2018

Dynamic Practice Guidelines for Emergency General Surgery

Committee on Acute Care Surgery, Canadian Association of General Surgeons

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ABDOMINAL COMPARTMENT SYNDROME

Dynamic Practice Guidelines for Emergency General Surgery

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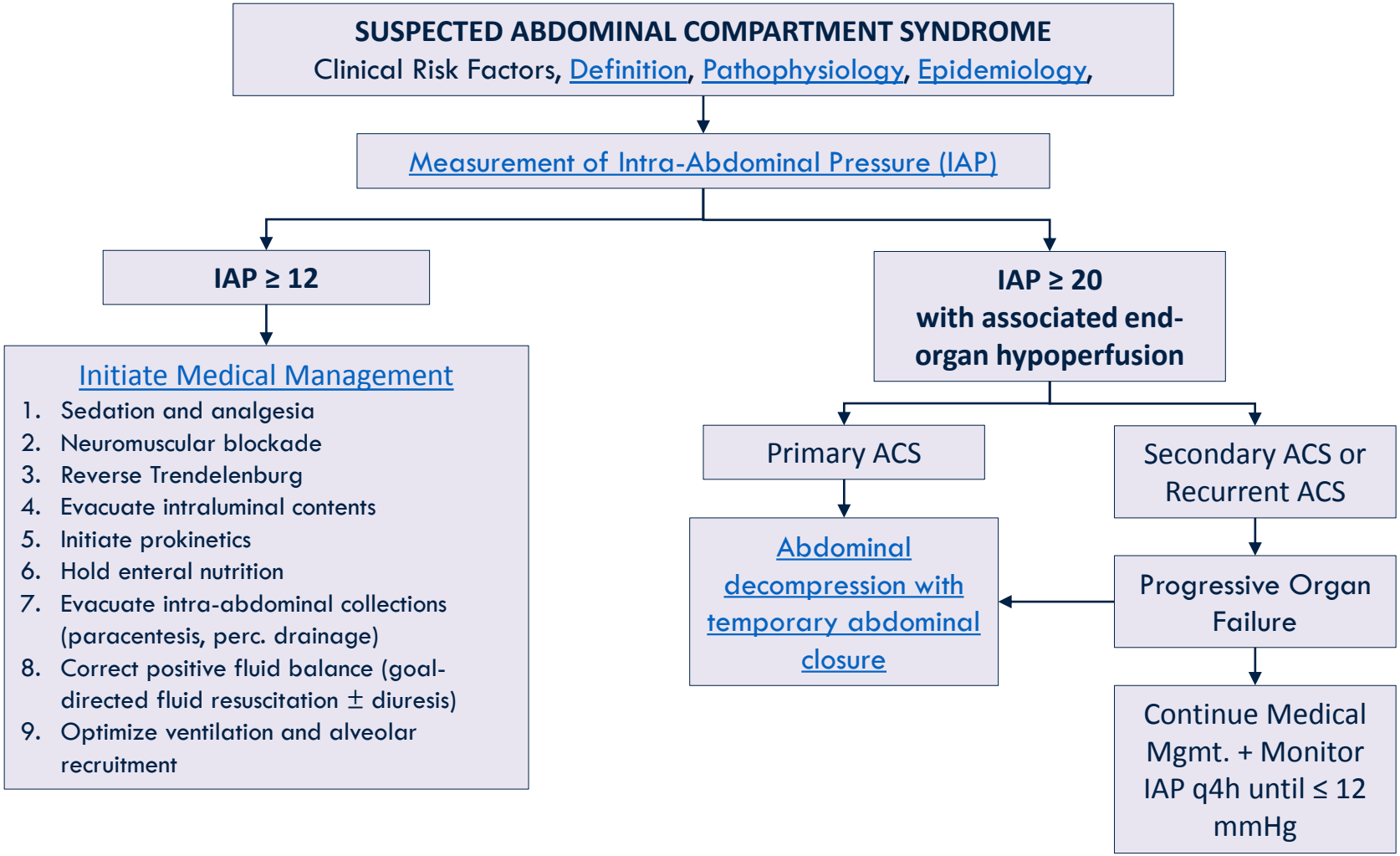
Clinical Practice Guideline

ABDOMINAL COMPARTMENT SYNDROME



ABDOMINAL COMPARTMENT SYNDROME

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Definition

Caused by an acute rise in intra-abdominal pressure, with the following physiological effects:

Cardiovascular	Respiratory	Renal	Gastrointestinal	Systemic
Increased systemic vascular resistance	Decreased vital capacity	Decreased urinary output	Decreased bowel perfusion	Increased SIRS (cytokines)
Vena Cava compression				Increased risk of DVT
Decreased preload				
Decreased cardiac output				

ABDOMINAL COMPARTMENT SYNDROME

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Pathophysiology

- Abdominal perfusion pressure = Mean Arterial Pressure (MAP) – Intra-Abdominal Pressure (IAP)
- Normal IAP = 5 - 7mmHg
- Intra-abdominal hypertension (IAH) = IAP > 12mmHg
- Abdominal compartment syndrome (ACS) = sustained IAP > 20mmHg PLUS organ failure

Classification

Grade I	IAP 12-15mmHg
Grade II	IAP 16-20mmHg
Grade III	IAP 21-25mmHg
Grade IV	IAP > 25mmHg

Adapted from The World Society of Abdominal Compartment Syndrome

ABDOMINAL COMPARTMENT SYNDROME

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Epidemiology

	Primary ACS	Secondary ACS
Definition	IAH caused by a primary intra-abdominal/pelvic process	IAH not caused by primary intra-abdominal/pelvic process
Etiologies	Intra-abdominal bleeding • Trauma • Post abdominal surgery	Bowel edema secondary to reperfusion injury
	Retro-peritoneal bleeding • Ruptured AAA • Spontaneous retroperitoneal hematoma	Abdominal wall edema secondary to massive resuscitation • Burns • Massive transfusion
	Intra-abdominal abscess/fluid collections	Decreased abdominal wall compliance secondary to full-thickness burns
	Severe pancreatitis	
Mgmt.	Usually requires surgical or radiological intervention	Can be managed non-operatively

Adapted from The World Society of Abdominal Compartment Syndrome

Investigation

Measurement of Intra-Abdominal Pressure (IAP)

1. Supine
2. End expiration
3. Full relaxation abdominal wall muscles
4. Transducer focused at midaxillary line
5. Instillation of 25cc saline in bladder

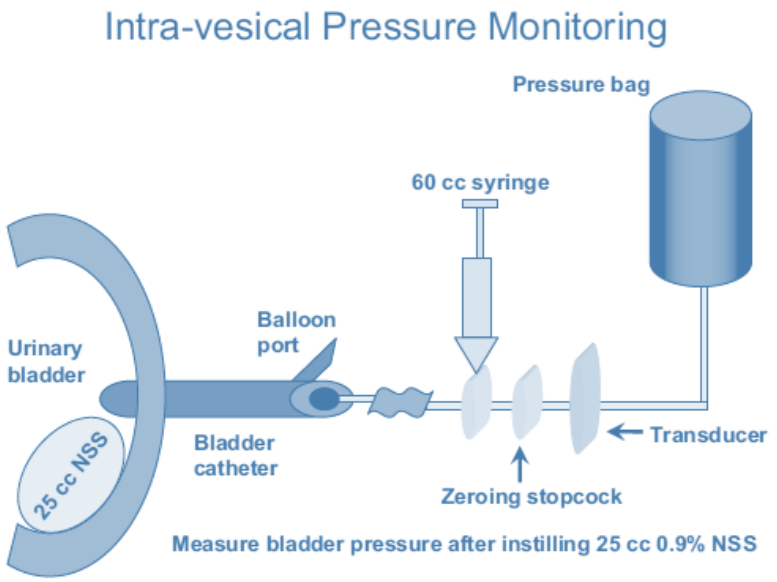

Figure 1. The intravesical method of monitoring intra-abdominal pressure. *NSS*, normal saline solution.

Non-Operative Management

Step 1	NGT tube decompression Pro-kinetics Sedation and analgesia Goal-directed fluid resuscitation
Step 2	Reduce enteral nutrition Percutaneous drainage of intra-abdominal fluid collections Reverse Trendelenburg Diuresis
Step 3	Discontinue enteral nutrition Neuromuscular blockade Consider hemodialysis/CRRT

Operative Management

Step 1	Decompressive Laparotomy

Management of Open Abdomen

- WSACS recommends using Negative Pressure Wound Therapy (NPWT)
- Early closure recommended