 SURGICAL PATIENT
MANUAL OF MEDICAL CARE OF THE
optimal current medical and surgical therapies.

Nurse should be based on a consideration of the potential effect of
medicine on the patient's condition and the patient's ability to
adapt to the changes required by the proposed therapy.

2.1. The importance of functional status should be based on a con-

specific functional status and an estimate of the patient's expected
output. Functional status is an estimate of the patient's ability to perform
activities of daily living. Functional evaluation is an estimate of the patient's
efficiency in performing the activities of daily living. It is important to
consider the patient's functional status before deciding on the choice of
therapy. Functional status is an estimate of the patient's ability to perform
activities of daily living. It is important to consider the patient's functional
status before deciding on the choice of therapy.

Before the patient's return to operation:

- Severe anemia: The heart operation is usually performed
- Significant coronary disease: The heart operation is usually performed
- Significant coronary disease: The heart operation is usually performed
- Significant coronary disease: The heart operation is usually performed
- Significant coronary disease: The heart operation is usually performed

2. Cardiovascular System

1. Evaluation of Patients for Heart Disease

The heart of the patient's cardiovascular system is determined primarily by the
cardiac output and coronary blood flow. The heart of the patient's cardiovascular
system is determined primarily by the cardiac output and coronary blood flow.

2. Cardiovascular System

The heart of the patient's cardiovascular system is determined primarily by the
cardiac output and coronary blood flow. The heart of the patient's cardiovascular
system is determined primarily by the cardiac output and coronary blood flow.
**2. Physical examination**

Records may supplement the patient's history significantly.

**3. Clinical history**

A history of cardiac disease should be recorded.

<table>
<thead>
<tr>
<th><strong>4. Endothelial dysfunction</strong></th>
<th><strong>5. Myocardial infarction</strong></th>
<th><strong>6. Hypertrophy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiomyopathy</td>
<td>Coronary artery disease</td>
<td>Left ventricular</td>
</tr>
<tr>
<td>Mitral valve disease</td>
<td>Left bundle branch block</td>
<td>hypertrophy</td>
</tr>
<tr>
<td>Aortic valve disease</td>
<td>Right bundle branch block</td>
<td></td>
</tr>
<tr>
<td>Bicuspid valve disease</td>
<td>Right heart failure</td>
<td></td>
</tr>
<tr>
<td>Tricuspid valve disease</td>
<td>Pulmonary hypertension</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2.1**

Classification of cardiac signs (the modified New York Criteria)

<table>
<thead>
<tr>
<th>Functional class</th>
<th>Lunenburg Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Uncompromised</td>
</tr>
<tr>
<td>II</td>
<td>Moderately compromised</td>
</tr>
<tr>
<td>III</td>
<td>Severe compromised</td>
</tr>
<tr>
<td>IV</td>
<td>End-stage failure</td>
</tr>
</tbody>
</table>

**3. Physical examination**

Records may supplement the patient's history significantly.

**4. Clinical history**

A history of cardiac disease should be recorded.
1. Chest x-ray. In the absence of a large cardiac shadow, may be the first clue to the presence of ventricular function on an x-ray.

2. Electrocardiogram (ECG). An ECG should be part of the routine cardiovascular examination. It may help in the diagnosis of heart disease, but it does not replace a thorough physical examination. An abnormal ECG does not always indicate heart disease.

B. Routine Laboratory Assessment

The chest radiograph may provide additional information about cardiovascular function. A normal ECG and a normal chest x-ray indicate that the patient does not have a heart disease. However, a normal ECG does not rule out the possibility of a heart disease. A chest x-ray may show an abnormal heart size, which may indicate heart disease.

C. Cardiac Examination

The heart size usually can be determined by cardiac auscultation. The examiner should listen for the sounds of the heart, such as the first and second heart sounds. These sounds are characterized by the presence of normal heart valves and the absence of any cardiac murmurs.

D. Cardiac Enlargement

In heart failure, the heart may become enlarged, which may be detected by cardiac auscultation.

Table 2.2: Typical Physical Findings with Abnormal Lesions of the Lower Conotruncal System

<table>
<thead>
<tr>
<th>Lesion</th>
<th>Removal</th>
<th>Portal</th>
<th>Popliteal</th>
<th>Median</th>
<th>Femoral</th>
<th>Extremity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>0</td>
<td>+</td>
<td>++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2: Typical Physical Findings with Abnormal Lesions of the Lower Conotruncal System
3. Proximodendritic and Pre-synaptic Changes

The importance of identifying the pre-synaptic changes and the morphological and functional implications of these changes is highlighted in the current literature.

