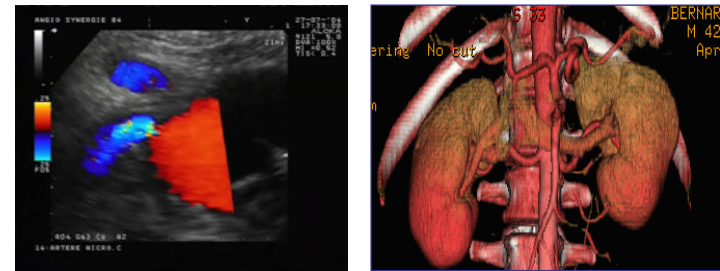
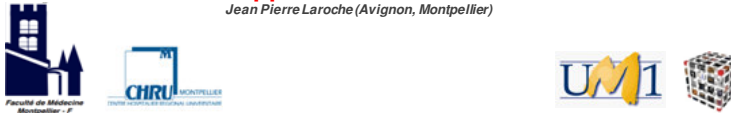


ANGIO SYNERGIE 04  
BERNARD M 42  
Apr  
ring No cut  
14-ARTERE RECH. C

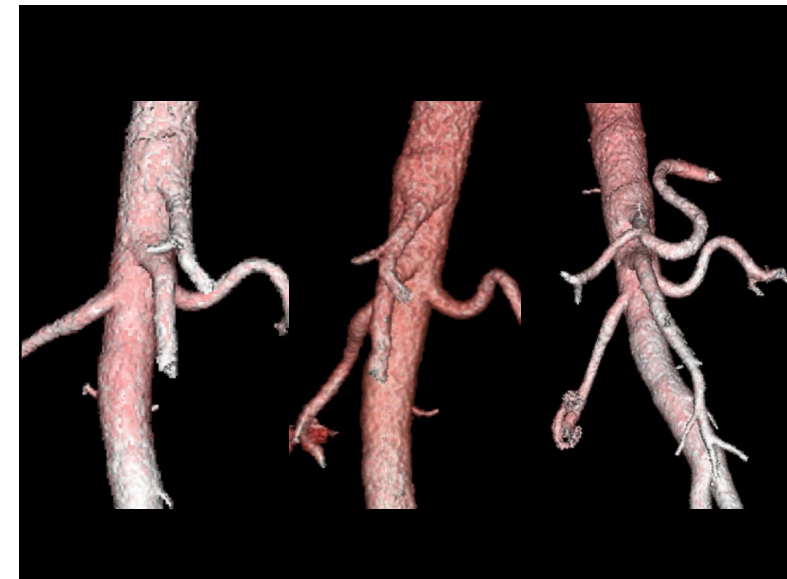
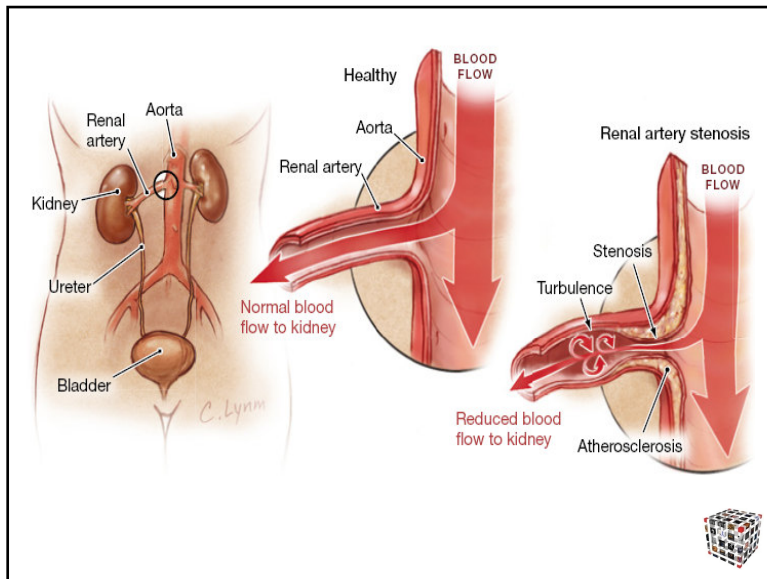
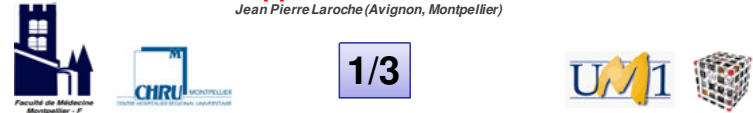
**Echo Doppler des Artères Rénales**  
Jean Pierre Laroche (Avignon, Montpellier)

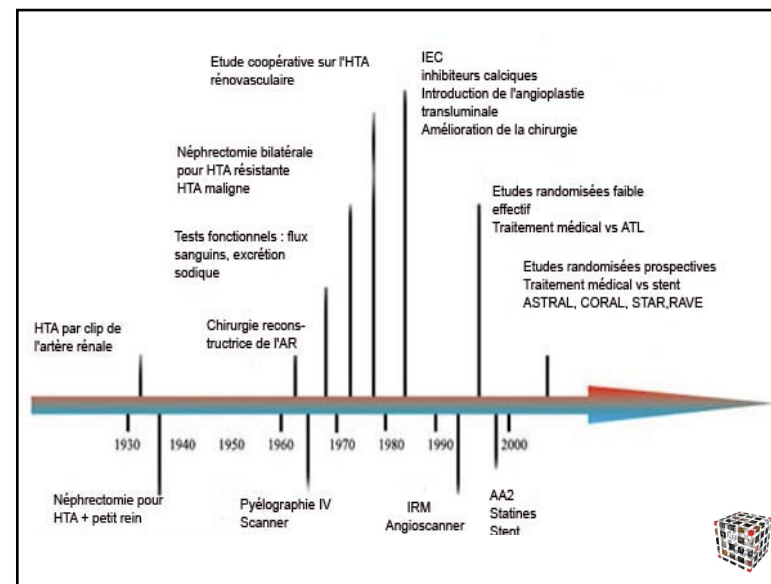
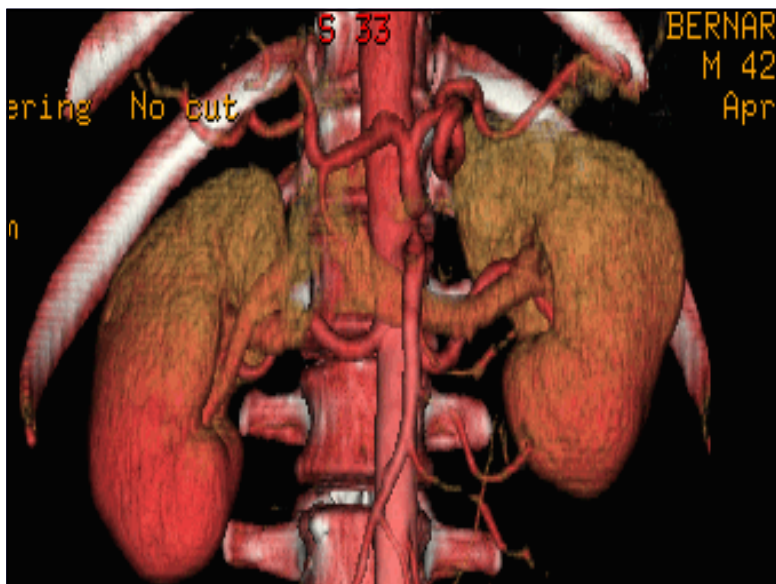


ANGIO SYNERGIE 04  
BERNARD M 42  
Apr  
ring No cut  
14-ARTERE RECH. C

**Echo Doppler des Artères Rénales**  
Jean Pierre Laroche (Avignon, Montpellier)

1/3





## Vascular Medicine

<http://vmj.sagepub.com>

**Guidelines for noninvasive vascular laboratory testing: a report from the American Society of Echocardiography and the Society for Vascular Medicine and Biology**  
 Marie Gerhard-Herman, Julius M Gardin, Michael Jaff, Emile Mohler, Mary Roman and Tasneem Z Naqvi  
*Vasc Med* 2006; 11: 183  
 DOI: 10.1177/1358863x06070516

<p><b>Table 5</b> Indications for renal duplex ultrasound.<sup>24</sup></p> <ul style="list-style-type: none"> <li>• Sudden exacerbation of previously well-controlled hypertension</li> <li>• New onset hypertension at a young age</li> <li>• Malignant hypertension</li> <li>• Unexplained azotemia</li> <li>• Hypertension and aortic/iliac or infrainguinal atherosclerosis</li> <li>• Azotemia after administration of an angiotensin-converting enzyme inhibitor</li> <li>• An atrophic kidney</li> <li>• Recurrent flash pulmonary edema without cardiac explanation</li> <li>• Evaluation of adequacy of renal artery revascularization</li> <li>• Detection of restenosis after endovascular therapy</li> </ul>	<p><b>Table 6</b> Diagnostic criteria for significant renal artery stenosis.</p> <p>Renal artery to aorta peak systolic velocity ratio is &gt;3.5                  PSV &gt; 200 cm/s with evidence of poststenotic turbulence                  EDV &gt; 150 cm/s (&gt;80% renal artery stenosis)                  RI &gt; 0.8 (used to predict response of blood pressure, renal function, to renal revascularization)                  An occluded renal artery demonstrates no flow in the affected vessel</p> <p>EDV, End-diastolic velocity; PSV, peak systolic velocity; RI, resistive index (1 - [EDV/maximum systolic velocity] × 100).</p>
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*Vascular Med* 2006

