Malignant Obstructive Uropathy

Community Cancer Care Conference
September 20, 2013

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Outline

• Causes of malignant ureteral obstruction
• Work up/Investigations
  • Imaging
• Management options
• Case examples
Etiology of Malignant Ureteric Obstruction

• Direct tumour invasion
  – cervical, colorectal, prostate, bladder
• Extrinsic ureteral compression
  – primary retroperitoneal/pelvic tumours
Etiology of Malignant Ureteric Obstruction

• Direct tumour invasion
  – cervical, colorectal, prostate, bladder

• Extrinsic ureteral compression
  – primary retroperitoneal/pelvic tumours

• Encasement by retroperitoneal lymph nodes
  – lymphoma, ovarian, testicular

• Retroperitoneal fibrosis induced by treatment
  – Chemotherapy, radiation, surgery
Urinary Tract Anatomy
Malignant Ureteric Obstruction

- Insidious and usually asymptomatic
- Generally detected on imaging
- Occasionally becomes apparent from renal failure
- Seldom from uric acid calculi from tumour lysis
Investigations

• Serum creatinine, BUN, electrolytes

• Imaging
  – Ultrasound
  – CT scan

• CBC, PTT/INR
Renal Ultrasound - Normal
Renal Ultrasound - Hydronephrosis
Renal Ultrasound - Hydronephrosis

Note: U/S often overcalls hydronephrosis
Intravenous Pyelogram (IVP)
IVP – obstruction on left
CT Scan - normal
CT Scan
Retroperitoneal lymph node
CT Scan
Bilateral Hydronephrosis
CT Scan
Retroperitoneal Lymphadenopathy
Treatment options

- Expectant management
- Percutaneous nephrostomy
- Ureteric stent insertion
Expectant management

- Patients with a poor prognosis
- Asymptomatic patients with normal renal function, especially if no treatment planned
- Not for symptomatic patients
- Balance between infection risk and optimizing renal function for chemotherapy
Percutaneous Nephrostomy
Insertion of Nephrostomy

Finder needle inserted under U/S guidance

Guide wire placed over which nephrostomy advanced
Nephrostogram - Ureteric obstruction
Nephrostomy complications

- Infection
- Obstruction
- Dislodgement
- Hematuria
- Need to be changed every few months
- Aggravation to patient
- Home care
Bilateral ureteric stents

Could be placed antegrade or retrograde
Retrograde pyelogram

Left ureteric obstruction
Retrograde stent placement
Ureteric stent complications

- Infection
- Flank pain
- Stent encrustation
- Migration
- Failure - obstruction
- Irritative voiding symptoms
- Hematuria
- Has to be changed every few months
Stent versus Nephrostomy

• Choose percutaneous nephrostomy if:
  – Bladder invasion – PCN then antegrade stent
  – Acute renal failure and creatinine really high
• Need nephrostomy if stent fails
• Stents often fail with extrinsic compression
• Anticoagulated patient
• Poorly mobile patients
Outcomes

• Median survival 7 months in several series
• No therapy after decompression portends poor prognostic factor
• 50% complication rate
• 35% stent failure requiring PCN

Ganatra AM and Loughlin KR. J Urol. Dec 2005
Case One

• 64 yo female with metastatic breast cancer and severe right hydronephrosis on CT scan
  – Asymptomatic
  – Has chemotherapy planned

• Creatinine normal

• Management?
Case One

- 64 yo female with metastatic breast cancer and severe right hydronephrosis on CT scan
  - Asymptomatic
  - Has chemotherapy planned
- Creatinine normal
- Consider stent to optimize renal function
- Patient will become immunocompromised
- What if can’t insert stent?
Case Two

- 64 yo female with metastatic breast cancer and severe right hydronephrosis on CT scan
  - Asymptomatic
  - Has chemotherapy planned
- Creatinine 250
- Management?
Case Two

- 64 yo female with metastatic breast cancer and severe right hydronephrosis on CT scan
  - Asymptomatic
  - Has chemotherapy planned
- Creatinine 250
- Stenting to optimize renal function
- What if can’t insert stent?
Unilateral hydronephrosis

- Determine if creatinine normal
- If not then urinary diversion
- If it is may not want to
- Complications of stent include infection and patient will become immunocompromised
Case Three

• 23 year old male with metastatic testis cancer
• Asymptomatic
• Creatinine normal
Case Three
Case Three
Case Four

• 59 yo male with castrate resistant prostate cancer
• PSA 570 and rising despite docetaxel then abiraterone
• Bilateral hydronephosis
• Creatinine 150
• Urinary diversion?
Conclusion

• Often patients with malignant ureteric obstruction have only limited survival and the required procedures can have an adverse effect on quality of life

• Decompression for should not be a knee-jerk response and should only be pursued after thoughtful counseling