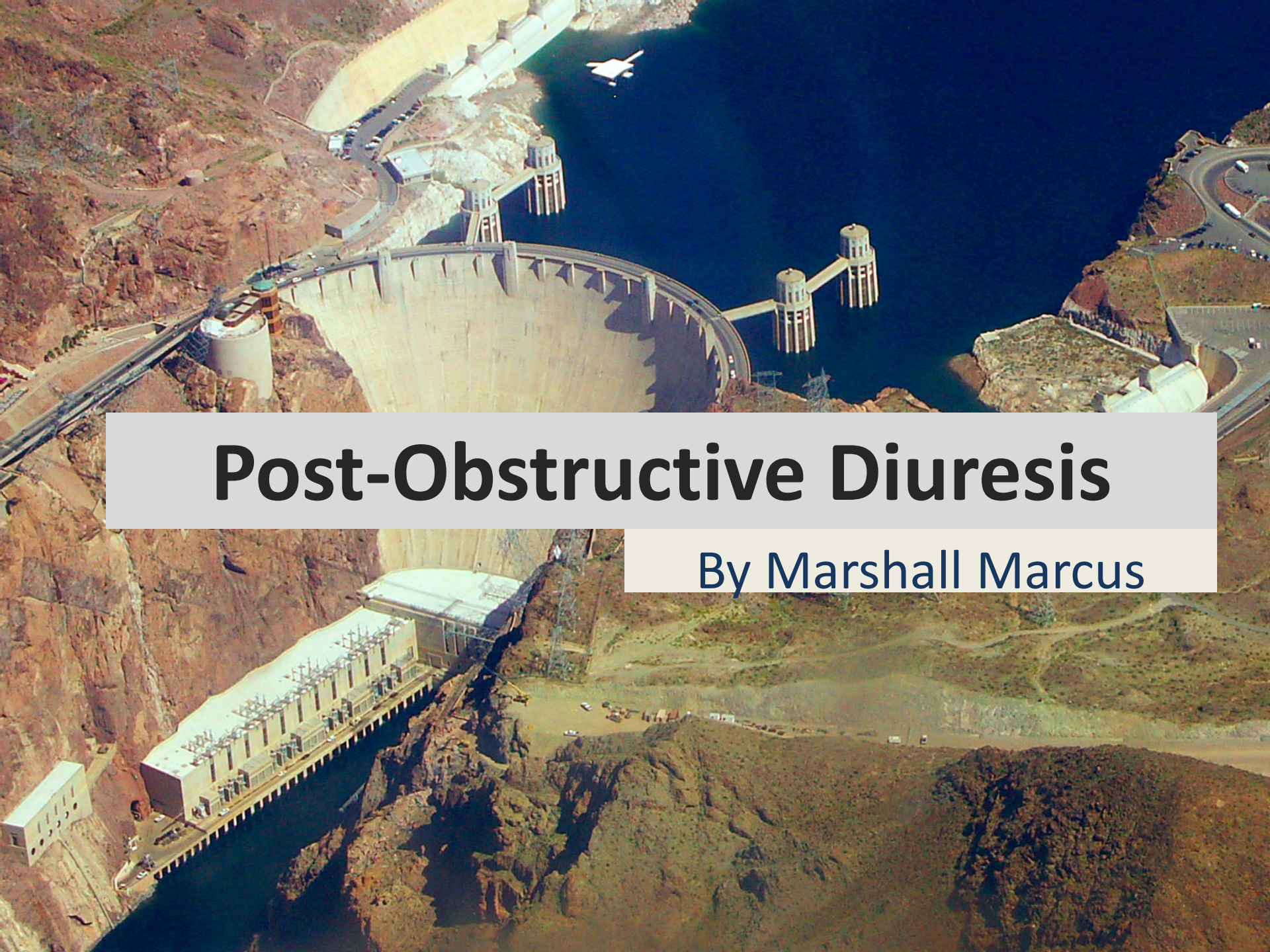

Post-Obstructive Diuresis

By Marshall Marcus

Causes of Urinary Tract Obstruction

TABLE 283-1 COMMON MECHANICAL CAUSES OF URINARY TRACT OBSTRUCTION

Ureter	Bladder Outlet	Urethra
Congenital		
Ureteropelvic junction narrowing or obstruction Ureterovesical junction narrowing or obstruction and reflux Ureterocele Retrocaval ureter	Bladder neck obstruction Ureterocele	Posterior urethral valves Anterior urethral valves Stricture Meatal stenosis Phimosis
Acquired Intrinsic Defects		
Calculi Inflammation Infection Trauma Sloughed papillae Tumor Blood clots Uric acid crystals	Benign prostatic hyperplasia Cancer of prostate Cancer of bladder Calculi Diabetic neuropathy Spinal cord disease Anticholinergic drugs and α-adrenergic antagonists	Stricture Tumor Calculi Trauma Phimosis
Acquired Extrinsic Defects		
Pregnant uterus Retroperitoneal fibrosis Aortic aneurysm Uterine leiomyomata Carcinoma of uterus, prostate, bladder, colon, rectum Lymphoma Pelvic inflammatory disease, endometriosis Accidental surgical ligation	Carcinoma of cervix, colon Trauma	Trauma

Bilateral Ureteral Obstruction – Pathophysiology

TABLE 283-2 PATHOPHYSIOLOGY OF BILATERAL URETERAL OBSTRUCTION

Hemodynamic Effects	Tubule Effects	Clinical Features
Acute		
↑Renal blood flow ↓GFR ↓Medullary blood flow ↑Vasodilator prostaglandins	↑Ureteral and tubule pressures ↑Reabsorption of Na^+, urea, water	Pain (capsule distention) Azotemia Oliguria or anuria
Chronic		
↓Renal blood flow ↓↓GFR ↑Vasoconstrictor prostaglandins ↑Renin-angiotensin production	↓Medullary osmolarity ↓Concentrating ability Structural damage; parenchymal atrophy ↓Transport functions for Na^+, K^+, H^+	Azotemia Hypertension ADH-insensitive polyuria Natriuresis Hyperkalemic, hyperchloremic acidosis
Release of Obstruction		
Slow ↑ in GFR (variable)	↓Tubule pressure ↑Solute load per nephron (urea, NaCl) Natriuretic factors present	Postobstructive diuresis Potential for volume depletion and electrolyte imbalance due to losses of Na^+, K^+, PO_4^{2-}, Mg^{2+}, and water

Note: GFR, glomerular filtration rate.

Post-Obstructive Diuresis – Key Points

- Post Obstructive Diuresis is a condition of bilateral obstruction
- Usually the Diuresis is APPROPRIATE
- Only replace urinary losses in the setting of…
  - Hypovolemia
  - Hypotension
  - Electroyte disturbances
- Replacing ≤ 2/3 (urinary loss/day) with .45% saline is usually effective
- Rarely, patients may need salt containing solutions to replace Na+ and volume deficits

Resources Cited

- The information contained herein was retrieved from Harrisons Principles of Internal Medicine 17th Edition

Thank You