

1) Preoperative Preparation - Dr. Hiwa

- Convergence of the art and science of the surgical discipline
- In outpatient office visit to hospital inpatient

Approaches to preoperative evaluation differ significantly, depending on the:

1. nature of the complaint
2. the proposed surgical intervention
3. patient health
4. assessment of risk factors
5. the results of directed investigation
6. interventions to optimize the patient's overall status
7. readiness for surgery

Determining the Need for Surgery

- Confirmation of relevant physical findings and review of the clinical history and laboratory and investigative tests that support the diagnosis.

Perioperative Decision Making

- Once the decision has been made to proceed with operative management, a number of considerations must be addressed regarding the
 1. timing and site of surgery
 2. the type of anesthesia
 3. the preoperative preparation necessary to understand the patient's risk and optimize the outcome.

Preoperative Evaluation

- The aim is to identify and quantify any comorbidity that may have an impact on the operative outcome. The goal is to uncover problem areas that may require further investigation or be amenable to preoperative optimization. The preoperative evaluation is determined in light of the
 1. *planned procedure* (low, medium, or high risk)
 2. *planned anesthetic technique*
 3. the *postoperative disposition of the patient* (outpatient or inpatient, ward bed, or intensive care)
 4. to identify patient risk factors for *postoperative morbidity and mortality*
- Consultation with an internist or medical subspecialist may be required to facilitate the workup and direct management. In this process, communication between the surgeon and consultants is essential to define realistic goals for this optimization process and to expedite surgical management.

The aim of a preoperative evaluation

To assess the fitness of the individual for anesthesia and surgery. A well-conducted history and physical examination answer several important questions:

- Is this a healthy patient?
- What is the indication for surgery?
- Is the surgical procedure low risk, intermediate risk, or high risk?
- What is the functional status of the patient?
- What is the effect of the present condition on the patient?
- What improvement is expected after surgery?

Answers to these questions should then direct preoperative testing and management.

- The tests selected should therefore evaluate existing illness, screen for conditions that could affect outcomes in the perioperative period, and help to determine perioperative risks.
- Existing illnesses that need evaluation and possible treatment include hypertension, diabetes mellitus, cardiac, vascular, pulmonary, renal, and hepatic diseases.
- The pregnant patient, the geriatric patient, the patient with oncologic disease, malnutrition, or coagulation disorders also needs directed evaluations.

The Healthy Patient

- The initial preoperative evaluation of a patient should be supplemented by a complete assessment of the patient's general health. This involves a thorough:
 - History
 - Physical examination
 - Investigations
 1. Complete blood counts
 2. Blood urea and electrolytes
 3. An electrocardiogram (ECG) is indicated over 40 years
 4. Posteroanterior and lateral chest x-rays
 5. Hb %
 6. GUE
- The history should include information regarding any known medical problems and ongoing treatment, previous surgical procedures, and problems if any during previous anesthesia. These can include difficult intubation, bleeding tendencies, and anesthetic jaundice.
- Family history of problems during anesthesia or surgery should be obtained. These can make the anesthesiologist aware of potential problems such as malignant hyperthermia, bleeding tendencies, or thrombophilia.
- In addition to routine information about family history, a strong family history of allergies should alert the surgeon to the possibility of hypersensitivity to drugs.
- An exhaustive history of drug allergies, sensitivities, and current or recently taken medications should be obtained. Medications such as digitalis, insulin, and corticosteroids should be maintained and their doses carefully regulated in the perioperative period.
- If the patient is on corticosteroids or if it has been discontinued within a month of surgery, he or she may have a hypofunctioning adrenal cortex resulting in impaired physiologic response to surgical stress.

What is informed consent?

To be able to make a considered choice about what is in their personal interests - they must receive sufficient accurate information about their illness, the proposed treatment and its prognosis.

1. Describe the procedure itself, including information about its practical implications and probable prognosis.
2. Reveal the probability of specific associated risks or complications.
3. Do not assume that the patient already knows the risks of other aspects of the proposed surgical procedure, such as the complications that might result from a general anaesthetic, bed rest, intravenous fluids or a catheter.
4. Outline other surgical or medical alternatives to the proposed treatment, including non-treatment, along with their general advantages and disadvantages.

Good consenting practice

1. As much as possible, ensure that the physical surroundings during the discussion between you and your patient are conducive to easy, quiet conversation.
2. Use the simplest possible language, avoiding needless technicalities. Appropriate leaflets or booklets can be helpful, as is innovative work using audio recording of interviews; patients can be encouraged to take the recording home to discuss with others.
3. Having attempted to provide clear information, now determine whether or not the patient has actually understood it.