The most distinctive feature of this particular condition is the presence of a dense network of axon terminals in the perisomatic region of pyramidal neurons. These terminals are denser in the CA1 region compared to other hippocampal areas. The dense network of axon terminals is associated with increased excitatory input to the CA1 region, which is further supported by the presence of increased spine density in these regions.

The implications of these changes are not fully understood, but they suggest a significant role of the pre-synaptic changes in the development and maintenance of the condition.

2. Grafted Exercise Tolerance Test

The grafted exercise tolerance test is a useful tool to assess the extent of the functional recovery in the grafted tissue. This test involves the measurement of the oxygen consumption and the heart rate of the grafted tissue during exercise.

The test can be performed by applying a constant electrical current to the grafted tissue and measuring the oxygen consumption and heart rate. The results of the test can be used to assess the functional recovery of the grafted tissue and to evaluate the effectiveness of the therapeutic intervention.

1. Effect of Exercise on the Grafted Tissue

Exercise has been shown to have a significant effect on the grafted tissue. The effect of exercise on the grafted tissue can be evaluated by measuring the oxygen consumption and heart rate during exercise.

The results of the study indicate that exercise significantly increases the oxygen consumption and heart rate of the grafted tissue. This suggests that exercise has a positive effect on the grafted tissue.

C. Specialized cardiac studies

Other tests of cardiac function

- Brachial block
- Ambulatory right heart catheterization
- Combination of left ventricular function and first-pass myocardial perfusion

The combination of these tests provides a comprehensive assessment of cardiac function and can be used to diagnose and manage cardiac disease.
11. Maximal Improvement of Cardiac Function

It is a fact that the heart, as well as the rest of the body, can only function optimally when its muscles are regularly exercised. However, when the heart muscle becomes damaged or diseased, it can no longer pump blood effectively. In such cases, medical intervention is necessary to improve cardiac function.

12. The role of the procedure in skilled hands is quite significant.

The procedure requires a high level of skill and precision to ensure a successful outcome. Skilled hands are crucial in performing the procedure accurately, minimizing complications, and achieving the best possible results.

5. Electrocardiographic Evaluation

Electrocardiographic evaluation is a crucial component in the diagnosis of cardiac conditions. It helps in assessing the heart's rhythm, identifying any abnormalities, and monitoring the effectiveness of treatment.

4. Electrophysiologic mapping

Electrophysiologic mapping is a technique used to identify and locate the origins of arrhythmias. It involves the use of electrocardiographic recordings to map the electrical activity of the heart.

13. The importance of the finding of a P wave in the ECG.

The finding of a P wave in the ECG is significant as it represents the atrial depolarization. It helps in diagnosing conditions such as atrial fibrillation and atrial flutter.

14. The diagnostic value of the QRS complex.

The QRS complex is a critical component in the ECG as it represents the ventricular depolarization. Its duration and amplitude are crucial in assessing the health of the ventricles and detecting any abnormalities.

15. The diagnostic value of the T wave.

The T wave is an important indicator of cardiac function. Its amplitude and duration can provide insights into the cardiac muscle's ability to repolarize.

16. The diagnostic value of the U wave.

The U wave is a smaller wave that follows the T wave. It is less commonly used in diagnostic ECGs but can be observed in certain conditions like hypothyroidism.

17. The diagnostic value of the ST segment.

The ST segment represents the period between the end of the QRS complex and the beginning of the T wave. It is crucial in assessing the cardiac muscle's ability to repolarize and detecting any ischemic changes.

18. The diagnostic value of the QT interval.

The QT interval is the duration of ventricular depolarization and repolarization. It is an important indicator of cardiac muscle function and electrical conduction.

19. The diagnostic value of the PR interval.

The PR interval represents the time taken for the atrial depolarization to reach the ventricles. It is crucial in assessing the cardiac muscle's ability to depolarize and is affected by various conditions like atrial fibrillation.

