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1/  Hello #medtwitter 

This October's @ASPNePh Radiology webinar was all about abscess in a transplanted kidney. Scary.. isn't it?! 

How prevalent are kidney abscesses among kidney transplant recipients? #Medtweeetorial  
#nephtwitter #pedneph #kidneytransplant  
#renalabscess


2/  Prevalence of kidney abscesses ranges between 0.1 - 0.3%  compared to 0.01-0.1% of the general hospitalized population  and 0.16% of pediatric population  with UTI.

Rare.. But we certainly don't want it to be missed



PMID: 2672239, 24389603, 9378929, 24025922

3/  Let's take a look over bumps of the kidney..

A renal abscess is a collection of suppurative material in the renal space 

In kidney transplant population, it is more commonly seen in the transplanted kidney rather than the native failing kidney/s.

PMID: 16160115

4 📖 The type of kidney abscess is described according to the space involved:

- calyceal system-pyonephrosis
- perinephric space-perinephric abscess
- pararenal space-paranephric abscess
- peritoneal cavity-pelvic abscess

PMID: 9225387

rID: 22397, 29648, 21301



Perinephric abscess



Pyonephrosis



Pelvic abscess

5/ 📖 What are the most common symptoms of kidney abscess?

6/ 📖 Despite immune suppression in transplant patients, most patients exhibit symptoms & signs:

fever 🤒 (71%)

abdominal or flank complaints 🙄 (86%)

flu-like illness 🤧 (18%)


dysuria & inguinal pain

palpable abdominal mass

nausea/vomiting 🤢

PMID: 2672239

7/ 📖 What is the best method to diagnose a kidney abscess?

8/  Abdominal CT is the diagnostic modality of choice (sensitivity and specificity around 90%).

US can be used as a screening tool and detects abscess 2cm and larger.

Plain Xray/ X-ray KUB may be normal in up to 40% of patients.

PMID: 17219288, 18194131, 21492371





9/ 🏠 Lab findings:



📊 Leukocytosis with left shift

🧪 Pyuria

🩸 Blood/Urine cultures are often negative

PMID: 2672239

10/ 🏠 Which of the following pathogens is the most common cause of renal transplant abscesses?

11/  Although all the organisms have been reported as causes of renal transplant abscess,  *S. aureus* remains the most common causing organism.

PMID: 2672239





**Table 4.** Isolates from culture of perinephric abscess material in 20 renal transplant recipients.

Organism	No. of isolates (%)
Staphylococci	9 (36)
<i>S. aureus</i>	4
<i>S. epidermidis</i>	1
<i>Staphylococcus</i> species	4
Gram-negative aerobes	8 (32)
<i>Pseudomonas</i> species	1
<i>S. marcescens</i>	1
<i>Klebsiella</i> species	2
<i>E. coli</i>	2
<i>Enterobacter</i> species	2
Anaerobes	7 (28)
<i>B. fragilis</i>	3
<i>B. bivius</i>	1
<i>B. melaninogenicus</i>	1
<i>B. ureolyticus</i>	1
<i>Peptostreptococcus</i> species	1
<i>Candida albicans</i>	1 (4)
Total*	25 (100)

\* Includes two patients with two isolates each and one patient with four isolates.


12/  Mainstay of treatment for renal abscess:

Small (<3 cm): antibiotics & observation

Medium (3-5cm): percutaneous abscess drainage in close collaboration with transplant surgeons.

Large (>5cm): more than 1 percutaneous drainage or open surgical

PMID: 7490896, 26522771

13/  Antibiotics are given as a short course IV, followed by a course of PO.

Check below the most commonly administered antibiotics and their dosing.

PMID: 2672239

## Parenteral antibiotic therapy of renal or perinephric abscess in adults

Regimens for empiric therapy		
Piperacillin-tazobactam		3.375 g every 4 hours or 4.5 g every 6 hours
Ticarcillin-clavulanate*		3.1 g every 4 hours
Cefepime		1 g every 8 hours or 2 g every 12 hours
Meropenem		1 g every 8 hours
Imipenem		500 mg every 6 hours
Regimens for therapy when susceptibility data are available		
Ceftriaxone		1 g every 24 hours
Ciprofloxacin		400 mg every 12 hours
Levofloxacin		500 to 750 mg every 24 hours
Aztreonam		1 g every 8 hours
Regimens for empiric therapy in the setting of <i>S. aureus</i> bacteremia		
MSSA	Nafcillin	2 g every 4 hours
	Oxacillin	2 g every 4 hours
	Cefazolin	2 g every 8 hours
MRSA <sup>¶</sup>	Vancomycin	Loading dose: <sup>Δ</sup> 20 to 35 mg/kg Initial maintenance dose and interval determined by nomogram; <sup>◇</sup> typically 15 to 20 mg/kg every 8 to 12 hours for most patients with normal renal function. Subsequent dose and interval adjustments based on AUC-guided (preferred) or trough-guided serum concentration monitoring. <sup>§</sup>

The doses listed are for patients with normal renal function. Dose adjustments may be warranted in the setting of impaired renal function.

MSSA: methicillin-susceptible *Staphylococcus aureus*; MRSA: methicillin-resistant *Staphylococcus aureus*.

\* Not available in the United States.

¶ For alternative agents with activity against MRSA, refer to the topic on treatment of invasive MRSA infections in adults.

