A bruise by any other name would be... An ecchymosis?

By Stephanie Carlson, RN, SANE-A

The topic of the session was *Domestic/intimate partner violence injury documentation – Do's and don'ts* (Lewis-O'Connor, 2006). The speaker possessed a PhD. The audience was a multinational audience of nurses. In a lecture about documenting injuries, a group of more than 100 forensic nurses could not reach a consensus on how to document each of the injuries described. The one thing upon which everyone agreed at the end of the session was that this is a topic that needs further clarification.

A prudent writer would explore this topic alone rather than inviting exposure to criticism for trying to clarify descriptions that are generally understood. Experience suggests, however, that many emergency nurses struggle with the documentation of injuries. Perhaps some terms are not really generally understood. It might be useful to review the more common injuries that emergency nurses see and explore terminology.

Emergency nurses are familiar with the acronym T-E-A-R-S. Crowley (1999) identifies the words represented as "tears, ecchymoses, abrasion, redness, and swelling" (p. 88). Although there are other mnemonics, this seems to be the most widely used; therefore, it was selected as the basis of an exploration of wound definitions.

T: tears (laceration) or tenderness (Giardino, Datner, Asher, Girardin, Faugno, & Spencer, 2003, p. 182). This is generally used to remind nurses of lacerations, probably the most common of all injuries and usually requiring sutures. It is not unusual for emergency nurses to mistakenly chart an injury from a sharp object as a laceration (Assid, 2005). Lacerate means "to tear or rend roughly" (Webster, 2001). Lacerations are injuries that are caused by impact with a blunt object and result from "tearing, ripping, crushing, overstretching, pulling apart, bending and shearing soft tissues (Besant-Matthews, 2006, p. 195). They can range from the fairly tidy open wound, as when wall meets toddler forehead, to a messy, grossly irregular gash caused by closing a door on a finger. On close inspection, jagged edges and bridging across the wound margins may be visible, particularly at the ends of the wound. Bridging refers to the existence of small bands of tissue, which indicate an incomplete separation of the two sides of the wound. There is often discoloration in the area from the impact that caused the laceration. The key is the mechanism of injury – lacerations are caused by blunt force trauma.

A cut or incision, on the other hand, is caused by either sudden or steady impact with a sharp object – a knife or glass or sharp metal, for example. The man who arrives at the emergency department with a blood-soaked kitchen towel wrapped around his hand and reporting that he was washing dishes (lucky wife) when a glass broke in his hand, has an incised wound. These injuries are characterized by clearly defined edges without bridging. Some physicians will call a nurse to task for charting incision and the agency may prefer incised wound or cut; in any event, it is not a laceration.

Patients may arrive with penetrating wounds such as a puncture wound, a piercing injury, such as being jabbed by the end of a wire or the tine of a meat fork. A stab wound is an incision or a cut that is deeper than its length (Hoyt, 1999), usually caused by a thrust of a sharp object. It might also be caused by impalement, such as falling upon a pointed rock. A penetrating wound enters the body, but doesn't pass through, while a perforating wound enters and leaves the body via a specific exit point, such as a gunshot wound.

E: ecchymosis (bruising) (Giardino, Datner, Asher, et al., 2003, p. 182). The acronym TEARS, though useful and succinct, promotes the understanding that ecchymosis and bruise are synonymous. An ecchymosis is the same as a bruise – or is it? This word is, in fact, the most troublesome of all wound descriptions.

If we first attempt to determine what a bruise is, we find it is a lay term, appropriately used interchangeably with contusion. Bruises or contusions, "black and blues" (Hoyt, 1999), are "mechanical injuries (usually caused by a blow) resulting in hemorrhage beneath unbroken skin" (Crowley, 1999, p. 203). One definition of a contusion is "an injury, as from a blow with a blunt instrument, in which the subsurface tissue is injured, but the skin is not broken; a bruise" (Dictionary.com, 2006).

