) responsibility & leadership skills
(iv) evaluative & analytical skills
(v) broad & balanced perspective
(vi) decision making skills
(vii) personal organizational skills
(viii) stress tolerance
(ix) self-motivation
(x) political awareness
(xi) self-insight & integrity
(xii) basic skills & abilities:
    (a) basic academic ability
    (b) technical competence (including manual dexterity, good eye/hand co-ordination, spatial skills, & capacity for focused & sustained attention).

BASIC SURGICAL SK ILLS:

Listen to everyone who will teach you, take nothing for granted or face value and learn to cultivate the best points of practice you see demonstrated . but , above all, use your skills, all mind and all your heart to care for those people who will inevitably seek your help in the years to come .

JainJ. Skinner

Principles of Basic Surgical skills

The Basic principles of wound management

Assessment of wounds

The pathology of wound healing

The surgical management of wounds

1- Assessment of wounds

Classification

A- Clean

1- Example: a- elective surgical
b- Hernia surgery
c- Breast biopsy

2- Comments:
a- Low wound infection rate approximately 2%
b- Routine primary closure

B- Contaminated-tidy

1- Cause:-
a- Low-relocity traumatic insicisions
b- Clean and sharp with local damage
c- Contamination minor and brief
d- Minor intraoperative contamination e.g. kichen knife/ clean glass cut, small bowel or bronchial tree opened introoperatively .

2- Comments:
a- Wound infection rate 1-5%

b- Routine primary closure after some debridement and irrigation

C- Contaminated – untidy

1- Cause:

a- Low velocity lacerating , tearing, or bursting wounds
b- Ragged and contused with gross local damage
c- Contamination apparent and prolonged
d- Major operative contamination
e- All high-relocity injuries

e.g.

a- Crush injuries

b-garden tool injuries

c-bullet wounds

d-large bowel, infected bronchial tree or infected urinary tract opened intraoperatively

Comments:

Wound infection rate 5-25% may be closed after wide debridement and copious irrigation or may require delayed primary closure

4-Dirty/ infected

A- Cause:-

1- Wounds with signs of infection such as erythema, cellulitis or pus
2- Grossly contaminated wounds
3- More than 12 hours after injury
4- Severe tissue damage and excessive ischaemic tissue

B- Examples:

1- Severe crush injuries
2- Penetrating abdominal trauma with hollow visceral perforation
3- War wounds
4- Cloth, shrapnel , faeses etc. in wound

C- Comments:

1- Wound infection rate near to 50% if the wound is closed
2- May be closable after total excision or wide debridement and copious irrigation but often requires healing by delayed primary closure or secondary intention.

Pathology of wound healing
wound healing:

The repair of any soft tissue relies on:-

- The body generating capillaries and collagen on both sides of the wound
- This collagen cross- linting with wound- edge collagen and new collagen
- The wound contracting in size
- The unaligned cross- linked collagen mataning into regularly arranged bundles (a scas) to provide the health wound with strength
- Epithelial groth across the defect

Factor affecting wound healing :-

A- Local

1- Ischaemia
2- Tension
3- Dead space
4- Foreign bodies/ contamination
5- Wound infection
6- Haematoma
7- Chronic tissue factors
8- Local trauma
9- Sutures
10- Irradiation

B- General factors:

Age/ comorbidity , e.g. diabetes, renal failure

Anaemia/ blood loss

Shock, hypovolaemia/ hypoxia

Malnutrition – Micronutrient & protein

Major infection / Septicaemia

Advanced malignancy

Steroid use

C- Technical factors
1- Wound evaluation skills
2- Surgical techniques

1- Wound evaluation skills
    a- Ascertain the mechanism of injury
    b- Examine the wound site
    c- Decide on the wound repair
2- Surgical Techniques
    a- Before repair
        Closure
            Primary
            Delayed primary
            Secondary closure
        Criteria for seeking expert and assessment of wound

    a- Inexperience
    b- Large skin loss
    c- Demonstrated deep structure injury
    d- Suspected or potential deep structure injury
    e- Large or complicated wound
    f- Type 3 or type 4 wound
    g- Inadequate facilities for repair
    h- Adverse factors
        Local
        General
        Technical

Rehabilitation required

2-Explanation and consent four main areas should be discussed:

The alternative to your treatment plan

The benefits of your treatment plan

The risks of both your treatment plan and alternative plans

3- Factors in wound management

a- Antimicrobials

Antibiotics

Tetanus prophylaxis

b- Anesthesia

c- Haemostasis

d- Debridement and irrigation

e- Wound closure

Method

Materials

f- Immoblization

4- Dressings and splints:

a- Adhesive strips used to take tension off the skin and aid in opposition

b- Dressing should be non- adherent e.g. talle gras with gauze over the dressings

D- Splinting of wound

- If:

  Tendons

  Neurovascular tissue

  Bones

- Splintes

  Plaster slab

  Cast

  Padded aluminium splints.

