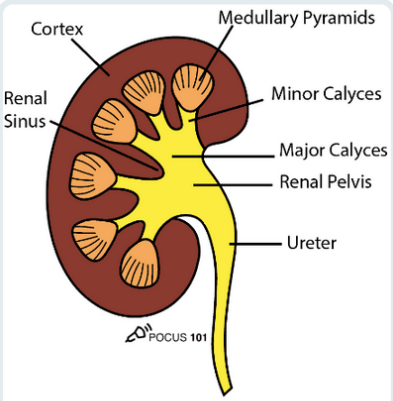
LESSON SUMMARY

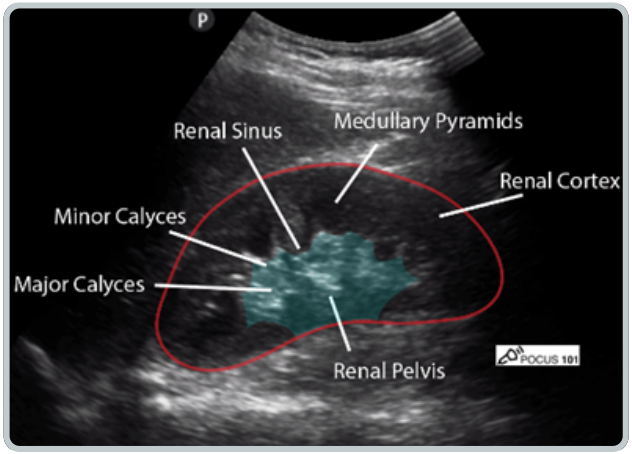
RENAL ULTRASOUND

Renal Assessment

- Indicator towards 11 o'clock on right side, towards 1 o'clock on left side
- Aim for 10th-12th ribs at mid-axillary line (liver edge); start right to left
- Normal kidney size in adults: 9-12cm

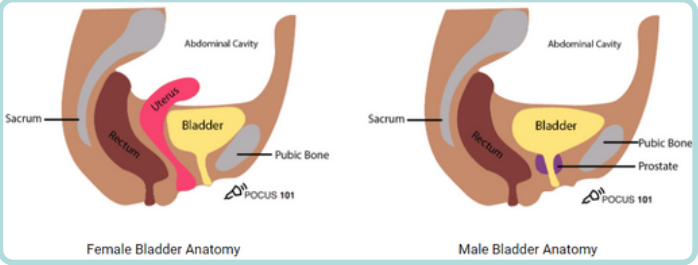


Key Renal Structures

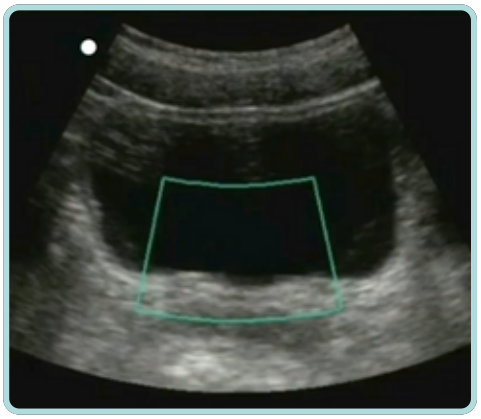


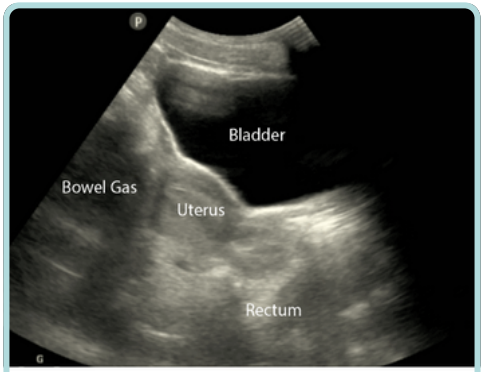
Bladder Assessment

- Indicator towards patient's head (sagittal view) or right side (coronal view)
- Located superior to the pubic symphysis in sagittal view

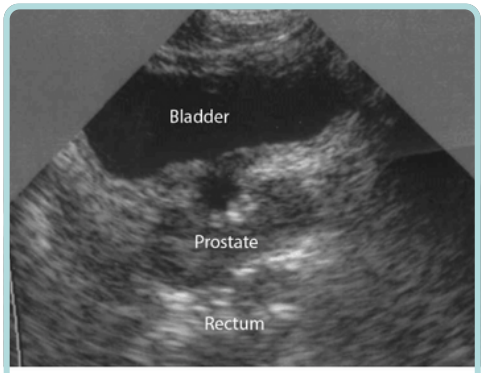


Female Bladder Anatomy | Male Bladder Anatomy





Female Bladder Ultrasound - Sagittal View



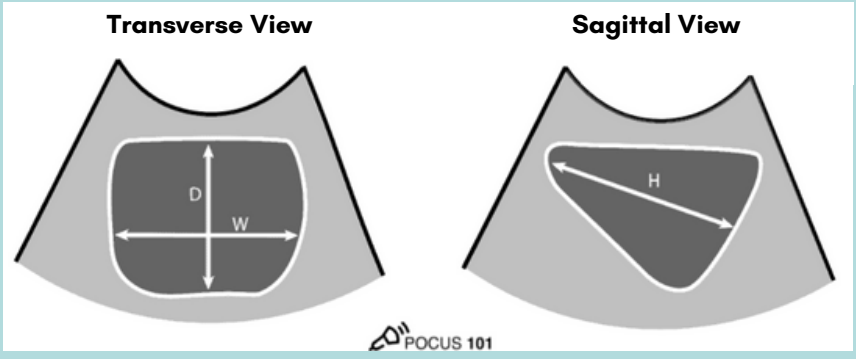
Male Bladder Ultrasound - Transverse View

Bladder Volume = Width x Depth x Height x 0.7*

*0.7 is the correction coefficient. This value depends on the shape of the bladder.

