



Portage County EMS Patient Care Guidelines



Crush Syndrome

Note:

- Crush syndrome is a concern when a victim’s limb or body has been entrapped and crushed under a heavy load or pressure for > 30 minutes
- Prepare for a sudden worsening of the patient’s condition upon release from crushing entrapment

Priorities	Assessment Findings
Chief Complaint	Physical crush or entrapment
LOPQRST	Time of entrapment
AS/PN	Pain? CMS Compromise?
AMPL	Pre-existing kidney disease?
Initial Exam	ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	Vital Signs: BP, HR, RR, Temp, SpO2 General: Ill appearing? Dehydrated? Distal CMS of involved extremity Neuro: ALOC?
Data	SpO2, ETCO2
Goals of Therapy	Minimize systemic effects of reperfusion of crushed area Prevent kidney damage from rhabdomyolysis
Monitoring	VS; cardiac monitor; capnography

EMERGENCY MEDICAL RESPONDER/ EMERGENCY MEDICAL TECHNICIAN

- Routine Medical Care
- Administer oxygen 2 – 4 LPM per nasal cannula if SpO2 < 94%. Increase flow and consider non-rebreather mask to keep SpO2 > 94%
- Check blood glucose level. Refer to *Altered Level of Consciousness guideline* as needed
- Consider tourniquet placement on the involved extremity

Give a status report to the ambulance crew by radio ASAP.

ADVANCED EMERGENCY MEDICAL TECHNICIAN

- IV normal saline, 20 ml/Kg bolus
- Consider intraosseous (IO) access if a peripheral IV cannot be established
- Consider second IV

Contact Medical Control for the following:

- Additional fluid orders

INTERMEDIATE

- Refer to *Pain Management Guidelines*
- Acquire, interpret and transmit 12-lead EKG to receiving facility
- EKG monitoring
- **Albuterol** nebulized, 5 mg in 6 ml administered continuously before and after extrication

Contact Medical Control for the following:

- Prolonged entrapment

PARAMEDIC

- Immediately before extrication:
 - **Sodium bicarbonate** 1 amp (50 mEq) IV/IO
 - If signs of hyperkalemia^[1], **calcium chloride 10%**^[2]^[3] 1 gm IV/IO slowly over 5 minutes

Contact Medical Control for the following:

- Prolonged entrapment

FOOTNOTES:

[1] Signs of hyperkalemia:

- Mild – peaked T waves
- Moderate – prolonged PR interval, decreased P wave amplitude, ST segment depression
- Severe – QRS widening, flat P waves, second degree Mobitz I, PVCs
- Life Threatening – absent P waves, V-tach, AV block, extremely widened QRS

[2] Calcium gluconate 10% may be substituted for calcium chloride during a medication shortage. Calcium gluconate 500 mg (15 mL of 10% solution) IV slow.

[3] Flush IV line with normal saline before and after calcium chloride administration.

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