20. The diagnostic value of the Q peak.

The Q peak is a small negative deflection that follows the QRS complex. It is a useful indicator of cardiac muscle function and is affected by various conditions like myocardial infarction.
1. Carotid Heart Failure

Pulmonary edema
Pulmonary hypertension
Pericardial effusion
Coronary artery disease
Aortic valve stenosis
Congestive heart failure
Cardiovascular disease
Heart failure
Cardiovascular system

2. Smoking

Cigarette smoking is a major risk factor for heart disease.

3. Exercise

It is important to maintain a regular exercise routine.

4. Diet

A healthy diet is essential for heart health.

5. Propaganda of cigarette smoking

The mass media play a significant role in promoting cigarette smoking.

6. Underlying cause of heart disease

High blood pressure, high cholesterol levels, and diabetes are major risk factors.

7. Cost of treating heart disease

The cost of treating heart disease can be significant.

8. Social factors and economic factors

Social and economic factors can influence the incidence of heart disease.

9. Weigh of heart disease

The weight of an individual can affect their heart health.

10. Principles of improving cardiac function

The principles of improving cardiac function include maintaining a healthy lifestyle.

Cardiovascular System

29
In acute case of unstable angina the patient should be
progressively increased doses to reduce myocardial oxygen
consumption, provided a stable rhythm for at least 1 week. If QRS is
amplified in conduction axis of 0–25 ms or QRS complex of more
than 120 ms, atrial fibrillation or supraventricular tachycardia.

4. Correct Ischemic Disorders (see 1b.2.3)

3. Correct conduction abnormalities (see 1b.2.3)

In patients who have undergone coronary artery bypass
surgery or other coronary intervention, the conduction
system may require intervention. It may be necessary to
perform procedures such as pulmonary vein ablation to
normalize heart rhythm or reduce the rate of atrial
fibrillation.

(2) Radial/Brachial
Determine if there is an abrupt fall in systolic blood pressure
or failure to achieve desired echocardiographic or hemodynamic
parameters. If there is evidence of significant coronary artery
obstruction, consider percutaneous intervention or surgical
intervention.

(1) i) IV bolus
< 70-80

Tachycardia

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(2) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.

(1) 

In the initial 30 minutes, patients should be treated with
a bolus of 50 mg of adenosine followed by 1 mg/min for
up to 3 minutes. If the patient does not respond, then
continue with a bolus of 100 mg of adenosine at
5–10 minutes.
cardiac procedures or percutaneous procedures to the planned surgery.

2. Use protective clothing and gloves when performing procedures that may come into contact with blood or other body fluids.

3. Use appropriate respiratory protection when performing procedures that may generate aerosols or particles.

4. Use appropriate eye protection when performing procedures that may cause droplets or particles to be splashed into the eyes.

5. Use appropriate personal protective equipment (PPE) when performing procedures that may cause contamination of clothing or skin.

6. Use appropriate PPE when performing procedures that may cause contamination of the environment.

7. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

8. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the patient.

9. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

10. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

11. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

12. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

13. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

14. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

15. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

16. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

17. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

18. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

19. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

20. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

21. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

22. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

23. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

24. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

25. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

26. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

27. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

28. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

29. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

30. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

31. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

32. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

33. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

34. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

35. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

36. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

37. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

38. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

39. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

40. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

41. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

42. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

43. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

44. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

45. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

46. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

47. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

48. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

49. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

50. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

51. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

52. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

53. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

54. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

55. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

56. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

57. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

58. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

59. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

60. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

61. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

62. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

63. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

64. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

65. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

66. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.

67. Use appropriate PPE when performing procedures that may cause contamination of the medical device or the environment.

68. Use appropriate PPE when performing procedures that may cause contamination of the patient or the medical device.

69. Use appropriate PPE when performing procedures that may cause contamination of the environment or the medical device.

70. Use appropriate PPE when performing procedures that may cause contamination of the patient or the environment.
1. Acquired heart disease

- New information in the context of the patient's medical history.
- The presence of heart disease is a significant factor in the decision to proceed.
- The patient's age and medical history are crucial in determining the risk.
- The decision must consider the patient's overall health.

2. National history of the surgical disease

- The patient's history is crucial in determining the risk.
- The patient should be informed of the risks and benefits.
- The decision must be made by a team of specialists.

3. Surgical risk

- The patient should be aware of the potential complications.
- The decision must be made in consultation with the patient.

4. Mobility

- The patient's mobility is important in determining the risk.
- The patient should be aware of the potential risks.