- Bandage sizes for body parts

  Finger / hand 2.5 cm

  Wrist / forearm 5.0 cm

Upper arm / calf	7.5 cm
Thigh	10.15 cm
Head	10-15 cm

After repair . the discharge from emergency:

a- Provision of slings or crutches
b- Prescription of antibiotic
Analgesic
c- Arrongements for follow up & rehabilitation
d- Best posturing and allowed movements
e- Normal eourse of healing & varients to be expected during this time
f- Problems to return for, and who to consult also need to be discussed
g- Appropriate work certificates should be provided at this time

Surgical instruments and their use:

1- Cutting instruments
   a- Scalpels
   b- Scissors
   c- Other cutting instruments.

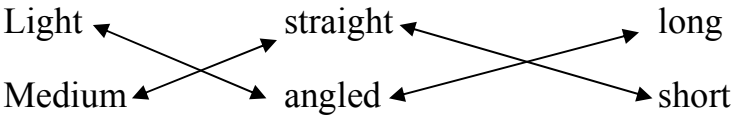
A- Scalpels :

- Recent one, two piece
  Permanent handle
  Disposable blade
- Used for deliberate and precise division of structures with the minimum trauma to surrounding tissue
- Variety of blades and handles
- Not used on metal or bone
- The whole length of the blade, not just the tip, should be employed in cutting and it should always be held at go to the skin surface.
- The ease of cutting with a scalpe is one of its great prob;ems
- Inappropriate assessment of a situation may lead to the incision or division of a vital structure (e.g. peripheral nerve)
- Some simple rules to minimize this risk:-
  1- Do not cut anything that cannot actually be seen
  2- It the tissue to be divided is superficial to a vital structure, insert an instrument or cutting guide between then

3- If dissecting near a known structure (e.g. nerve or vessel) cut in the line of the structure to prevent dividing it accidentally
4- Plan (and mark) your incisions and practice the cut in the air first
5- If cutting is in deep cavity time spent improving the access and exposure equates to time saved repairing a potentiall error.

B- Scissors:

1- Are used to cut tissues during many parts of the dissection process
2- Are produced in both sharp-pointed and blunt-ended verities
3- The most commonly used in general surgery is blunt-ended
4- Other varieties include.



Heavy gnage curved blades

5- Used for cutting
6- Scissors may also be used to dissect
7- Many styles of scissors are designed for the right hand
8- Types of scissors
    - Dissecting scissors, rounded points on both blades and are the most commonly used scissors in general surgery e.g. fine scissors metzenbaum's scissors. Heavy scissors Myo scissors; short variey Dubois or golighers; long
    - Other scissors
    - Suture scissors e.g. Ferguson's anyled straight mayo nurses scissors
    - Dressing and general purpose scissors
    - Straight bladed Myo's scissors nurses scissors
    - Vascular scissors Pott's angled scissors.

C- Other cutting instruments

1- Skin graft knife
    a- Several variations in size shape & complexity
    b- Single –sided razor blade to large electric skin graft harvester (dermatoma)
    c- Hamby knife
    d- Watson modification of Hamby knife

2- Bone cutters / nibblers used by
Orthopedic surgeons
Neurosurgeon
Thoracic surgeon
Vascular surgeon
Plastic surgeon

To resects bone

Eithe have scissor

Like blades or scalloped cups

3- Periosteal elevator lifts the periosteum
4- Curette
Shaped essentially like a scoop
Used to clean out cavities by scraping away their contents e.g. abscesses
Friable infected bone segments & uterus

Grasping instruments

- Forcep ; is the generic name given to any instrument that is used to grasp or hold
- Forceps may be:-
  - Hand –held (like tweezers)
  - Scissor pattern with or without rachet
- Forceps may be used to :-
  Grasp tissues
  Needles
  Sutures
  Or even other instruments
- Forceps are classified to :-
  1- Tissue forceps
  2- Vascular forceps
  3- Needle – holding forceps
  4- Other grasping forceps.

1- Tissue forceps:
a- Basic purpose ; - to grasp tissue in minimally traumatic manner

-For stabilization for retraction

b- Two basic designs:-

hand –held pattern

scissor pattern

c-To grip these instruments chopstick or perihandling grip is employed

d-hand-held (thumb) forceps

- Used for manipulation of viscera or soft tissues during the active phases of a procedure such as dissecting or suturing
- They may be short , medium or long in size
- Their hands may be toothed or non toothed.

Toothed Forceps:

- Used for skin stabilization for fascia and muscle handing during the process of suturing
- Presence of teeth, makes the grip required
- Number of teeth 1*2 or 2*3
- Examples

  Small, Adson forcep 1*2 teath

  - Fine
  - Used in plastic surgery

  Medium :

  - Gillies forceps 1*2 teath
  - Used for any type of skin

Non –toothed forceps:

Two basic patterns:

1- Has no teeth , only ridges or grooves e.g. dressing forceps
2- Has interloking longitudinal rows of teeth, very small are described as Debakey forcep; cardiovascular