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Case No. 1

Medical History:

A 50 year old man was admitted with fever and right flank pain. He has a 12 year history of stone formation, and was treated with ESWL twice due to right ureteral stones 10 and 12 years ago. He was diagnosed with right kidney pyelonephritis.

Images:

KUB: A large right lumbar radiopaque stone.

IVP: A dilatation of right renal cavities and a large stone in the right proximal ureter.

Biological Tests:

Blood Tests:

WBC:	11.8 x 10 ⁹ /L	(3.8-10.6)
RBC:	5.02 x 10 ¹² /L	(4.4-5.9)
PLT:	340 x 10 ⁹ /L	(140-430)
Hgb:	15.9 g/dL	(13-18)
Hct:	39.4 %	(40-52)
Na:	143 mmol/L	(135-145)
K:	4.1 mmol/L	(3.5-5.0)
Ca:	2.19 mmol/L	(2.12-2.62)
Creatinine:	1.12 mg/dL	(0.7-1.3)
INR:	0.98	(0.88-1.2)
PTT:	29 sec.	(<30)

Urine Tests:

WBC:	positive	
RBC:	positive	
pH:	6	(5-8)
Urine-Culture:	positive	
Nitrite:	positive	

Main Tasks:

1. Access the dilated kidney.
2. Nephrostomy catheter placement for urinary diversion.



Created in collaboration with Dr. T. Knoll MD PhD and Dr. M.S. Michel MD, Department of Urology, University Hospital Mannheim, Germany. Symbionix Ltd. (2002)



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Case No. 2

Medical History:

A 45 year old male suffering from chronic mild right flank pain. He has no fever and no previous medical history.

Images:

KUB: Right kidney: 18x10 mm stone
Left kidney: 8x6 mm stone

IVP: Right kidney: lower pole stone

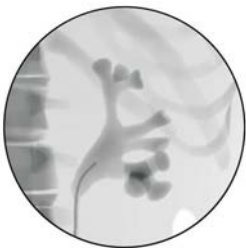
Biological Tests:

Blood Tests:

WBC:	5.6 giga/L	(4.25-10.5)
RBC:	4.5 tera/L	(4.2-5.6)
PLT:	275 giga/L	(150-400)
Hgb:	14.0 g/100mL	(8.1-17.7)
Hct:	40%	(38-52)
Na:	143 mmol/L	(135-145)
K:	4.6 mmol/L	(3.5-5.0)
Ca:	2.5 mmol/L	(2.1-2.75)
Creatinine:	95 µmol/L	(59-115)
INR:	1.1	(0.88-1.2)
PTT:	95%	(70-100)

Urine Tests:

WBC:	7,000/mL	(<8,000)
RBC:	8,000/mL	(<3,000)
Ph:	7.0	(6.5-7.4)
Nitrite:	Negative	



Main Tasks:

1. Establish a percutaneous tract to the stone through an appropriate calyx (recommended access: through lower pole).
2. Guide wire manipulation down the ureter.

Created in collaboration with Prof E. Lechevallier, Department of Urology, Salvator Hospital, Marseille, France. Symbionix Ltd. (2002)



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Case No. 3

Medical History

A 52 year old male with history of LBP. Failed ESWL treatment two months prior to admission.

Images:

KUB: Right kidney stone (1.5 x 1 cm)

IVP: Severe dilatation of upper, mid and lower poles of right kidney. An intrarenal pelvis, with a stone obstructing the infundibulum of the upper pole.

Biological Tests:

Blood Tests:

WBC:	6.7 x 10 ⁹ /L	(4.00-11.00)
RBC:	4.3 x 10 ¹² /L	(3.80-5.20)
PLT:	370 x 10 ⁹ /L	(140-430)
Hgb:	13.0 g/dL	(11.5-16.0)
Hct:	41%	(37-46)
Na:	138 mmol/L	(135-145)
K:	3.7 mmol/L	(3.5-5.0)
Creatinine:	1.2 mg/dL	(0.7-1.4)
INR:	1.09	(0.88-1.2)

Urine Tests:

WBC:	Negative	
RBC:	Negative	
Ph:	6	(5-8)
Urine Culture:	Negative	
Nitrite:	Negative	



Main Tasks:

1. Establish a percutaneous tract to the stone through an appropriate calyx (recommended access: through upper or lower pole).
2. Manipulate a guide wire into the collecting system.
3. Place a nephrostomy catheter in the system.

Created in collaboration with Dr. Yoram Siegel, Assaf Harofe Medical Center, Israel. Symbionix Ltd. (2002)



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Case No. 4

Medical History:

A 78 year old man with a long history of stone disease, who underwent a right ureterolithotomy and left pyelolithotomy thirty years ago. He recently experienced mild intermittent right upper quadrant and right flank pain and was noted to have pyuria on urinalysis.

Images:

KUB: A large renal pelvic stone and a few small lower stones in the right kidney.

IVP: Dilated upper pole and lower pole calyces in the right kidney. A delayed and weak excretion in the left kidney.

