Trauma

Trauma (from Greek τραῦμα, "wound") is "a body wound or shock produced by sudden physical injury, as from violence or accident." It can also be described as "a physical wound or injury, such as a fracture or blow." Major trauma, defined by an Injury Severity Score of greater than 15, can result in secondary complications such as circulatory shock, respiratory failure and death, and resuscitation of a trauma patient can often involve multiple management procedures. Trauma is the sixth leading cause of death worldwide, accounting for 10% of all mortalities, and is therefore a serious public health problem with significant social and economic costs.

Trauma is defined as any body wound or shock produced by sudden physical injury, as from accident, injury, or impact. Trauma patients may require specialized care, including surgery and blood transfusion, within the so-called golden hour of emergency medicine, the first sixty minutes after trauma occurs. This is not a strict deadline, but recognizes that many deaths which could have been prevented by appropriate care occur a relatively short time after injury. In many places organized trauma referral systems have been set up to provide rapid care for injured people. Research has shown that deaths from physical trauma decline where there are organized trauma systems.

Epidemiology

Trauma is the sixth leading cause of death worldwide resulting in five million or 10% of all deaths. It is the fifth leading cause of significant disability. About half of deaths due to trauma are in people aged 15–45 years and in this age it is the leading cause of death. Death from injury is twice as common in males as females. The primary causes of traumatic death are central nervous system injury, followed by exsanguinations.

Injury is an increasingly significant health problem throughout the world. Every day, 16 000 people die from injuries, and for every person who dies, several thousand more are injured, many of them with permanent squeal. Injury accounts for 16% of the global burden of disease. The burden of death and disability from injury is especially notable in low- and middle-income countries. By far the greatest part of the total burden of injury, approximately 90%, occurs in such countries.

Injury is the number one cause of death for people aged 1 to 44. In the US, there were 160,000 trauma deaths in 2001, about $^{2}/_{3}$ being accidental. Of intentional injury deaths, about 60% were due to self-harm. In addition to deaths, injury results in about 40 million emergency department visits annually.

Etiology and Pathophysiology

Of the myriad ways people are injured, most can be categorized as blunt or penetrating. Blunt injury involves a forceful impact (eg, blow, kick, strike with object, fall, motor vehicle collision, blast). Penetrating injury involves breach of the skin by an object (eg, knife, broken glass) or projectile (eg, bullet, shrapnel from explosion).

Other injury types include thermal and chemical burns, toxic inhalations or ingestions, and radiation injury. These and other specific injuries (eg, fractures, dislocations, and sprains) spinal cord injury, head injury.

All injuries, by definition, produce direct tissue damage, the nature and extent depending on the anatomic site, mechanism, and intensity of trauma. Severe direct tissue damage (eg, to the heart, brain, spinal cord) is responsible for most immediate trauma deaths.

Patients surviving the initial insult may develop indirect injury effects. Disruption of blood vessels produces hemorrhage, which may be external (and hence visible) or internal, either confined within an organ as a contusion or hematoma, or as free hemorrhage into a body compartment (eg, peritoneal cavity, thorax). Small amounts of hemorrhage (ie, < 10% of blood volume) are tolerated well by most patients. Larger amounts cause progressive declines in BP and organ perfusion leading to cellular dysfunction, organ failure, and eventually death. Hemorrhagic shock causes most short-term (ie, within hours) deaths, and multiple organ failure from prolonged shock causes many of the near-term (ie, first 14 days) deaths. Additional near-term deaths result from infection because of disruption of normal anatomic barriers.

Bruise Treatment:

Pharmacological treatment

- Analgesics or NSAIDs may be taken for pain
- Topical anti-thrombotic or anti-inflammatory therapy treatment

Non- Pharmacological Treatment con't

- Ice should be applied immediately to an area that is injured to reduce swelling and diminish

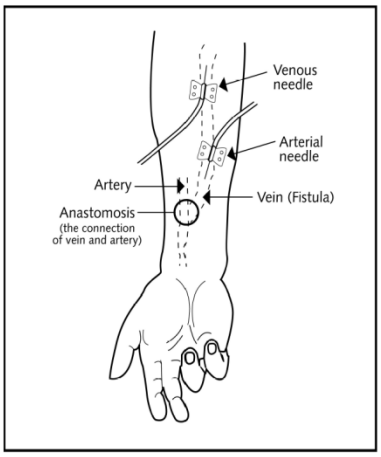
  the black-and-blue discoloration of bruising.

- Ice packs may be alternated with a heat pack for the next 48 hours. Although bruising may be reduced by this method, some discoloration will still be visible.

Arteriovenous (AV) shunt thrombosis:

In hemodialysis, an artery takes blood to the dialyzer (artificial kidney) to be cleaned. A vein brings cleaned blood back. To make it easier for you and your care team, an access is usually created in an arm. But the veins in your arm are too small for dialysis.

And the arteries in arms are deep below skin too hard to reach with dialysis needles.



A fistula is made by sewing an artery to a vein, usually in your arm. It is also called an arteriovenous (artery + vein) fistula, or "AV fistula." When your artery is hooked up to your vein, strong blood flow from the artery makes the vein bigger and stronger. And since your veins are close to your skin's surface, the new access is easy to reach.

AV shunt:

Their job is to make it easier to reach the blood vessels to filter and clean blood with Hemodialysis.

The problem is, platelets stick to scar tissue and damaged blood vessel walls in a fistula or graft. And, of course, every needle puncture causes a little bit of damage.

If a clot is not treated, it can seal off a fistula so no blood can go through it. The fistula will need to be repaired before it can be used. Sometimes repair is not possible and replacement is needed.