Post-Op Oliguria

Anesthetic Pearls: Diagnosis and Treatment of Post-Operative Oliguria

Oliguria is defined as urine output less than 0.5 ml/kg/hr. The most common causes of post-op oliguria are pre-renal (rarely is post-op oliguria renal in origin).

Hypovolemia is by far the most common cause for low urine output seen in the PACU.

Subclinical cardiac depression may result from residual cardiac depressant effects of volatile anesthetics, but this usually resolves with recovery from anesthesia. Post-renal causes of low urine output should be suspected if there is sudden complete cessation of urine output. Common points of obstruction may result from spinal or epidural anesthetics, obstruction of a urinary catheter with mucus plug / blood, or from urethral edema following catheter removal. Oliguria caused by renal etiologies are uncommon but may be due to ischemic damage to the kidneys, administration of nephrotoxins, or transfusion reactions.

Type of Oliguria	Causes
Pre-Renal	Hypovolemia Decreased renal perfusion
Post-Renal	Ureteral / urethral obstruction Regional anesthetic induced urinary retention Urinary catheter obstruction Urethral edema
Renal	ATN Glomerular nephrosis Vasculitis Papillary necrosis Hepatorenal syndrome Severe hypercalcemia

Management of oliguria in a healthy patient at low risk for renal or post-renal causes:

1. Bolus of 5 to 10 ml/kg of isotonic crystalloid.
2. If urine output remains low and a urinary catheter has not been placed, have one put in.
3. If oliguria persists: 1) In patients without intra-abdominal pathology, irrigate the bladder. 2) In patients with abdominal pathology, abdominal ultrasound or other radiographic studies must be considered.
4. Try another fluid bolus if the patient is at low risk for CHF.
5. Obtain urinary indices and microscopic examination of urine.

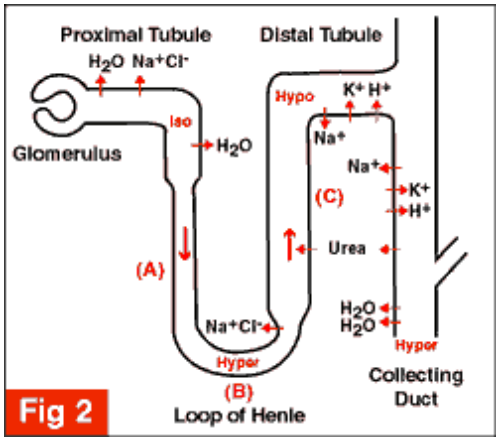

Fig 2

The use of diuretics to convert oliguric renal failure into non-oliguric renal failure has been well established. Issues to be considered:

A. Diuretic administration to hypovolemic patients may worsen the condition by increasing hypotension and adding to the danger of ischemic kidney damage.
B. Osmotic diuretics administered to hypervolemic patients can produce CHF by further increasing intravascular volume.
C. Giving diuretics will invalidate urinary indices measured for 12 hours after diuretic administration.
D. It may be prudent to delay diuretic administration until the cause of the oliguria can be established.