

Road Traffic Accidents

Road traffic accidents (RTAs) involving pets are a common emergency seen in a lot of veterinary clinics annually. However, there is increase at this time of year as it is getting darker much earlier. The outcome of these accidents can be fatal or range in severity from life threatening multiple injuries including shock to perhaps more minor wounds. As with many traumatic incidents, the extent of the injuries may not be initially evident. Emergency veterinary care should be sought immediately even if the pet seems fine after the event and owners should always be advised to bring in the injured pet immediately. It is worth noting that even animals with minor injuries may be suffering from shock, which requires immediate attention to help counteract.

Initial Assessment

When faced with a RTA emergency (or any emergency case) the table below shows a recognised plan of action to assess the patient as quickly and carefully as possible.

Table 1 A Crash Plan

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| A | Airway: - Check if the patient has a patent airway and is trying to breathe on its own. If not, ensure airway is clear and intubate where possible. Other means of administering oxygen are by mask, oxygen cage or intranasal catheter. |
| C | Cardiovascular/circulatory :- To assess circulation, evaluate the patient's heart rate, rhythm, pulse rate and quality, mucous membranes colour and capillary refill time as well as a rectal temperature. If the patient is in shock, fluid therapy must be |

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| | administered immediately to help the circulatory system operate effectively. |
| R | Respiratory- Check rate, depth, signs of respiratory distress (Pneumothorax is a condition in which air gets into the chest cavity causing lung collapse) |
| A | Abdomen- Check for swelling, wounds, signs of pain etc |
| S | Spine- Check carefully for any obvious wounds/ deficits/ pain |
| H | Head (including eyes, ears and neck) :- Check for wounds/ obvious trauma |
| P | Pelvis: - Pelvic fractures are a common result of an RTA. Initial signs include abnormal stance/ gait and pain. Other signs include abnormalities involving faecal output and quality, also beware of damage to bladder |
| L | Limbs (including tail):- Any fractures should be supported to avoid further trauma to tissue and blood supply. All limbs should be similar temperature as coldness may indicate that blood supply has been compromised. |
| A | Arteries: - Any external wounds should be assessed and nursed immediately to stop haemorrhage if indicated. Also the patient may cough up blood that has haemorrhaged into the lungs |
| N | Nerves (including cranial nerves, reflexes and pain sensation) The aim of a neurological assessment is to identify serious neurologic abnormalities of the brain as well as nerve supply to limbs etc. |

During the initial assessment, the veterinary staff must decide upon the patient's medication requirements and whether the patient requires treatment for shock.

Shock

Most patients involved in RTAs show some degree of shock. Shock is a condition where there is inadequate blood flow reaching the body tissues arising usually from a traumatic event. In turn, the reduced blood circulation causes insufficient oxygen supply, a build up of acids, and eventually death of cells if not rectified quickly.

Signs may include

- a) Pale mucous membranes
- b) Rapid and shallow breathing
- c) Shivering and low body temperature
- d) Rapid and weak pulse
- e) Dilated pupils

Treatment

- 1) Patient must be kept warm, quiet and dry
- 2) Oxygen therapy is administered
- 3) Fluid therapy administered if not contraindicated by other conditions
- 4) Where there has been massive haemorrhage, blood transfusion may be warranted
- 5) Drug therapy

Drug Therapy

When assessing a patient after an accident, there may be decisions to be made rapidly regarding overall drug therapy and also how to administer it as quickly as possible. When dealing with a patient with compromised circulation or injured limbs, it may be necessary to use alternative routes to administer medications or indeed fluids.

See below for the accessible routes used in order of preference

A) Intravenous route means using veins to administer medication or fluids. This is the preferred and usually most accessible route.

- i) Peripheral veins are often the first choice as long as there is good circulation
- ii) Central veins (Jugular) are a more efficient route for administering drugs, a peripheral catheter can be used in an emergency situation
- iii) Intraosseous- injecting directly into bone marrow is another choice for venous system access. Special needles are available but in an emergency, a hypodermic needle can be used

B) The endotracheal route may be used if intravenous or intraosseous access is not readily available and a patient requires immediate life-saving drug intervention. This route allows for rapid absorption of drugs, although the dose will need to be doubled (refer to manufactures instructions).

C) Intracardiac- however, this is inadvisable as arrhythmias can occur if the injection is into the myocardium and can actually damage the heart itself.

As the primary assessment is for immediate life endangering injuries or shock, less major injuries will be dealt with subsequently. These may include fractures of bones including the mandible/ maxilla. The patient may require surgery or supportive bandaging to rectify these injuries.

Another example is of diaphragmatic rupture. The diaphragm divides the chest from the abdominal cavity and when it is ruptured, abdominal contents pass into the chest decreasing lung capacity. The magnitude of the rupture will dictate when the surgery takes place for repair of the diaphragm. If the patient's breathing is compromised as a result, then surgery may have to take place sooner than desirable

Prevention

An accident may be defined as an unforeseen, unintentional incident that often results in injury or damage. Therefore as much as we try to prevent them, they can still occur. It is important to implement some simple steps to reduce the likelihood such as using high visibility jackets, reflective collars or even walking pets in well lit areas. Keeping pets on leads when walked or ensuring that they are kept in well fenced, enclosed gardens will aid in prevention also. In the event of an accident, it is vital that veterinary assistance is sought immediately as early intervention and treatment can enhance the pet's chance of survival and can help reduce the extent of the injuries sustained. It is important that owners are aware that the pet may have very serious internal injuries or be in shock yet appear fine after any accident.