Common injuries		
Description	Mechanism of Injury	Typical Appearance
Abrasion	Horizontal compression with scraping of outer layers of skin	Superficial shearing of skin, often pushing skin to the terminus of the injury
Amputation	Separation of a part from the body	Complete removal of a body part
Avulsion	Tearing or cutting away of a body part	Skin flap or removal of tissue
Bite mark (Describe by appearance)	Crushing bruise(s) or laceration(s) or abrasion(s) caused by teeth	Related to the source of the bite. Human bite marks may appear as single or opposing u-shape bruises with or without lacerations. Animal bites are more likely to include punctures or lacerations, sometimes complete avulsions.
Bruise	Blunt force impact resulting in blood vessel leakage under surrounding tissue	Unbroken skin with discoloration ranging from reddish-purplish to yellow-green
Contusion	Blunt force impact resulting in blood escaping from vessels into surrounding tissue	May include redness and swelling, bruising Organ contusion will not be visible
Ecchymosis	Trauma, direct blunt impact, or idiopathic	Purplish regular or irregular shaped hemorrhagic areas under the skin
Erythema	Increased pressure to the skin, thermal injuries, allergic reactions	Redness or flushing, blanches with pressure
Hematoma	Blunt force impact	Confined mass of blood
Incised wound	Sharp force trauma, e.g. wounds from impact with knives, glass, shards, sharp metal	Clean, tidy break in the skin, without bridging
Laceration	Blunt force trauma, e.g. falls, blows from non-sharp implements or fists	Break in the skin, usually with somewhat jagged edges, possibly with obvious bridging of tissue between wound margins
Ligature mark	Something tied around the neck or other body part with applied pressure	Circumferential or near circumferential marks, often with bruising and laceration or abrasion of skin surface and subcutaneous layers. Seen with hanging, strangulation, or restraints
Pain	Any type of injury	Physical suffering caused by a body disorder
Pattern injury	Any forceful contact, e.g., belt buckle, rope, hand	Possesses features or shape pinpointing the object or surface that caused the injury
Penetrating injury	Sharp/blunt object or projectile	Enters the body but does not exit the body
Perforating injury	Sharp/blunt object or projectile	Enters the body and passes through
Petechiae	Rupture of capillaries associated with strangling, trauma, or excessive vomiting	Pinpoint hemorrhages less than 3 mm diameter; do not blanch
Puncture	A hole or perforation	A punctuate lesion in the surface of skin or mucous membrane
Purpura	Pathology	Purple non-blanching lesions, blood leaking under the skin
Stab	Soft tissue injury by a relatively pointed weapon pointed inward by a thrust-like force or by impalement	Usually deeper than it is long and may have bruising around the wound margins
Stellate (adj.)	Impact wound which pierces the skin	Central impact area with outward spokes, star shape injury
Tenderness	Any type of injury	Sensitivity to pressure or movement

Giardino, Datner, and Asher (2003) describe a contusion as injuries "…characterized as areas of tenderness, with or without swelling or redness from the impact of blunt forces against the body, and may be the result of being slapped, punched, or impacted with an object." (p. 490). Bruises/contusions are tender and/or painful and generally have fairly regular borders. The patient will often recall a causative injury. The key is that bruises or contusions are caused by trauma.

Taber's Cyclopedic Medical Dictionary (2001) defines an ecchymosis as "A bruise…superficial bleeding under the skin or a mucous membrane" (p. 301). Stedman's Medical Dictionary (2005) states that an ecchymosis is "A purplish patch caused by extravasion of blood into the skin, differing from petechiae only in size (larger than 3 mm diameter)" (p. 448). An ecchymosis, according to Hoyt (2006) is a "hemorrhagic, reddish-purple spot or rash that is induced from an underlying hematological condition… often noted in older adults as their capillaries are fragile…" (p. 266). She lists several non-trauma causes of ecchymoses.

So is an ecchymosis a bruise? Is a bruise an ecchymosis? Bickley and Szilagyi (2003) say that an ecchymosis is "blood outside the vessels; often secondary to bruising or trauma; also seen in bleeding disorders" (p. 106). Contusions/bruises are the result of trauma. Ecchymosis is a description of what exists and may include contusions or any extravasion of blood out into skin or mucous membranes apart from injury directly to that area (Taber's, 2001, p. 659).