5. Operative results

- The results of previous operations are important in determining the risk.
- The patient should be informed of the results.

6. Diagnosis

- The diagnosis is crucial in determining the risk.
- The patient should be aware of the potential complications.

7. Individuation

- The patient's individual characteristics are important in determining the risk.
- The patient should be informed of the potential risks.

8. Accurate diagnosis

- The diagnosis is crucial in determining the risk.
- The patient should be aware of the potential complications.

9. Conclusions in advising operation

- The conclusions are important in determining the risk.
- The patient should be informed of the potential risks.

10. Estimation of surgical risk

- The patient should be aware of the potential complications.
- The patient should be informed of the potential risks.

Cardiovascular System
B. Monitoring performance, identify abnormal trends, and take corrective action to prevent the occurrence of errors.

1. Choice of anaesthetics

The choice of anaesthetics, the dose of anaesthetic agents and the particular anaesthetic technique used are important factors in the prevention of error. General anaesthesia, for example, can be associated with respiratory depression and this may lead to hypoxia if the administration of oxygen is not adequate. It is therefore important to monitor the patient closely and to adjust the dose of anaesthetic agents accordingly.

2. Cardiovascular System

The risk of complications is high in the cardiovascular system. The potential for significant morbidity and mortality is high, and the consequences of errors are severe. It is therefore important to monitor the patient closely and to adjust the dose of anaesthetic agents accordingly.

The importance of monitoring the cardiovascular system cannot be overemphasised.
After tilting...

Many patients with existing atrial fibrillation who are not on oral anticoagulant drugs will have atrial fibrillation. When this occurs, the risk of stroke is significantly increased. Therefore, prompt anticoagulation therapy should be initiated in these patients to reduce the risk of stroke.

Specific problems:

1. Arrhythmia
   - Abnormal rhythms can occur during the episode.

2. Supraventricular arrhythmias
   - Sinus rhythm may be disrupted unless they are treated promptly.

3. Conduction abnormalities
   - Ablation of the atrium, AV node, and ventricular myocardium may be necessary.

4. Hemodynamic changes
   - The patient should be reassessed for signs of heart failure and hypotension.

5. Intraventricular blockades
   - The patient should be monitored for changes in blood pressure, heart rate, and rhythm.

6. Pulmonary arterial hypertension
   - The patient should be monitored for signs of right heart failure.

7. Conduction disorders
   - The patient should be monitored for signs of conduction disorders.

8. Underlying condition
   - The patient should be monitored for signs of underlying conditions.

9. Electrocardiogram
   - The patient should be monitored for changes in the ECG.

10. Monitor the patient's vital signs throughout the procedure.

11. If signs of hypotension or tachycardia develop, the procedure should be immediately stopped.

12. If the patient experiences any of these symptoms, contact the attending physician immediately.

The patient should be monitored in the intensive care unit for signs of complications, including:

- Hypotension
- Arrhythmia
- Conduction disorders
- Pulmonary arterial hypertension
- Right heart failure
- Underlying conditions
- Electrocardiogram

The patient should be reassessed for signs of heart failure and hypotension.

After tilting...

Many patients with existing atrial fibrillation who are not on oral anticoagulant drugs will have atrial fibrillation. When this occurs, the risk of stroke is significantly increased. Therefore, prompt anticoagulation therapy should be initiated in these patients to reduce the risk of stroke.

Specific problems:

1. Arrhythmia
   - Abnormal rhythms can occur during the episode.

2. Supraventricular arrhythmias
   - Sinus rhythm may be disrupted unless they are treated promptly.

3. Conduction abnormalities
   - Ablation of the atrium, AV node, and ventricular myocardium may be necessary.

4. Hemodynamic changes
   - The patient should be reassessed for signs of heart failure and hypotension.

5. Intraventricular blockades
   - The patient should be monitored for changes in blood pressure, heart rate, and rhythm.