# Circulation

American Heart Association

*Learn and Live™*

JOURNAL OF THE AMERICAN HEART ASSOCIATION

**ACC/AHA 2005 practice Guidelines for the Management of Patients With Peripheral Arterial Disease (Lower Extremity, Renal, Mesenteric, and Abdominal Aortic)**


*Circulation* 2006;113:1474-1547  
 DOI: 10.1161/CIRCULATIONAHA.106.173994

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214  
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**Clinical Clues to the Diagnosis of Renal Artery Stenosis**

1. Onset of hypertension before the age of 30 years or severe hypertension after the age of 55.\* (Class I; LOE B)
2. Accelerated, resistant, or malignant hypertension.\* (Class I; LOE C)
3. Development of new azotemia or worsening renal function after administration of an ACE inhibitor or ARB agent. (Class I; LOE B)
4. Unexplained atrophic kidney or size discrepancy between kidneys of greater than 1.5 cm.† (Class I; LOE B)
5. Sudden, unexplained pulmonary edema. (Class I; LOE B)
6. Unexplained renal dysfunction, including individuals starting renal replacement therapy. (Class IIa; LOE B)
7. Multi-vessel coronary artery disease. (Class IIb; LOE B)
8. Unexplained congestive heart failure. (Class IIb; LOE C)
9. Refractory angina. (Class IIb; LOE C)

**Recommandations AHA 2005  
 Circulation 2006**




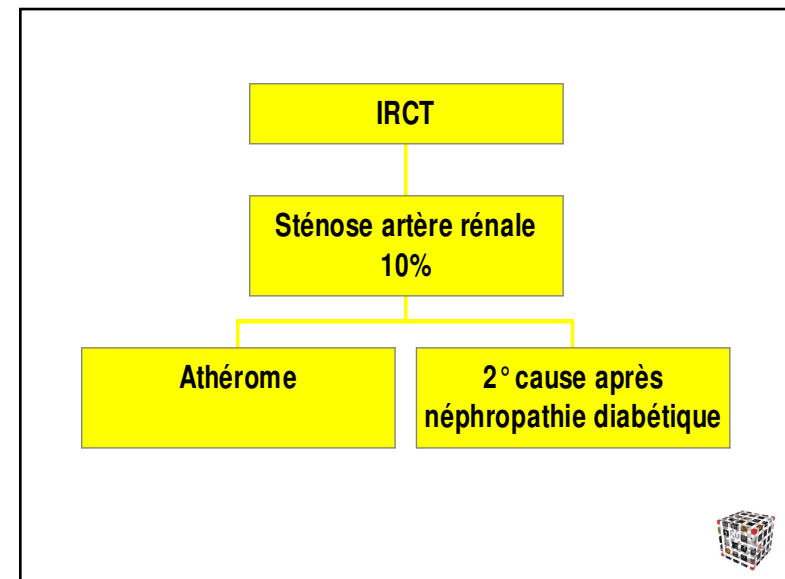
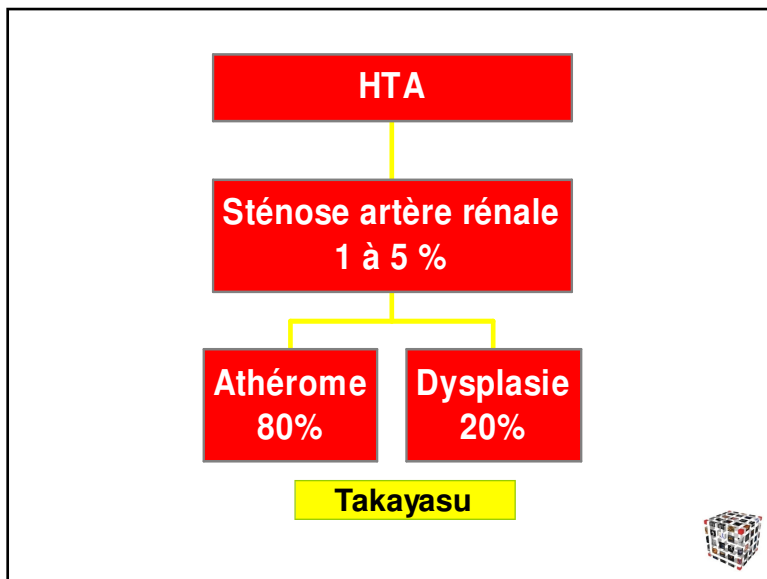
**Facteurs de risque de sténose de l'artère rénale athéromateuse**

HTA chez un patient polyvasculaire, le plus souvent fumeur actuel ou sevré  
 HTA et œdème aigu du poumon *flash*  
 HTA réfractaire  
 HTA et dégradation de la fonction rénale progressive  
 Insuffisance rénale aiguë sous inhibiteur de l'enzyme de conversion ou sous antagoniste des récepteurs AT1 de l'angiotensine II  
 HTA et asymétrie de la taille des reins en l'absence d'antécédents urologiques

**Facteurs de mauvais pronostic avant revascularisation**

Protéinurie massive  
 Index de résistance intra-rénal (côté sténose ou le plus sténosé) > 0,80  
 Rénine basse  
 Taille de rein < 8 cm  
 Débit de filtration glomérulaire < 60 mL/min stable  
 Sténose unilatérale  
 Scintigraphie rénale post-captopril négative

**Presse Med 2009**

## Sténose artère rénale

### ■ ATHEROME

Age > 50  
 Sexe : idem  
 Ostium/Proximalité  
 Thrombose  
 DEL, Chirurgie

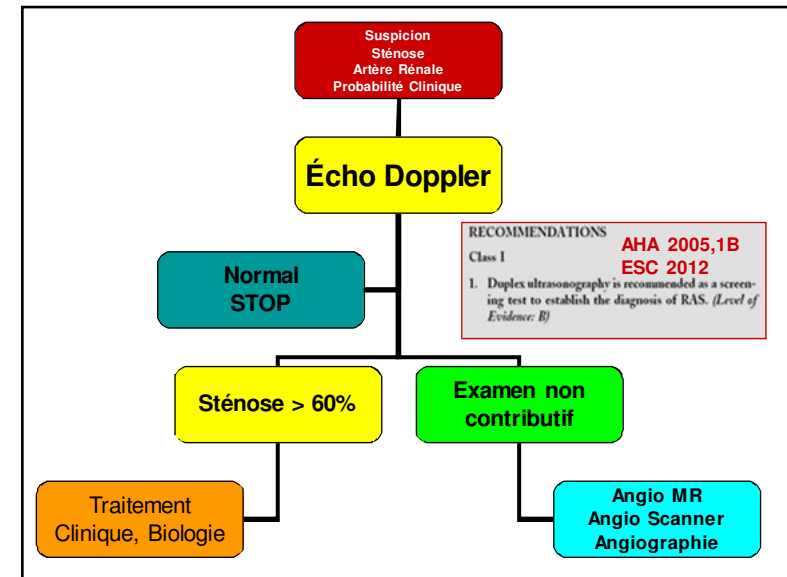
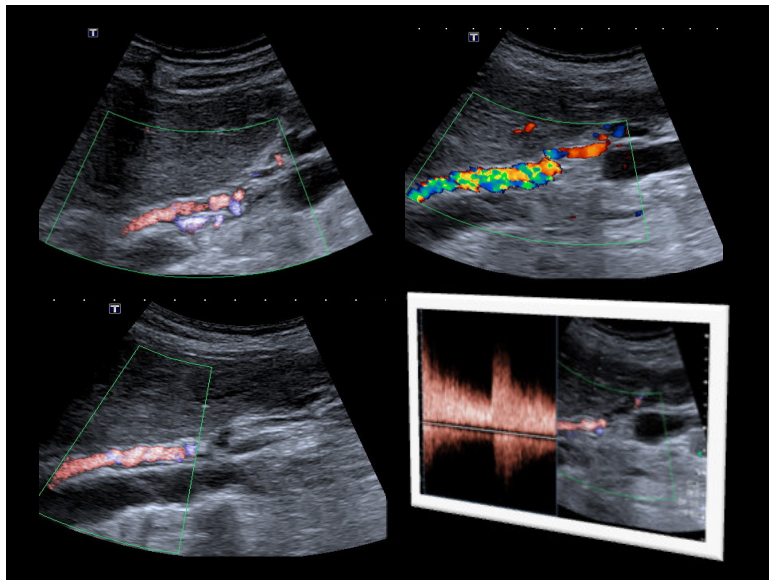
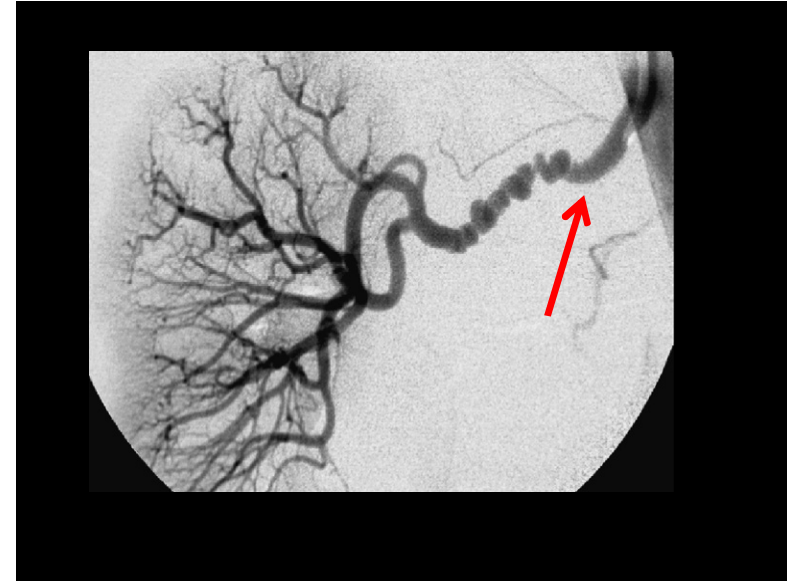