One way to remember this is to think of "raccoon eyes" and Battle's sign. No direct trauma occurs at the sites of discoloration so they cannot be considered contusions. Raccoon eyes are "periorbital ecchymoses" (Schwartz, 2002, p. 751) and Battle sign is "ecchymosis behind the ear caused by basilar skull or temporal bone fractures" (Schwartz, p. 751) or a "mastoid process ecchymosis."

Another word that describes discolored lesions is purpura. Purpura is defined in Taber's Cyclopedic Medical Dictionary (2001) as "Any rash in which blood cells leak into the skin or mucous membranes, usually at multiple sites. Purpuric rashes often are associated with disorders of coagulation or thrombosis. Pinpoint purpuric lesions are called petechiae; larger hemorrhages into the skin are called ecchymoses." These lesions do not blanch (Schwartz, 2002, p. 139).

Petechiae are small reddish-purplish hemorrhages of small capillaries under the skin, less than 3 mm in diameter (Giardino, Datner & Asher, 2003) or, according to Jarvis (2000), "less that 2 mm…and do not blanch" (p. 253). Petechiae may result from blunt trauma or from increased intravascular pressure, as in the case of severe vomiting or strangulation.

One other word that we see often in emergency departments is hematoma, described by Giardino, Datner, and Asher (2003) as "a localized mass of blood that is relatively or completely confined within an organ, tissue, space, or potential space, and which is usually or partly clotted" (p. 700). Porth (2002) defines a hematoma as "a large area of local hemorrhage" (p. 1322). A hematoma deep inside the body will not be seen, although it may be tender and should be noted in charting as an area of tenderness. A surface hematoma will be obvious by swelling, as in a "goose egg."

A: Abrasion (Giardino, Datner, Asher, et al., 2003, p. 182). Perhaps, after lacerations, the next most common wounds seen in emergency are abrasions. Crowley defines abrasion as, "Excoriation or circumscribed removal of superficial layers of skin or mucous membrane; a scraping away of a portion of the surface" (p. 203). These are caused by a combination of parallel moving contact and compression against a surface with resulting friction. The wound will suggest the direction of the injury; it is not unusual to see the tissue lifted in the opposite direction of the force applied against the skin.

R: Redness (erythema) (Giardino, Datner, Asher, et al., 2003, p. 182). Erythema is a reddened area of the skin caused by dilation of the capillaries. Erythema includes pressure marks (the forearm resting on the edge of the table) and flushed areas. The distinct difference between erythema and ecchymoses is that erythema will blanch when pressure is applied. It is usually not sharply defined and usually not tender, although it may feel warm to the touch.

S: Swelling (edema) (Giardino, Datner, Asher, et al., 2003, p. 182). Documentation should include any swelling or deformity. Charting should reflect location, extent, discoloration, if present, and sensation. It is often useful to compare the injured site to the corresponding site on the opposite side of the body to determine the extent of edema present.

It is inappropriate to try to date an injury in documentation; it should be sufficient to note its color, shape, or quality without trying to guess how old it is. In fact, the chart should record only what is observable. Nurses may quote the patient or his/her companions to clarify or explain a description, but should avoid conjecture.

When charting injuries such as lacerations and cuts, documentation should include the size of each injury and its location in relation to body landmarks, i.e., "4 cm above the left ante cubital fossa". The use of drawings or printed body diagrams is an excellent means of recording location precisely. Injuries and lesions should be documented by location, size and color. Areas of swelling and sites of deformity should be noted. If a nurse is uncertain of the correct term for an injury, he/she is certainly safe in charting an accurate description of what she sees, such as "a swollen, tender 3 cm by 6 cm reddish-purple, non-blanching, circumscribed area midline 2 cm above the xiphoid process." Alterations or deficits in sensation and changes in strength and range or motion should likewise be identified.

Although the genesis of this article was a meeting of forensic nurses, all nurses can appreciate the importance of accurately recording the nature and extent of injuries. This is especially true for emergency nurses whose initial descriptions will become the baseline by which to plan and evaluate future care. The documentation of injuries is an opportunity for emergency nurses to let charting excellence reflect the expertise and skill that they bring to their profession.

About the author

Stephanie Carlson, RN, has worked as a staff nurse in the Emergency Department at Pasqua Hospital in Regina, SK for the past four years. She is a NENA member and the secretary for the Saskatchewan Emergency Nurses Group.

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