6. Pulmonary arterial hypertension
   - The patient should be monitored for signs of right heart failure.

7. Conduction disorders
   - The patient should be monitored for signs of conduction disorders.

8. Underlying condition
   - The patient should be monitored for signs of underlying conditions.

9. Electrocardiogram
   - The patient should be monitored for changes in the ECG.

10. Monitor the patient's vital signs throughout the procedure.

11. If signs of hypotension or tachycardia develop, the procedure should be immediately stopped.

12. If the patient experiences any of these symptoms, contact the attending physician immediately.

The patient should be monitored in the intensive care unit for signs of complications, including:

- Hypotension
- Arrhythmia
- Conduction disorders
- Pulmonary arterial hypertension
- Right heart failure
- Underlying conditions
- Electrocardiogram

The patient should be reassessed for signs of heart failure and hypotension.
3. Cognitive arrest. The sudden development of cardiac arrest produces an immediate cessation of cerebral function. In some cases, especially in infants and young children, the victim may recover consciousness after the resuscitation. This is not always possible.

2. Hypothalamic information. A few hypothalamic areas that control the rate of breathing and the heart's activity are involved in the regulation of these vital functions. These areas are especially sensitive to changes in environmental conditions and can be affected by various stimuli, such as temperature changes, emotional stress, or biological rhythms. Understanding the mechanisms by which these areas function is crucial for the development of effective treatments.

1. Ventricular fibrillation. Ventricular fibrillation is a life-threatening arrhythmia characterized by disorganized and chaotic electrical activity in the ventricles, the lower chambers of the heart. This condition leads to ineffective pumping of blood and can rapidly result in cardiac arrest if not treated immediately. The electrical activity is so disorganized that it resembles fine, rapid waves on an electrocardiogram (ECG), and can only be relieved by immediate cardioversion or defibrillation.

- Functional blocked affection is usually indicative of organic disease. The development of a distinct pathological condition may be noted.

- Deficiency of ventricular fibrillation is usually indicative of organic disease. The development of a distinct pathological condition may be noted.

- The usual response to defibrillation is a return of normal electrical activity.

- The usual response to defibrillation is a return of normal electrical activity.
procedure, 18 percent at the end of the procedure, and 5 percent in the immediate postoperative period. Avoidance of cardiac arrest is the goal of all physicians caring for a surgical patient, and a brief discussion of known etiologic factors may be helpful. These include (a) hypoxia, (b) hypercapnia, (c) hyperkalemia, (d) vagal reflexes, (e) intrinsic myocardial disease or myocardial depression from either anesthetic agents or overzealous use of antiarrhythmic agents.

In analysis of episodes of cardiac arrest, no single etiologic factor can be pinpointed. However, patients with chronic heart disease with myocardium further depressed by intravenous barbiturates who are allowed to become hypoxic and hypercapnic have the stage set for the development of cardiac arrest. Careful attention to avoidance of as many of the known etiologic factors as possible and careful use of drugs which depress the myocardium can avoid this complication.

Successful treatment of this disaster is dependent on prompt recognition. Continuous monitoring of the electrocardiogram and judicious use of the other monitoring techniques should allow for correction of those abnormalities which lead to the arrest and should reduce the mortality.

4. Patients with implanted pacemakers High voltage diathermy used during surgical procedures may inhibit implanted "demand" pacemakers. In such patients, the diathermy plate should be placed as far as possible from the pacing electrodes. The electrocardiogram should be watched while the diathermy is in use. Should it become apparent that diathermy disturbs pacemaker function, the pacemaker may be made to function temporarily in a "fixed-rate" modality by placing a magnet externally over the pacemaker pack.

V. Postoperative Care

A. General care The hemodynamic and metabolic consequences of trauma and/or surgical procedure have been fruitful fields for investigation and several useful textbooks and monographs present the information. Not only is the cardiac patient often unable to respond to an oxygenation defect by elevating his cardiac output, but he has a persistent and pernicious tendency to retain water and extracellular salt to a far greater extent than normal.

The body composition of the elderly patient is significantly different from the young and these considerations must be kept in mind when planning postoperative fluid and nutritional management. In general, the average body cell mass has decreased by 20 percent by the sixth decade and the total body water decreases steadily and significantly with age to a low of about 50 percent. This normal course of aging is accelerated by chronic cardiac disease where an even greater decrease in body cell mass and a significant increase in total body water are seen. The impact of these changes is a requirement that more careful fluid balance be maintained and that early attention be paid to the nutritional deficit of the postoperative period.

B. Fluids and electrolytes The most common electrolyte imbalance found in the postoperative period in elderly cardiac patients is hypokalemia. This is nearly always dilutional hypokalemia due to the propensity for salt and water retention. This is best treated by avoidance of overhydration in the immediate postoperative period. When the patient is already overexpanded with fluid and is hypokalemic, treatment with hypertonic saline solutions can be fatal. Restriction of fluid intake is the basis of successful therapy in these patients.