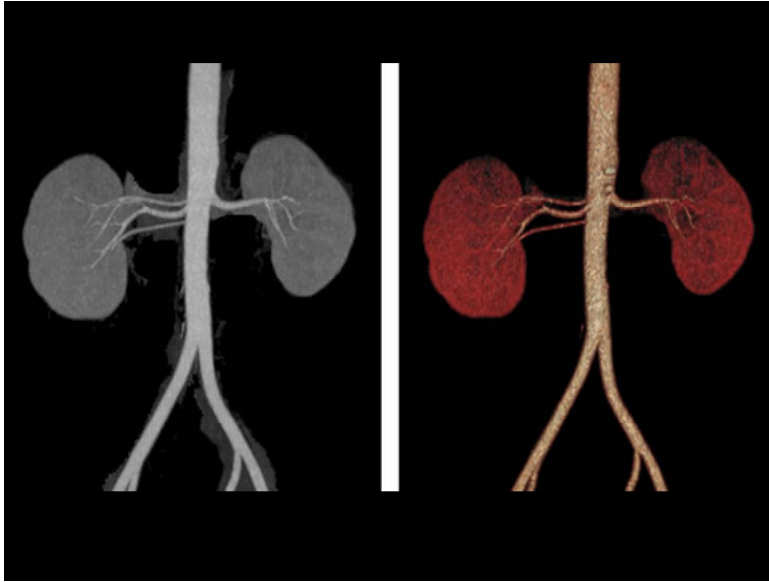
### ■ DYSPLASIE

Age < 30/40  
 Sexe : femme  
 Mediale/Distalité.  
 Anévrisme  
 DEL



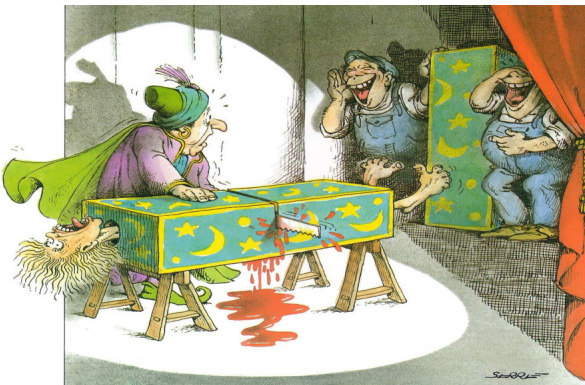
- Atnip RG : Vascular Disease (Strandness DE), 1994 -





### Le Matériel

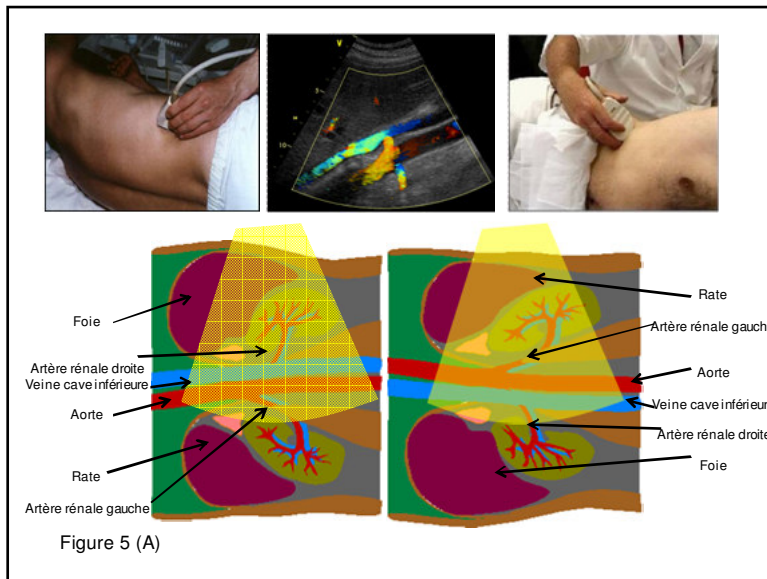
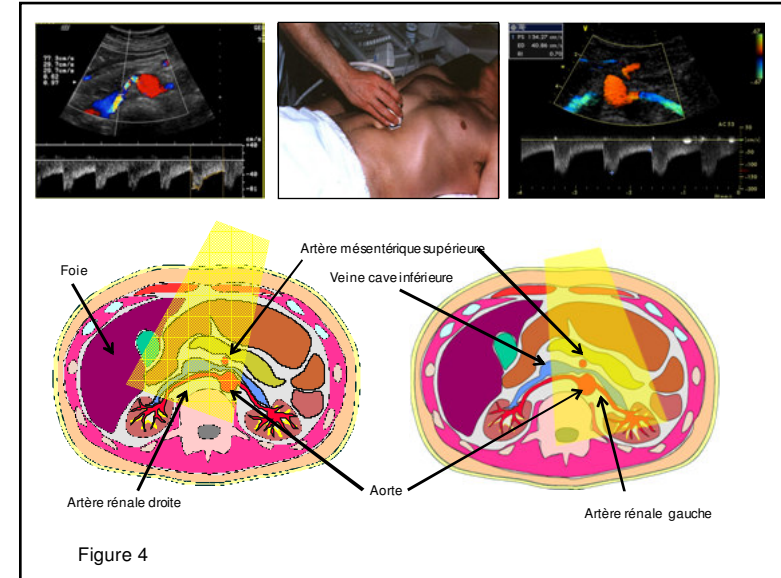
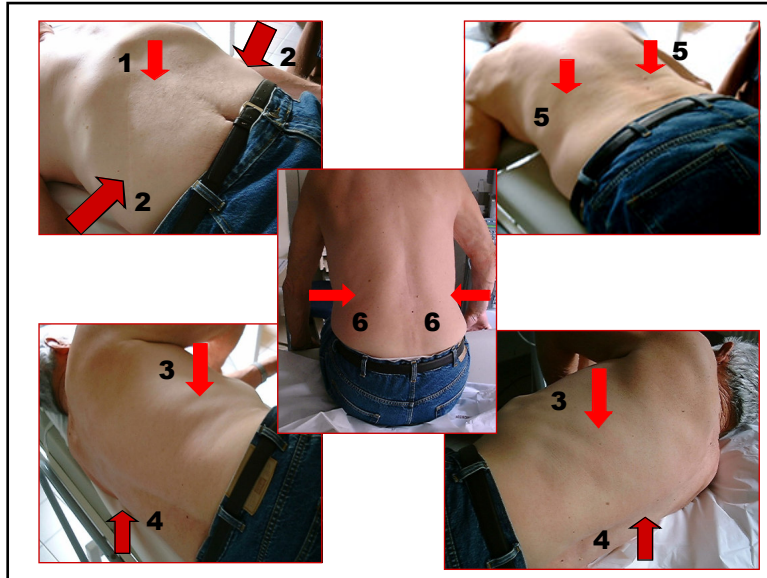
- Écho Doppler Couleur
- Sondes de basse fréquence, convexe, phased array



### Méthodologie : Les voies d'abord

Organes	Position du Patient Voies d'abord
Aorte	Décubitus Dorsal
Reins	Décubitus Latéral Gauche et Droit Procubitus
Artères Rénales	Décubitus Dorsal Décubitus Latéral Droit et Gauche Procubitus Assis
Perfusion Rénale	Décubitus Latéral Droit et Gauche