Δ The vancomycin loading dose is based on actual body weight, rounded to the nearest 250 mg increment and not exceeding 3000 mg. Within this range, we use a higher dose for critically ill patients.

◇ Refer to the UpToDate topic on vancomycin dosing for sample nomogram.

§ Refer to the UpToDate topic on vancomycin dosing for discussion of AUC-guided and trough-guided vancomycin dosing.

## 14/ 📖 Risk factors for renal transplant abscess:

- Retroperitoneal hematomas
- Wound infection
- Lymphoceles
- Abnormal urinary tract anatomy (fistulas-  
urolithiasis)
- UTIs
- Contaminated preservation fluid
- Immunosuppression

PMID: 2672239

## 15/ 📖 Screening recommendations:

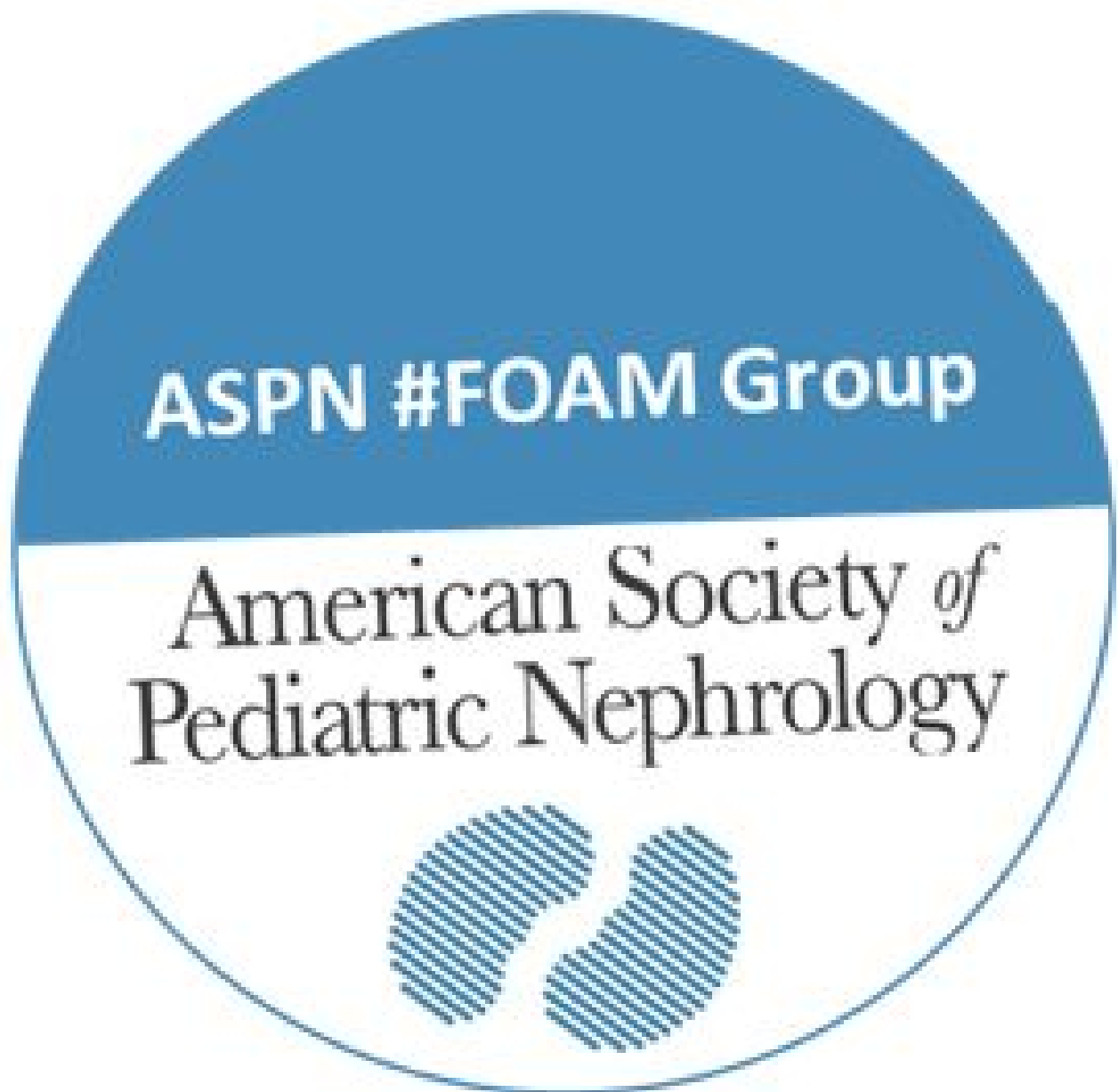
Routine post-op radiologic evaluation of the transplant site, especially if patient presented for unexplained fever 🤒, flank/abdominal pain 🤢, 📌 renal function, or suspected rejection ☠️.

PMID: 2672239

16/🧵 ..and that's a wrap on the transplant renal abscess. A bump in the kidney journey.

For a case-based clinical discussion with a radiology expert login to @ASPNePh website, October webinar. #Membereducation #ASPNeFOAMgroup

17/🧵 Special thanks to @drM\_Sudha @Priti899 @swastithinks @RoshanPGeorgeMD for support and guidance in publishing my first tweetorial. Until next time, stay hydrated and protect your kidneys! @ASPNePh #ASPNeFOAMgroup



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