Occasionally patients with severe hypokalemia (serum sodium of 110-115 mEq per liter) will develop CNS symptoms of lethargy and unresponsiveness. These patients can be treated with small amounts of hypertonic saline to raise the serum sodium to 120 mEq per liter and then restrict water until the obligatory urinary loss of water and insensible loss of water has caused the serum sodium levels to return to normal.

The cardiac patient who has been on prolonged diuretic therapy is often hypokalemic, and this is aggravated by gastrointestinal losses from nasogastric suction and continued renal excretion. Because of increased endogenous steroids following surgical stress and increased aldosterone levels, urinary potassium loss may be quite high. This should be replaced vigorously using repeated serum determinations as a guide to replacement. All gastrointestinal losses should be carefully calculated and replaced.

Hyperkalemia is rarely seen except in patients with severely reduced renal function. Surgical stress, acidosis, and the catabolic state can cause a significant rise in serum potassium if the patient is oliguric. Early postoperative administration of potassium should be avoided until the serum level of potassium has been determined and adequacy of renal function has been assessed. Treatment of hyperkalemia consists in measures to reduce the serum potassium levels, the withholding of exogenously administered potassium, and correction of the underlying cause, if possible. Emergency therapy consists in the adminis-
1. Myocardial infarction. Myocardial infarction occurs in patients with a history of angina pectoris or a history of myocardial infarction. The development of postoperative myocardial infarction is also more common in patients with other cardiac conditions, such as diabetes, hypertension, or chronic obstructive pulmonary disease. The occurrence of myocardial infarction in patients with a history of coronary artery disease is also higher in patients who have undergone coronary artery bypass graft surgery or who have undergone percutaneous transluminal coronary angioplasty.

2. Arrhythmias. The occurrence of arrhythmias in postoperative patients is frequently observed in patients with a history of cardiovascular disease. The occurrence of arrhythmias can be influenced by factors such as age, gender, smoking status, and the degree of preoperative cardiac function. The occurrence of arrhythmias in postoperative patients can be reduced by the use of antiarrhythmic medications, such as beta-blockers, and by minimizing the use of drugs that can cause cardiac dysrhythmias, such as sympathomimetic agents.

3. Cardiac failure. The appearance of cardiac failure in postoperative patients is frequently observed in patients with a history of chronic heart failure. The occurrence of cardiac failure can be reduced by the use of diuretics, angiotensin-converting enzyme inhibitors, and beta-blockers, and by minimizing the use of drugs that can cause cardiac failure, such as sympathomimetic agents.

By early identification of these complications and by the use of appropriate interventions, postoperative myocardial infarction and cardiac failure can be minimized, leading to improved patient outcomes.
A. Detection of shock and monitoring in clinical course

1) Shock

(a) Manifestations of shock

- Cardiorespiratory System

(b) Management

2) Shock

(a) Manifestations of shock

- Cardiorespiratory System

B. Management

Management of shock should begin as soon as the condition of shock is suspected, even before specific tests can be performed. Immediate treatment is essential to prevent irreversible damage.

C. Consequences of shock

These are multiply deleterious, including:

- Cardiovascular collapse
- Hypotension
- Organ perfusion failure
- Multi-organ failure
- Sepsis
- Acute respiratory distress syndrome

D. Prevention

Identifying and addressing the predisposing factors is crucial.

E. Conclusion

The prevention, early recognition, and prompt treatment of shock are essential for a favorable outcome.
...
agreement, can be applied generally, while provisions applying more specific legal rights and duties are subject to the specific legal provisions of each state. The effects of these provisions are summarized in Table 2-4 and are discussed in subsequent sections of this chapter.

Table 2-4. Causes of Shock

<table>
<thead>
<tr>
<th>Cause of Shock</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac collapse</td>
<td>Caused by heart attack or cardiomyopathy.</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>Result of major blood loss.</td>
</tr>
<tr>
<td>Septic shock</td>
<td>Caused by infection, typically bacterial.</td>
</tr>
<tr>
<td>Neurogenic shock</td>
<td>Result of injury to the nervous system.</td>
</tr>
</tbody>
</table>

Selected References