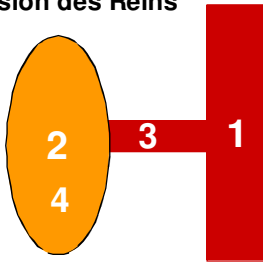


### Méthodologie : Préparation du patient

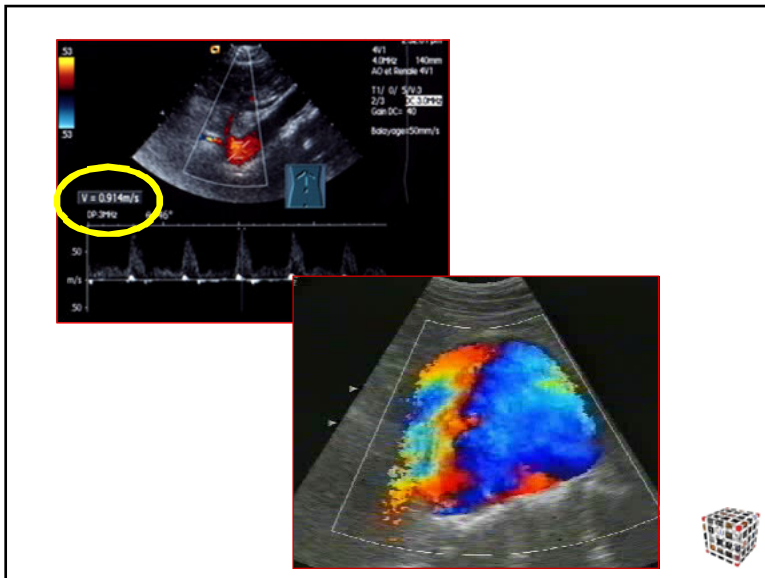
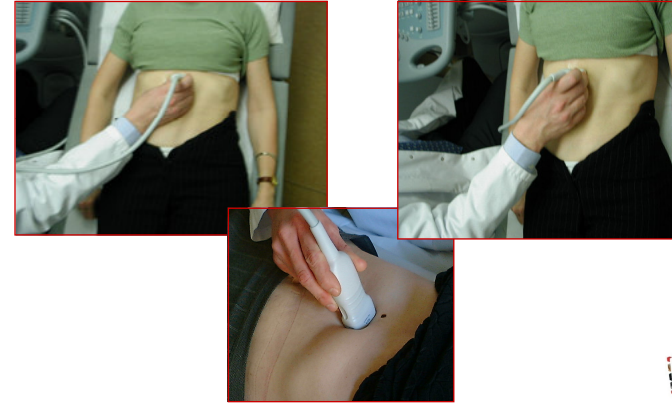
- De préférence à jeun (Théorie)
- En cas d'échec : préparation colique (Zymoplex, X Prep, Prépacol).
- Faisabilité : 98%

### Méthodologie : les différents temps de l'examen

- 1. Aorte : détection anévrisme, plaque paroi, VSM
- 2. Reins : échographie rénale avec mensurations des reins
- 3. Artères Rénales : ostium, portion moyenne, distalité
- 4. Perfusion des Reins

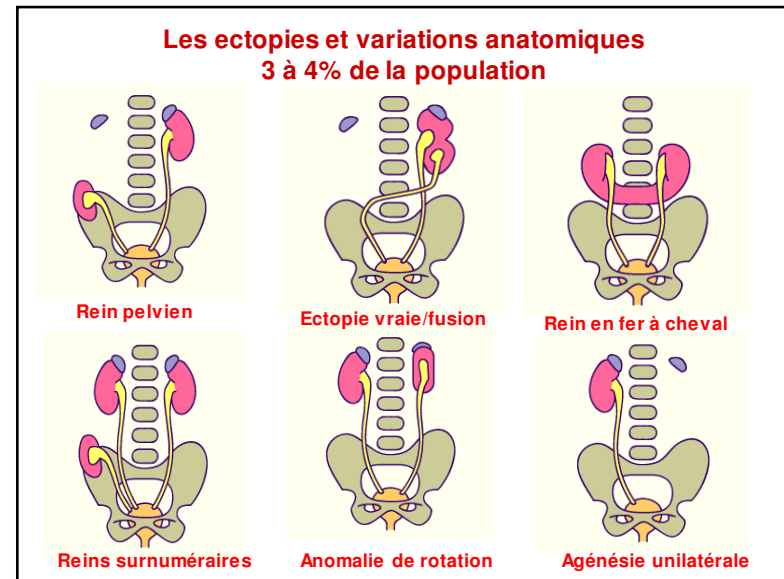
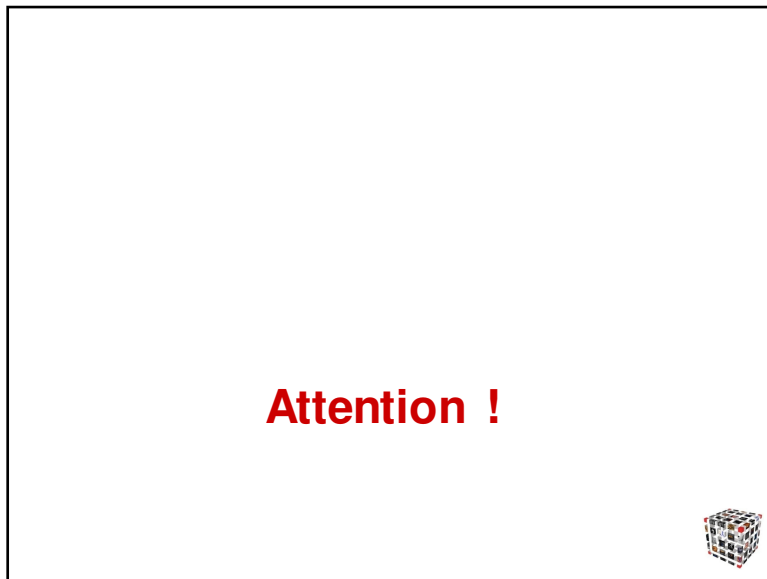
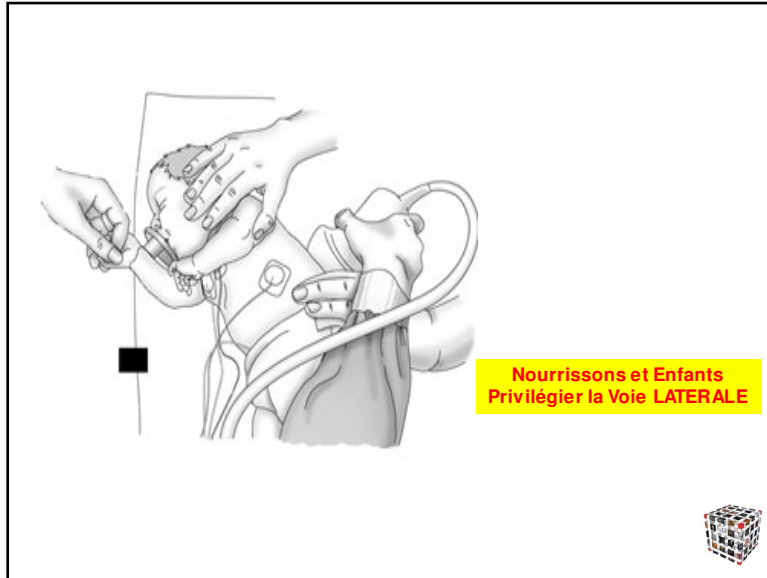