Biological Tests:

Blood Tests:

WBC:	6.3 x 10 ³ U/L	(4.1-10.9)
RBC:	4.7 x 10 ⁶ U/L	(4-5.2)
PLT:	150 x 10 ³ U/L	(140-440)
Hgb:	14.5 g/dL	(12-15.2)
Hct:	40%	(37-46)
Na:	137 mmol/L	(136-143)
K:	4.3 mmol/L	(3.6-5.0)
Ca:	9.0 mg/dL	(8.9-10.4)
Creatinine:	1.1 mg/dL	(0.7-1.4)
PTT:	27 sec.	(<30)

Urine:

WBC:	5-10/HPF	(0)
RBC:	5-10/HPF	(3-5)
Ph:	5	(5-8)
Urine Culture:	Negative	



Main Tasks:

1. Establish a percutaneous tract to the stones through an appropriate calyx (recommended access: through upper or lower pole).
2. Guide wire manipulation past the renal pelvic stone and down the ureter.

Created in collaboration with Associate Professor Margaret S. Pearle, Department of Urology, The University of Texas Southwestern Medical Center, Dallas. Symbionix Ltd. (2002)



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Case No. 5

Medical History:

A 28 year old man referred to the clinic due to spontaneous migration of a right ureteral stone. Work-up revealed a right renal staghorn calculus.

Images:

KUB: Right kidney: A large stone in the renal pelvis, and several stones fragments within the lower calyx.

IVP: A dilatation of right renal cavities, especially the cliceal cavities, and the stone is obstructing the right UPJ.

Biological Tests:

Blood Tests:

WBC:	11 giga/L	(3.2-9.8)
RBC:	5.09 tera/L	(4.3-5.9)
PLT:	370 giga/L	(150-450)
Hgb:	15.2 /100mL	(12-16)
Hct:	45%	(39-49)
Creatinine:	115 μ mol/L	(59-115)
INR:	1.15	(0.88-1.2)

Urine Tests:

WBC:	48,000/mL	(< 10,000)
RBC:	250,000/mL	(< 10,000)
Urine culture:	Negative	

Main Tasks:

1. Establish a percutaneous tract to the stone through an appropriate calyx (recommended access: through middle calyx).
2. Guide wire manipulation past the stone and down the ureter.



*Created in collaboration with Prof Thierry Flam, Department of Urology, Hospital Cochin, Paris, France.
Symbionix Ltd. (2002)*



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Case No. 6

Medical History:

A 28 year old asymptomatic patient. A routine examination revealed an occult urinary infection with E. Coli.

Images:

KUB: Right kidney: A staghorn calculus - a large stone in the renal pelvis and calyces.

IVP: A dilatation of the right caliceal cavities.

Biological Tests:

Blood Tests:

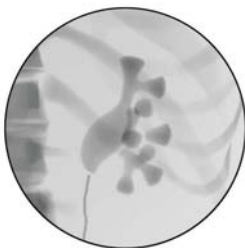
WBC:	8.2 giga/L	(3.2-9.8)
RBC:	4.7 tera/L	(4.3-5.9)
PLT:	254 giga/L	(150-450)
Hgb:	12.5 /100mL	(12-16)
Hct:	37.7 %	(33-43)
Creatinine:	100 µmol/L	(59-115)
INR:	1.05	(0.88-1.2)

Urine Tests:

WBC:	4,700,000/mL	(< 10,000)
RBC:	50,000/mL	(< 10,000)
Urine Culture:	10,000,000/mL E.Coli	

Main Tasks:

1. Establish a percutaneous tract to the stone through an appropriate calyx (recommended access: through upper calyx).
2. Guide wire manipulation past the renal pelvis and down the ureter.



Created in collaboration with Prof Thierry Flam, Department of Urology, Hospital Cochin, Paris, France. Symbionix Ltd. (2002)



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Case No. 7

Medical History:

A 30 year old male suffering from acute right flank pain for 24 hours. He has no fever and no previous medical history.

Images:

KUB: 13 small stones in mid-portion right kidney.

IVP: Mid calyx diverticulum.

US: Thin renal parenchyma.

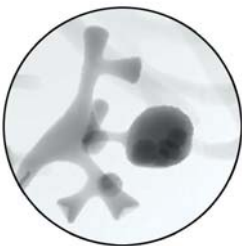
Biological Tests:

Blood Tests:

WBC:	5.3 giga/L	(4.25-10.5)
RBC:	4.8 tera/L	(4.2-5.6)
PLT:	250 giga/L	(150-400)
Hgb:	9.0 g/100mL	(8.1-17.7)
Hct:	40%	(38-52)
Na:	142 mmol/L	(135-145)
K:	4.0 mmol/L	(3.5-5.0)
Ca:	2.5 mmol/L	(2.1-2.75)
Creatinine:	98 µmol/L	(59-115)
PTT:	95%	(70-100)

Urine Tests:

WBC:	5,000/mL	(<8,000)
RBC:	8,000/mL	(<3,000)
Ph:	7.0	(6.5-7.4)
Nitrite:	Negative	



Main Tasks:

1. Establish a transdiverticular percutaneous tract.
2. Guide wire manipulation through the diverticulum neck and down the ureter.

*Created in collaboration with Prof E. Lechevallier, Department of Urology, Salvator Hospital, Marseille, France.
Symbionix Ltd. (2002)*