3 measurements are needed to calculate bladder volume:

- Transverse view:
  1. **Width** (left to right)
  2. **Depth** (top to bottom)
- Longitudinal view:
  3. **Height** (left to right)



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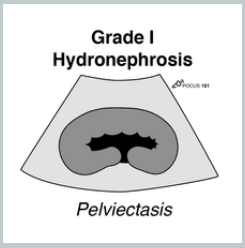
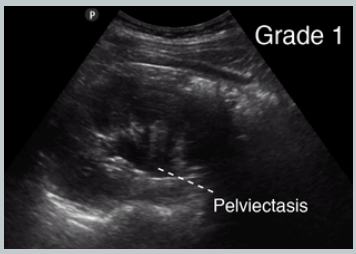
“Can’t Miss” Pathology - What to Look For

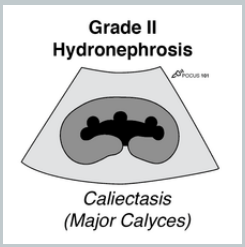
Hydronephrosis

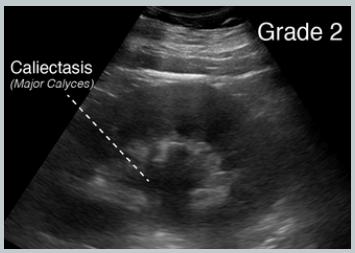
- Measured on a grading scale from mild to severe
- Based on calyceal effacement and cortical thinning

MILD

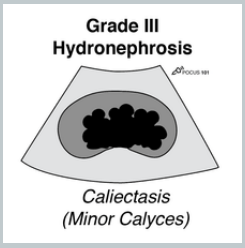


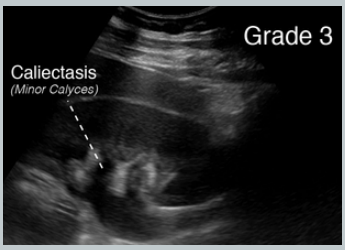


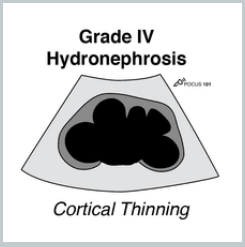


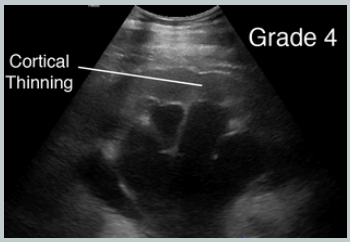


MODERATE



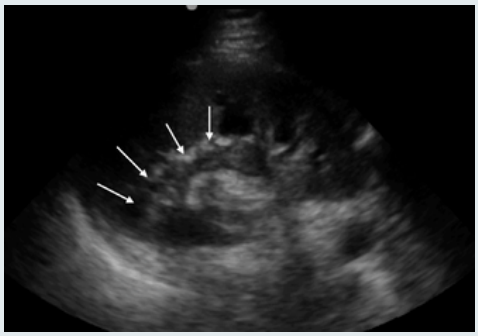




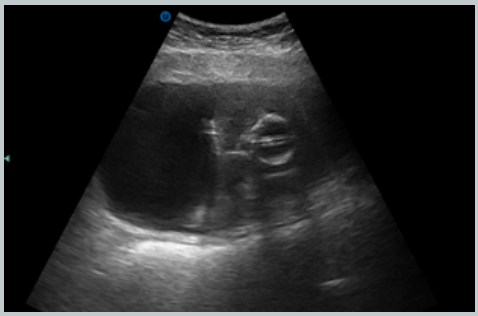


SEVERE

Renal Mass

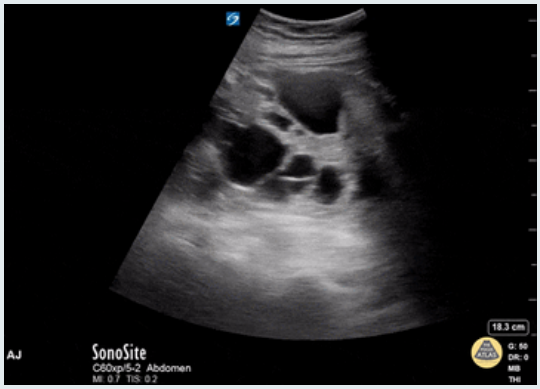


Bladder Mass



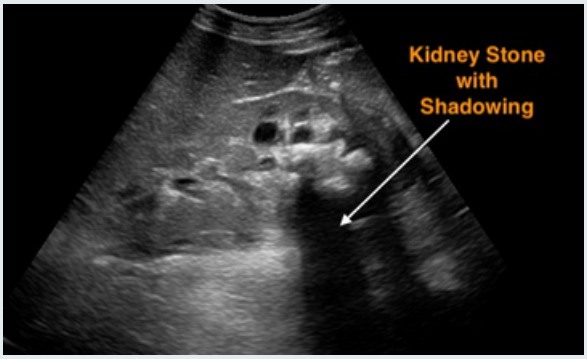
Polycystic Kidney Disease

- Well-circumscribed round or oval structures
- Generally hypoechoic



Kidney Stones

- Highly echogenic structure
- Shadowing effect around stones, since they do not allow ultrasound waves to penetrate



Foley Catheter

- Well-circumscribed, bright white or hypoechoic
- Very reflective

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