### Méthodologie : Temps 1, Étude de l'Aorte Abdominale sous rénale

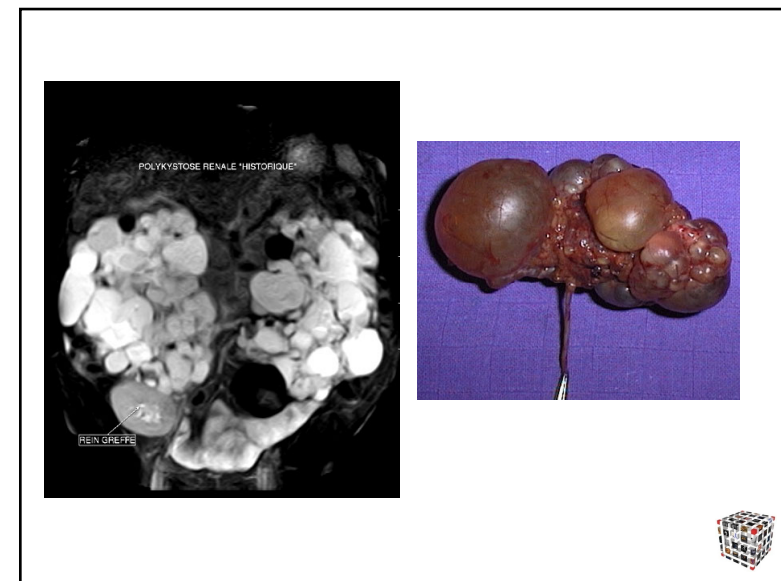
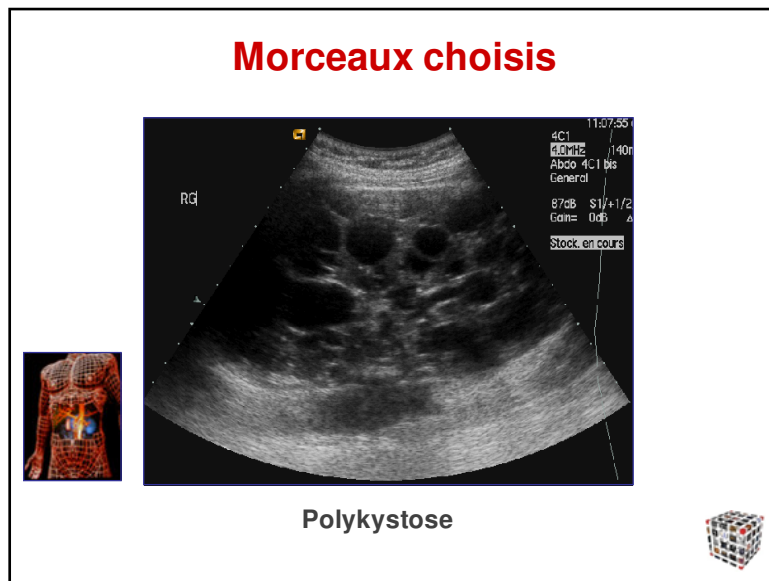
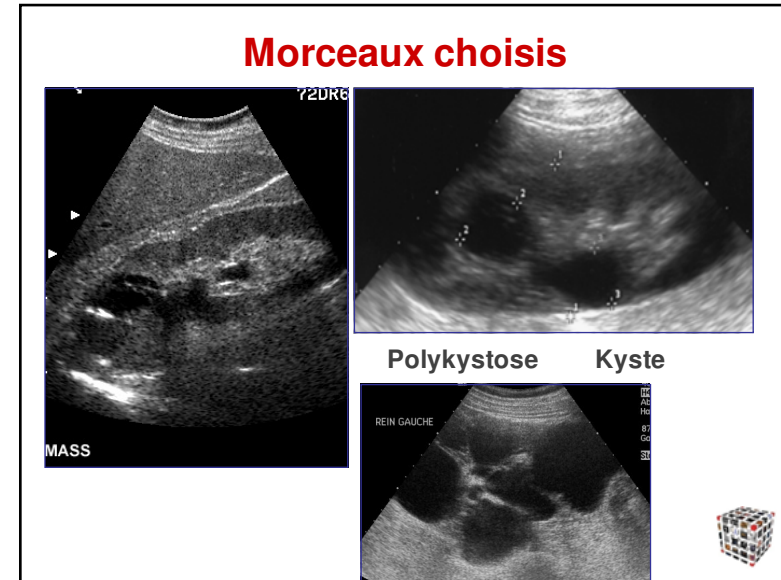
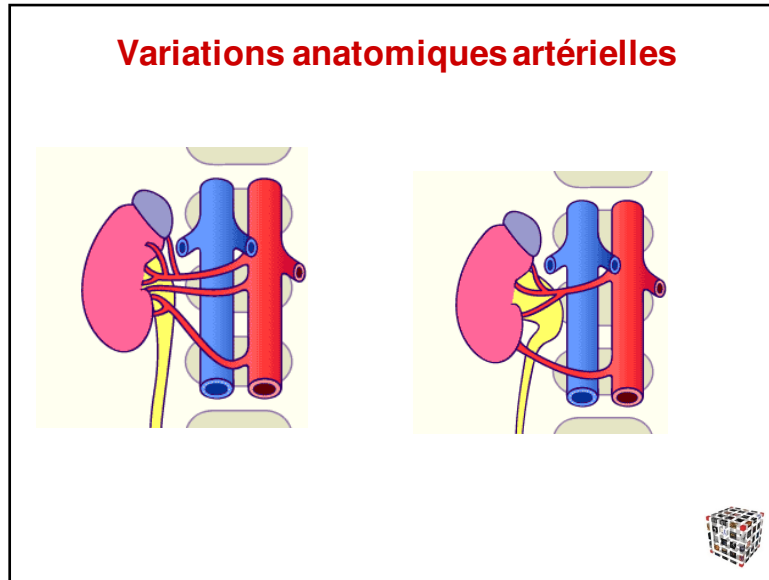


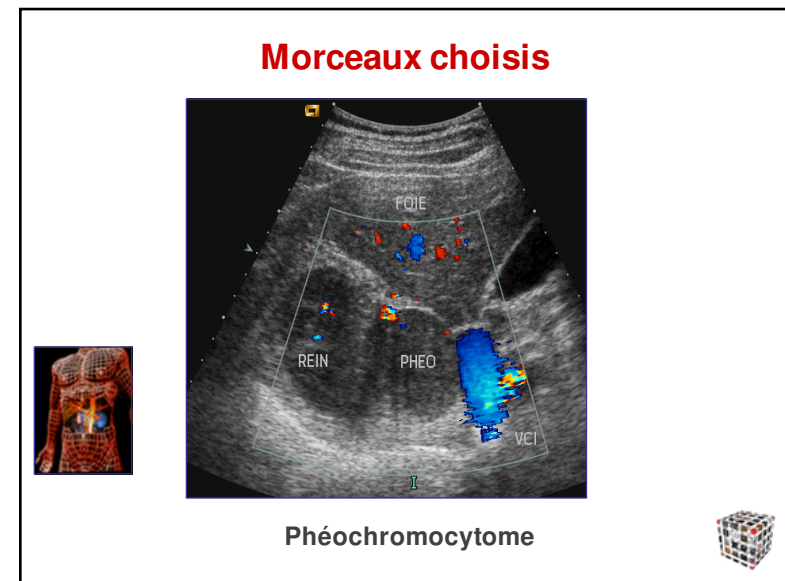
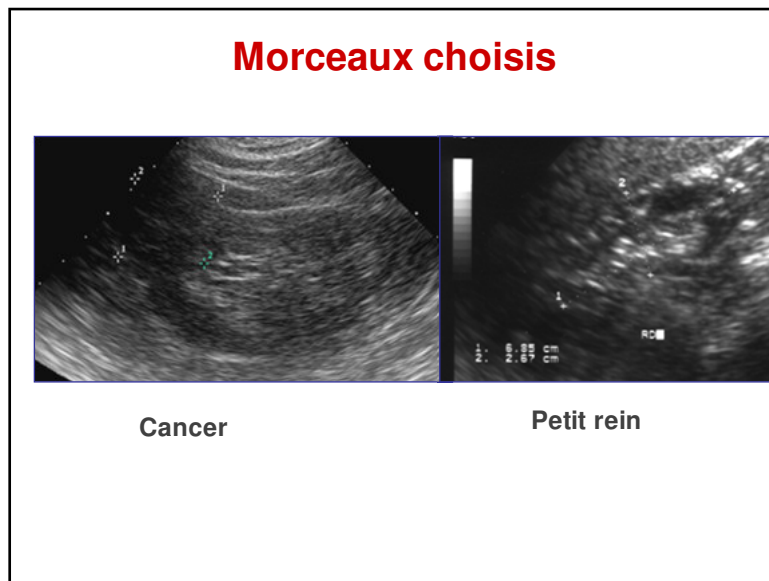
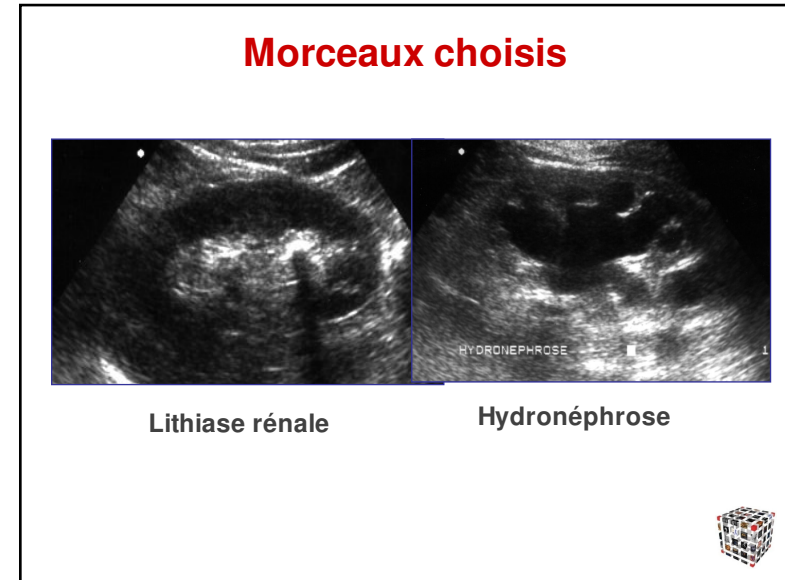
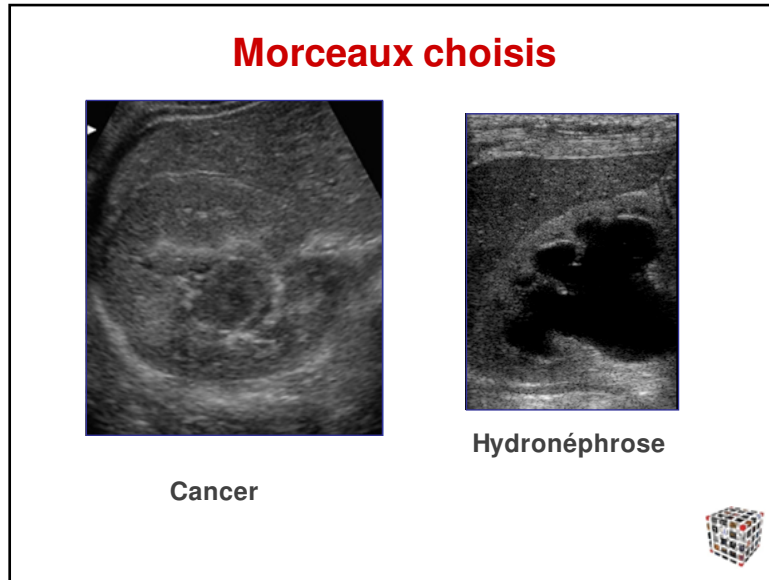
### Méthodologie : Temps 2, Échographie des Loges Rénales

