Spinal Anesthesia Contraindication and complication

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# objective:

1) contraindication of spinal anesthesia  
   A - absolute  
   B - relative  
   C - Controversial  

2) complication of spinal anesthesia  
   A - prevention  
   B - treatment
Contraindications to neuraxial blockade:

*** Absolute:
1. Infection at the site of injection.
2. Lack of permission.
3. Coagulopathy or other bleeding disorder. Patients with low platelet count or those on anticoagulant drugs (heparin + warfarin) are at high risk of **hematoma formation** (haematoma leading to spinal cord compression.)
4. Severe hypovolemia. (since SPA has marked hypotensive effect)
5. Increased intracranial pressure (patient with raised ICP may lead to brainstem herniation)
Contraindications to neuraxial blockade:

*** Relative
1. Sepsis (may lead to shock)
2. Uncooperative patient
3. Preexisting neurological deficits
   (Any worsening of the disease postoperatively may be blamed erroneously on the spinal anaesthetic)
4. Demyelinating lesions
5. Stenotic valvular heart lesions (this patients already have low cardiac output)
6. Left ventricular outflow obstruction (hypertrophic obstructive cardiomyopathy)
7. Severe spinal deformity (kyphosis or scoliosis because You can not determine at what level you are present)
Contraindications to neuraxial blockade:

*** Controversial
1. Prior back surgery at the site of injection.
2. Complicated surgery.
3. Prolonged operation.
4. Major blood loss Maneuvers that compromise respiration.
Complications of spinal Anesthesia:

**Complications of spinal anesthesia range from mild to life-threatening...**
And from self-limited back soreness to debilitating permanent neurological deficits and even death

**Complications can be secondary to:**
- excessive physiological effects of appropriately injected drug,
- injury from needle or catheter placement and
- systemic toxicity
Complications of spinal Anesthesia:

- **Needle or cath insertion**
  1) Inadequate anesthesia or analgesia. Movement of needle during injection, incomplete entry of needle, insufficient dose are all examples.
Complications of spinal Anesthesia:

**Excessive response**

1) **High neural block**.
   Is an exaggerated dermatomal spread of neural block. Patients may complain of dyspnea and have numbness or weakness in upper extremities. Spinal anesthesia ascending into the cervical levels causes severe hypotension, bradycardia, and respiratory insufficiency.

Apnea is more often the result of severe sustained hypotension and medullary hypoperfusion than a response to phrenic nerve paralysis from anesthesia of C3–C5 roots.

MAY LEAD TO CARDIAC ARREST (rare if we don’t follow up the patent)!
Cont of high neural block :

*Treatment of an excessively high neuraxial block involves maintaining adequate arterial oxygenation and ventilation and supporting the circulation.
*When respiratory insufficiency becomes evident, in addition to supplemental oxygen and assisted ventilation, intubation and mechanical ventilation may be necessary.
*Hypotension can be treated with intravenous vasopressors and rapid administration of intravenous fluids.
*Bradycardia can be treated early with atropine. Ephedrine or epinephrine can also increase heart rate and arterial blood pressure.
Complications of spinal Anesthesia:

• **Hypotension:**
  due to vasodilation and a functional decrease in the effective circulating volume.
  - By giving fluids and oxygen mask.
  - Raising the legs: simple and effective.
  - Increase the speed of IV infusion: until the blood pressure is restored.
  - If the pulse low give atropine IV because (atropine) increase heart rate.
  - Vasoconstrictor (ephedrine)
Complications of spinal Anesthesia:

- **Headache:**
  - within 12-24 h and may last for 1 week
  - it is postural and it is often *occipital associated with a stiff neck, nausea, vomiting, Dizziness and photophobia.*
  - Ask to lying flat in bed and give simple analgesics.
  - Note: the cause of headache: During a spinal tap, a needle is placed within the fluid-filled space that surrounds your spinal cord. This creates a passage for the *spinal fluid to leak out,* which changes *the fluid pressure around your brain and spinal cord.* If enough of the fluid leaks out, you may get a spinal headache.
Complications of spinal Anesthesia:

- **Urinary retention.** Local anesthetic block of S2–S4 root fibers decreases urinary bladder tone and inhibits the voiding reflex. If no urinary catheter is placed preoperatively, it is prudent to use the regional anesthetic of shortest duration sufficient for the surgical procedure and to administer the minimal safe volume of intravenous fluid.
  *back pain due to micro vascular injury to skin, muscle and ligament
- **Permanent neurological complications (rare):** meningitis, arachnoiditis, peridural abscess
- **Permanent paralysis:** in elderly patient other cause: direct injury of the spinal cord.
Thank you