Routine Preoperative Preparation

Evaluation

1. Take a full history and exclude any significant medical problems
2. Check clinical signs against the planned surgical procedure, in particular noting the side involved. Confirm that the planned operative procedure is appropriate.
3. Take a full drug history with specific enquiry regarding allergic responses to drugs, latex and skin allergies. Continue medication over the perioperative period, especially drugs for hypertension, ischemic heart disease and bronchodilators. Give patients on oral steroid therapy intravenous hydrocortisone. Stop oral warfarin anticoagulation 3 days preoperatively and check the prothrombin time prior to surgery. Patients taking aspirin or other antiplatelet medication (e.g. clopidogrel) may have an increased risk of bleeding; stop these drugs for at least 48 h preoperatively for major surgery. Stop drugs, over the perioperative period that may interfere with anesthetic agents, including monoamine oxidase inhibitors, lithium, tricyclic antidepressants and phenothiazines. If possible, stop the oral contraceptive pill 4 weeks prior to any major surgery. Postmenopausal patients on hormone replacement therapy do not need to have their medication stopped before an operation.
4. There is a clear correlation between malnutrition in the preoperative period and an increased morbidity and mortality from surgery.
5. Young and fit patients undergoing minor procedures do not require any preoperative investigations. In older patients or those with significant medical problems, standard investigation would include a full blood count, urea and electrolytes, chest X-ray and electrocardiogram.

Routine preoperative measures

1. Adhere to the protocol followed by your firm
2. Prohibit solid diet to adult patients for 6 h, and clear fluids for 4 h, prior to an elective general anaesthetic. Fasting times for children vary in different hospitals and they are also age dependent.
 - Babies under 1 year
 - i. No breast milk for 2-3 h before anesthesia
 - ii. No formula feed for 6 h before anesthesia
 - iii. Clear fluids may be given up to 3 h before anesthesia
 - Children over 1 year
 - i. No food/milk for 6 h before anesthesia
 - ii. Clear fluids up to 3 h before anesthesia
3. The operation site must be prepared by the removal of hair, if this is necessary for access, using a depilatory cream. Shaving or clipping hair from the operation site increases the risk of infection, unless the skin preparation is carried out immediately prior to surgery.
4. Mark a unilateral operation site on the skin with an indelible marker pen.

5. Explain to the patient (or guardian) the procedure and any likely complications, answer questions the patient may have, and only then have them sign the consent form. If you are unable to answer the patient's questions, seek help from a senior colleague.
6. *It is good practice for the operating surgeon to obtain the patient's consent; not immediately before an operation but some time ahead, so that they may have a period of reflection, and an opportunity to ask further questions that may arise.*
7. *Antibiotic administration* is guided by the surgical procedure involved and is discussed below, as is prophylaxis against deep vein thrombosis.
8. If *specific services*, such as frozen section histopathology or intraoperative radiography are likely to be required during the operation, organize these in advance.
9. *Prophylaxis against deep vein thrombosis and pulmonary emboli*
 - Pulmonary emboli are a major cause of mortality for surgical patients, accounting for 10% of inpatient deaths in the United Kingdom.
 - Recent operation, immobilization and trauma were responsible for 50% of deep vein thrombosis (DVT) in a review by Cogo et al (1994), but there are other important predisposing factors, such as the high estrogen content oral contraceptive pill, and significant obesity .
 - Many risk factors cannot be avoided, but take measures to avoid propagation of any thrombosis:
 - *Subcutaneous heparin may reduce the incidence of DVT by 50%*; it is generally well tolerated. Systemic anticoagulation effects of low dose subcutaneous heparin are minimal and hemostasis is not impaired.
 - Newer low molecular weight heparins (LMWHs), as effective as standard heparin, need only once a day dosage.

Risk factors for deep vein thrombosis

- Recent surgery, Immobilization
- Trauma, Oral contraceptive pill
- Obesity, Heart failure
- Arteriopathy, Cancer
- Age > 60 years

ASA classification

- I. Normal healthy patient
- II. Patient with mild systemic disease
- III. Patient with severe systemic disease that limits activity but is not incapacitating
- IV. Patient who has incapacitating disease that is a constant threat to life
- V. Moribund patient not expected to survive 24 hours with or without an operation

Levels of Risk for Thromboembolism in Surgical Patients Without Prophylaxis and Successful Prevention Strategies

LEVEL OF RISK	DEFINITION OF RISK LEVEL	CALF DVT (%)	PROXIMAL DVT (%)	CLINICAL PE (%)	FATAL PE (%)	PREVENTION STRATEGY
Low	Minor surgery in patients < 40 yr with no additional risk factors	2	0.5	0.2	0.02	No specific measures Aggressive mobilization
Moderate	Minor surgery in patients with additional risk factors; nonmajor surgery in patients 40-60 yr with no additional risk factors; major surgery in patients < 40 yr with no additional risk factors	10-20	2-5	1-2	0.1-0.5	LDUH q12h, LMWH, ES, or IPC
	High	10-20	2-5	1-2	0.1-0.5	LDUH q12h, LMWH, or IPC
	Highest	10-20	2-5	1-2	0.1-0.5	LMWH, oral anticoagulants, IPC/ES+LDUH/LMWH or ADH