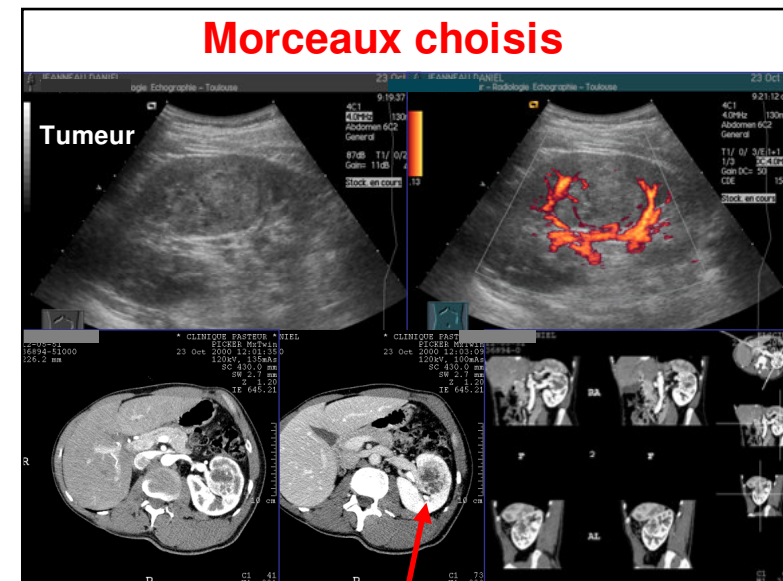
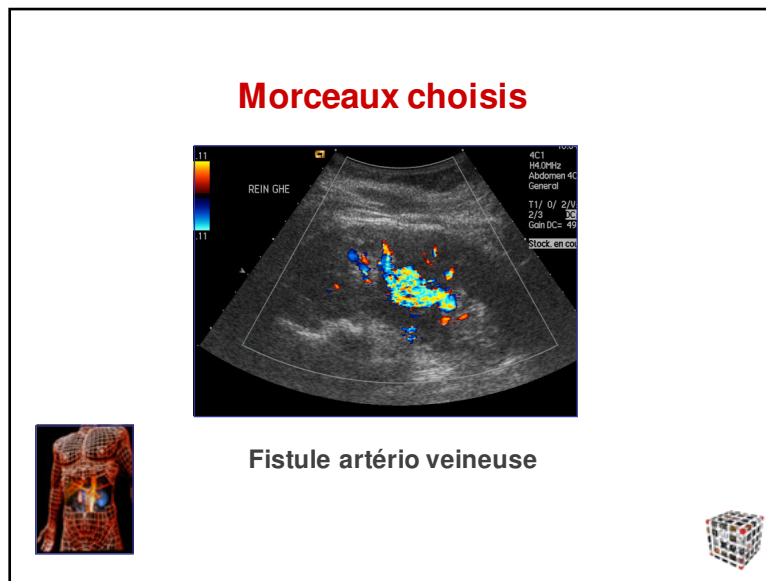
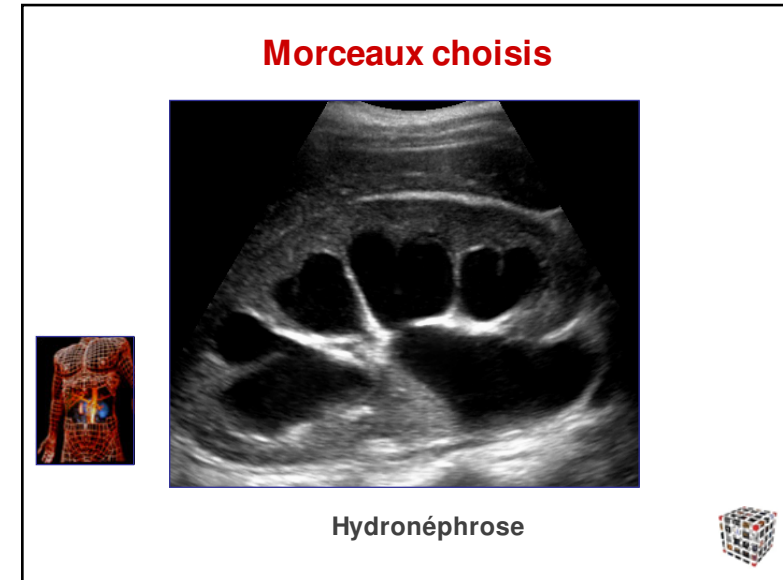
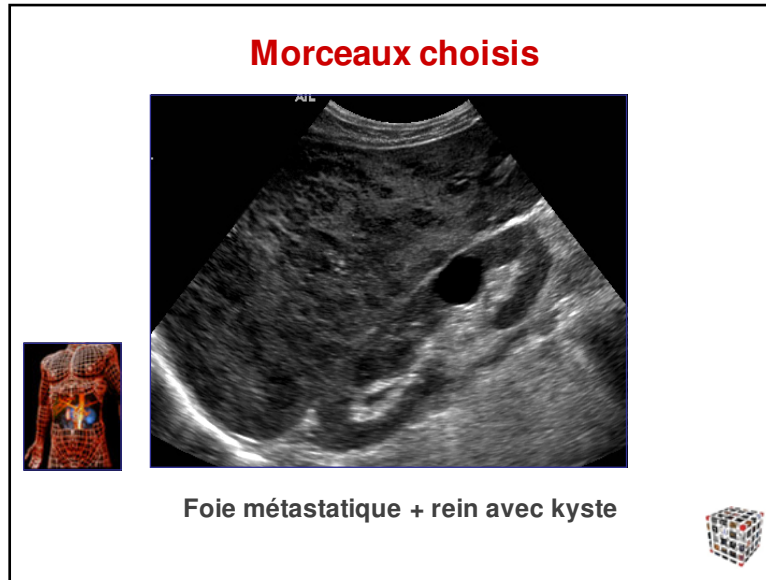


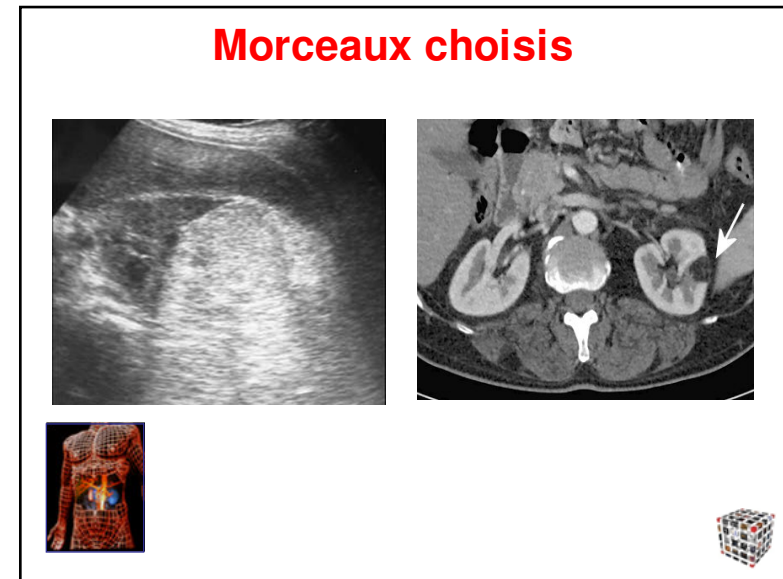
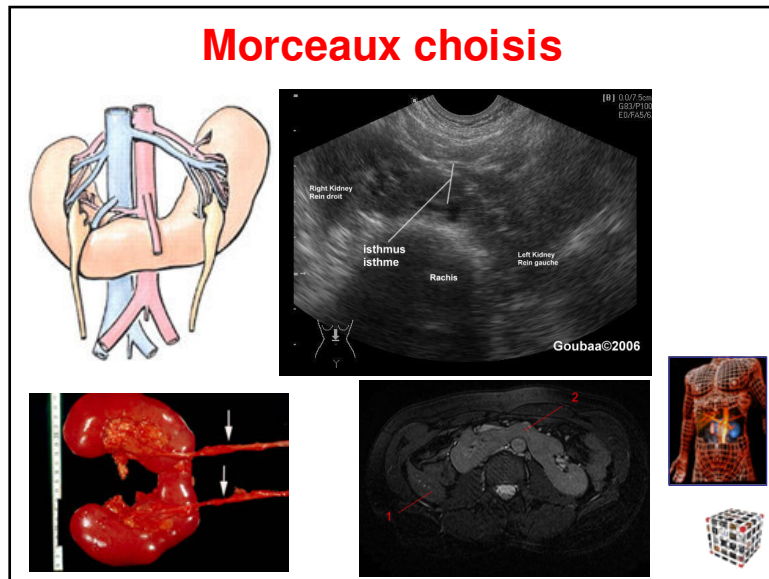
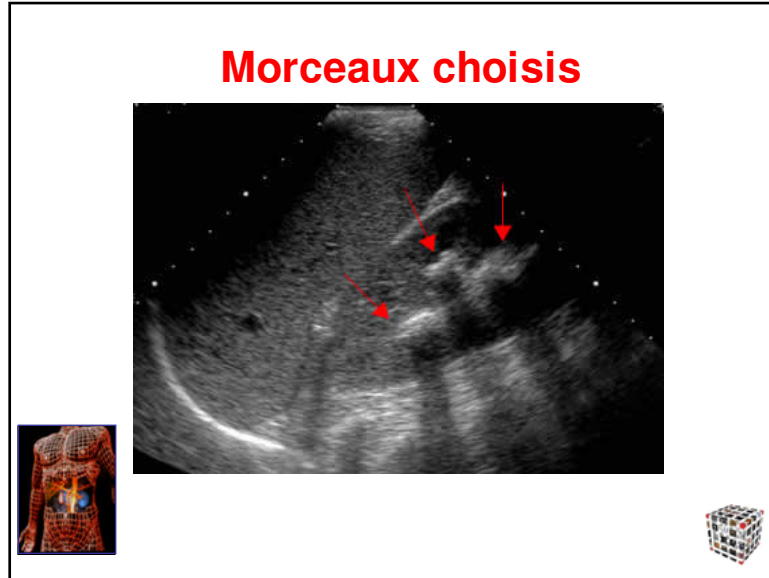








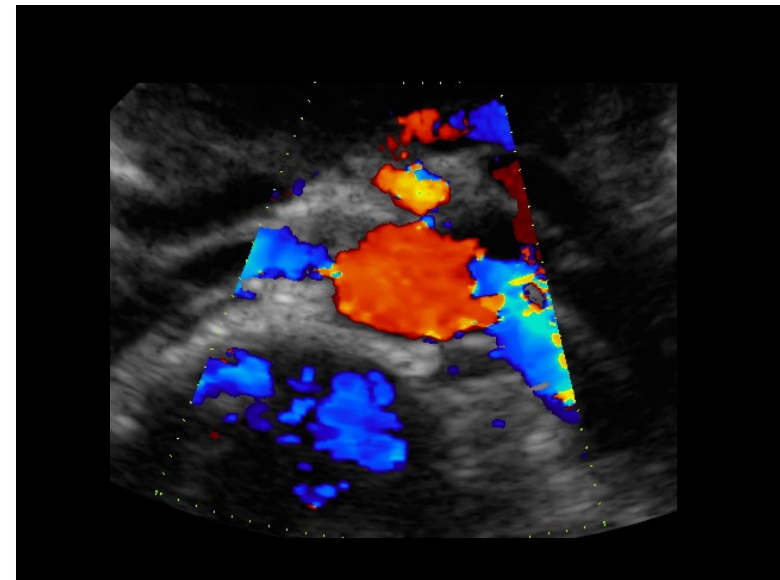
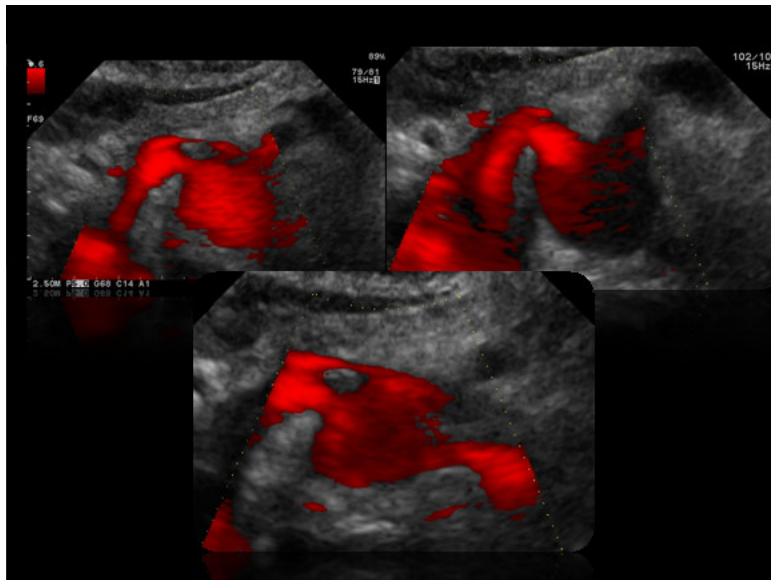
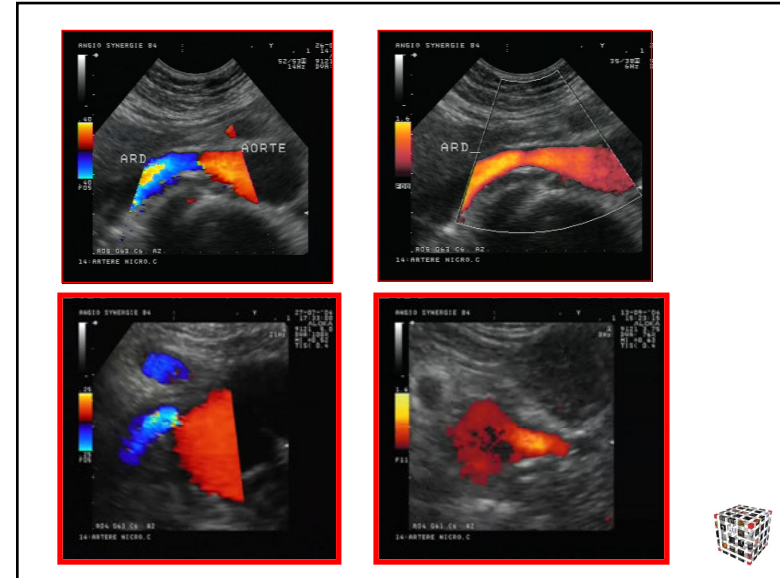


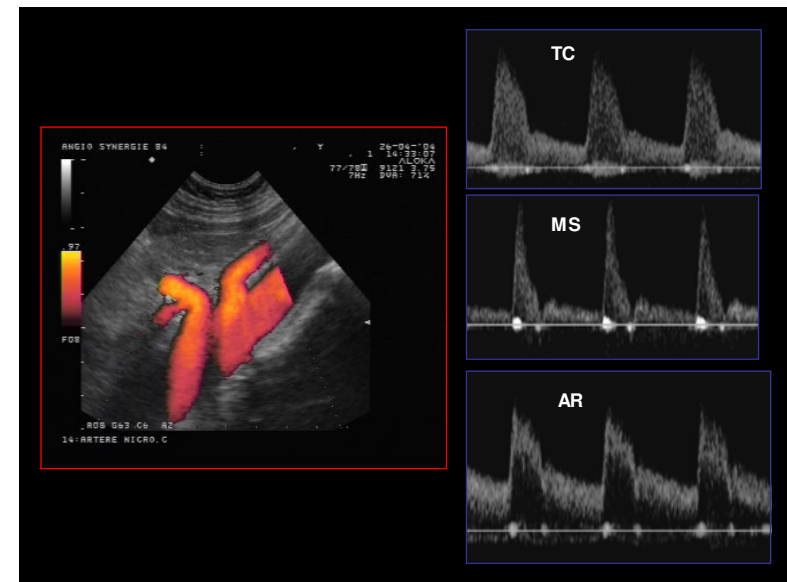
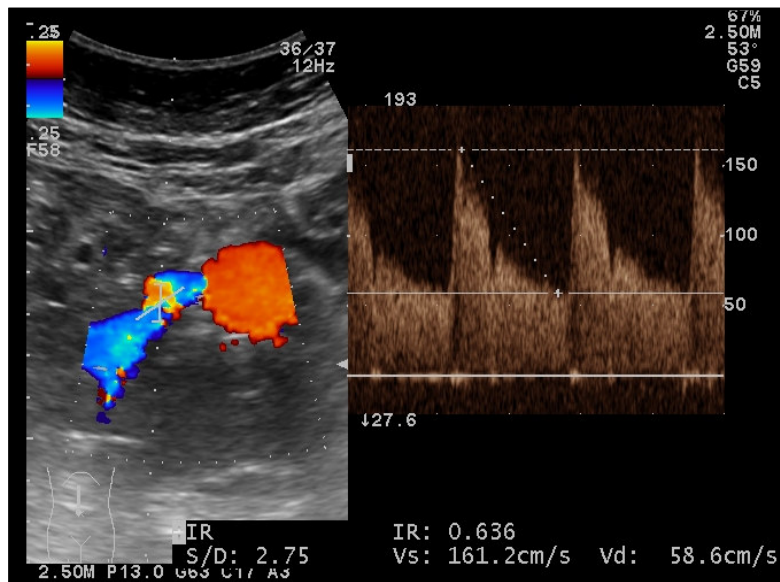
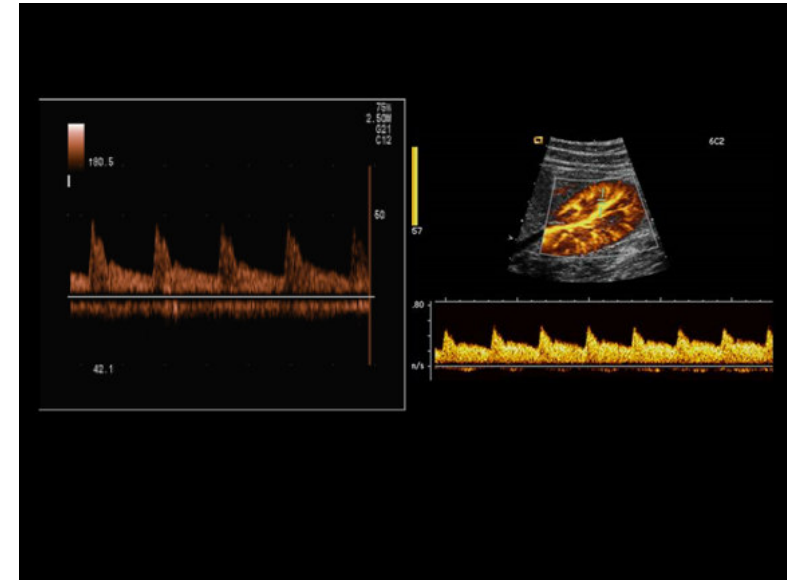
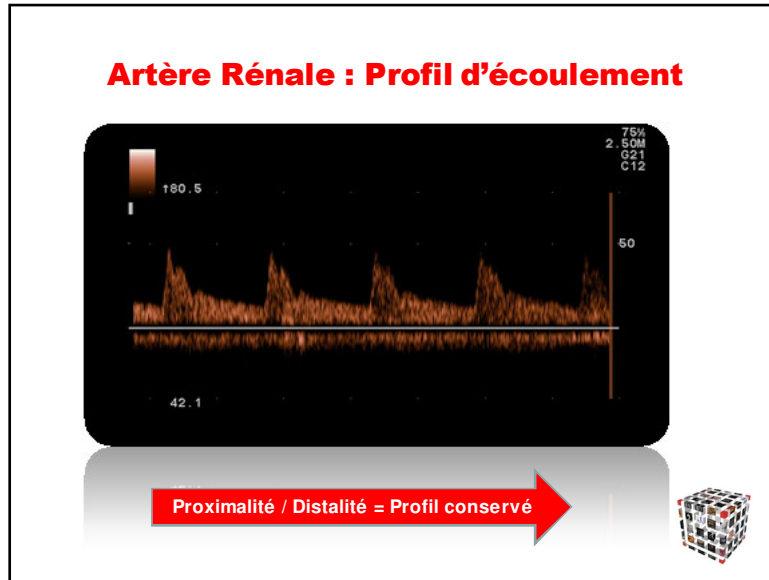


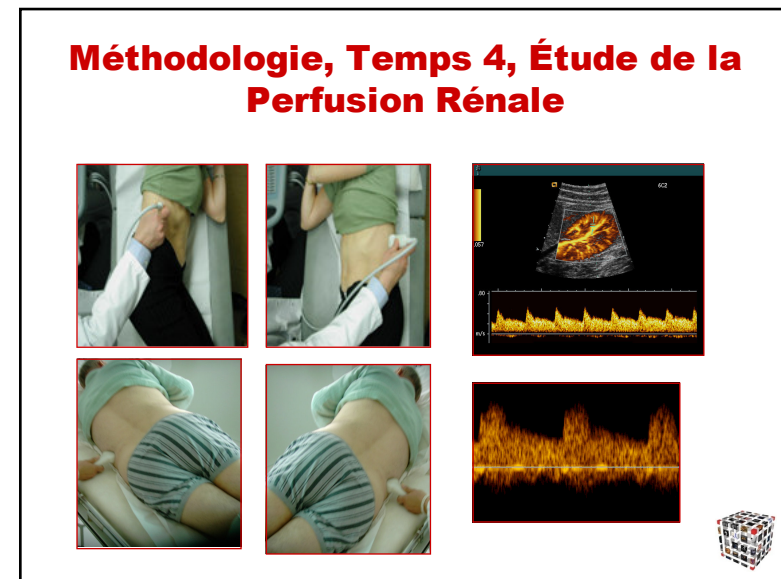
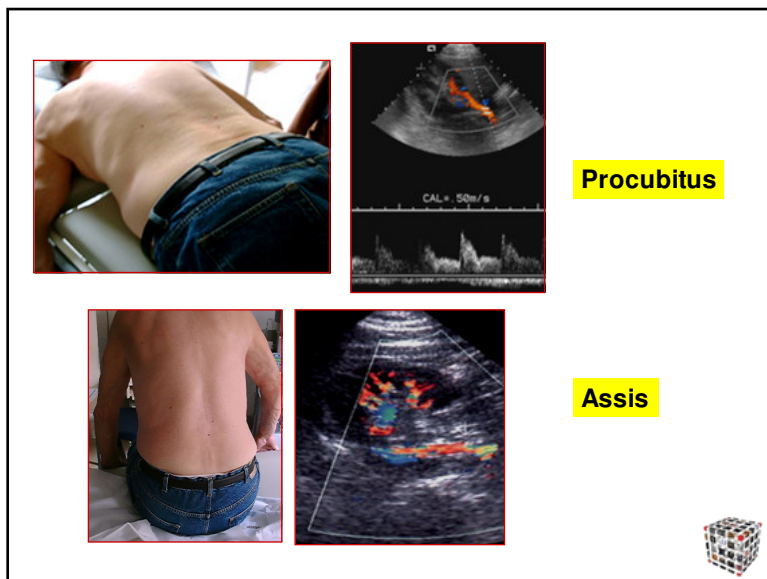
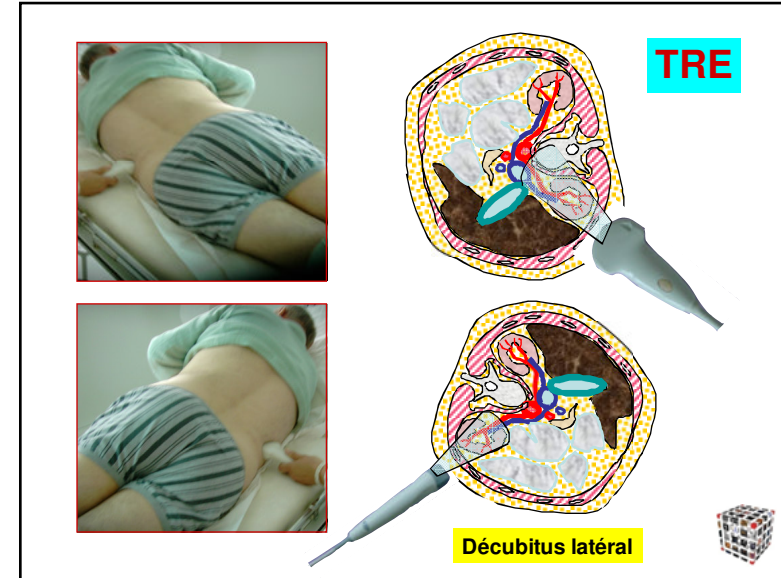
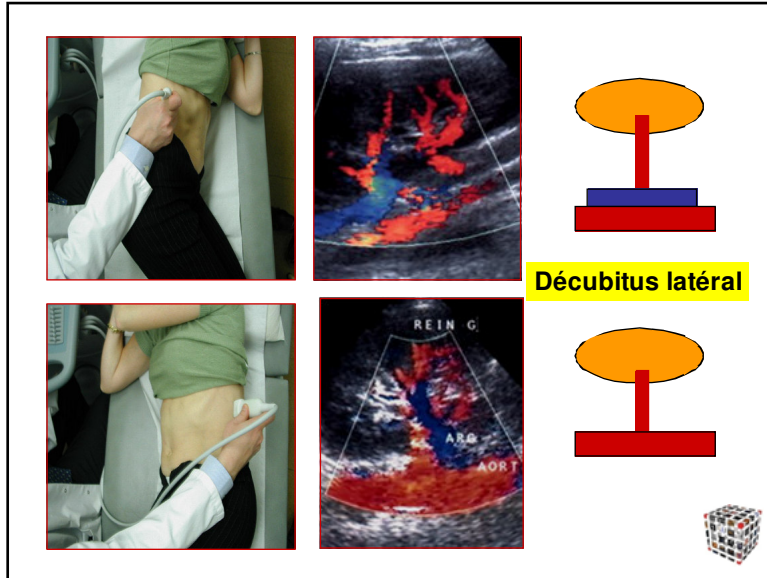
### Méthodologie, Temps 3, Étude des Artères Rénales



Voie Antérieure, Décubitus Dorsal







### Méthodologie, Temps 5, variantes

AR droite, voie sous hépatique    voie trans duodénale    voie trans duodénale

### Méthodologie, Temps 5, variantes

AR gauche : voie trans duodénale    voie trans rénale

Voie pararénaie    Voie trans rénale

### Méthodologie, Temps 5, variantes

AR gauche : voie trans hépatique    voie trans gastrique

### Variations Anatomiques

Partie abdominale de l'aorte  
 A. rénale  
 aorte polaire supérieure

a ~13%    b ~10%    c ~7%    d ~5%

(A. rénale postérieure supérieure)



