ISOLATED RENAL MUCORMYCOSIS

Presenter:
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64 yrs old male patient, chronic smoker ,k/c/o COPD, admitted in surgical ward

- With complaints of -
  - **Pain in the right flank region since 7 days,** insidious in onset, gradually progressive in nature, dull aching, non radiating
  - He also had multiple episodes of **vomiting**
  - **Fever for 2 days**, low grade fever, not associated with chills
  - **Past history** –
  - H/o treatment taken from local physician

    for **Rheumatoid arthritis** since 7 years **on oral steroids on/off**

Vitals at presentation:

- T- 98.4°F,
- PR-110/min
- BP -100/70 mm hg
- RR- 16/minute, SpO_2- 97 % on air
- O/E – Conscious, oriented to time, place person
- Per Abdomen- soft, non-tender, non distended

Preliminary Investigations

Investigations on admission	**Values**
CBC- Hb(g/dl)/TLC(cells/cumm)/DLC(%)/PLT	8.5/**13300**/78%/15/6.8/1.2/27200
CRP	81 mg/dl
RBS (mg/dl)	**350**
KFT (mg/dl)	35/**1.6**
Se. Na/K(mEq/L)	135/3.9
LFT(OT/PT/ALP(u/ml)/T. Bilirubin(g/dl)	26/29/116/0.5
Serum Lipase (IU/L)	38
PT/ INR	19.4/1.6
Urine R/M	**Turbid, Protein++,Pus cell 40-45/hpf,RBCs 80-85/hpf**
USG abdomen**: Right bulky kidney**	

Case cont..

- Considering provisional diagnosis of **Right Pyelonephritis** w- Empirical antibiotic IV Meropenem was started

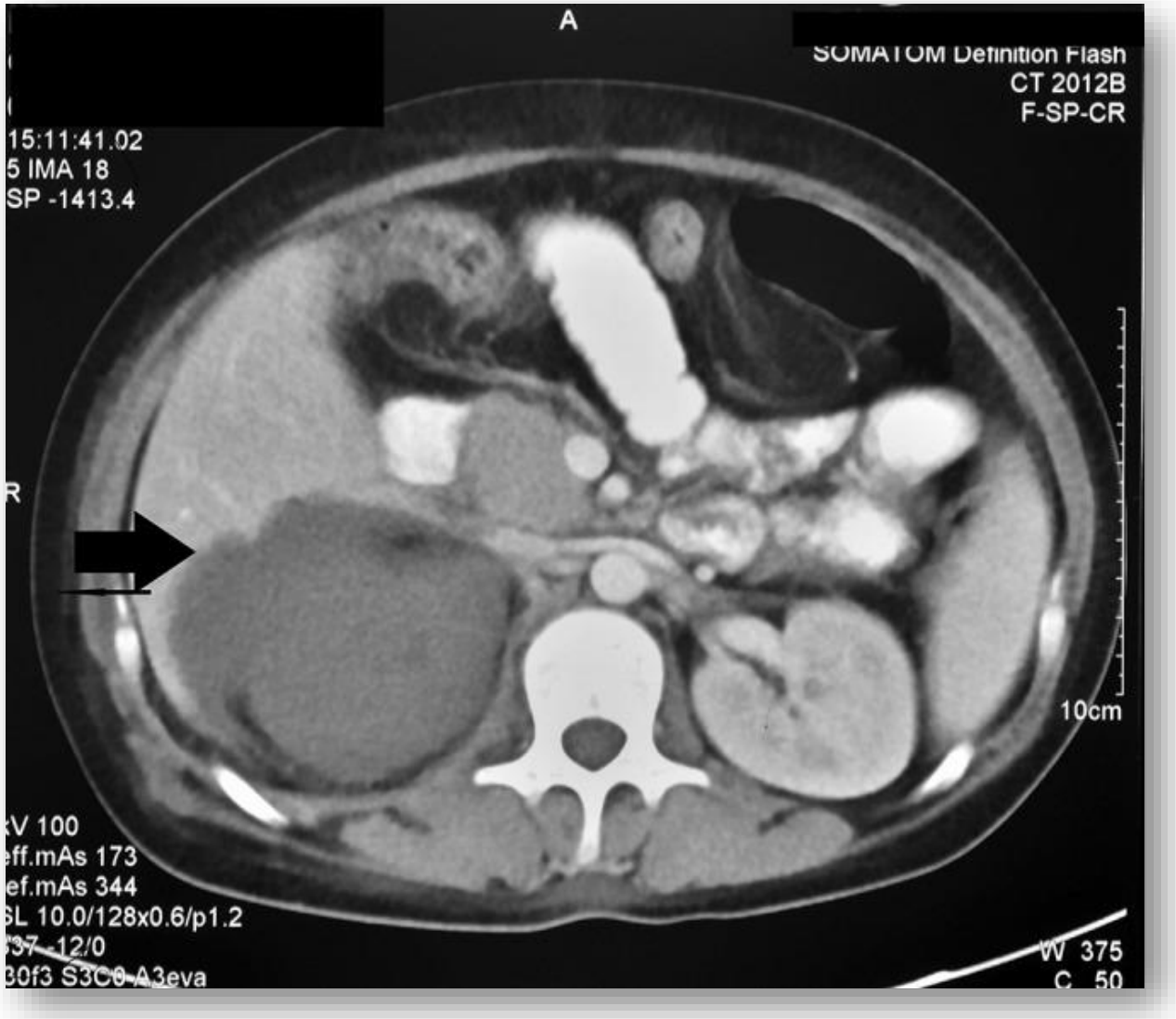
- But Patient's **clinical condition was deteriorated** even after 48 hours(TLC counts were increased -23,300 cu/mm), so an ID call was sent

Next Investigations/ diagnostic work-up ?

- Blood cultures
- Urine cultures
- CT Abdomen

CECT Abdomen

- **Bulky right kidney** with multiple wedge-shaped **hypo-enhancing areas** extending till the periphery of renal cortex –
- **Pyelonephritis** with **renal infarcts** with inflammation extending along renal vessels, ureter, psoas and perinephric space



D/Ds and further work up?

- **Aggressive Bacterial Infection** ?evolving Renal abcess
- **Fungal** – likely moulds infection-(Urine KOH and Fungal culture)
- **Infective Endocarditis** with secondary Metastatic infection-Rt kidney

  (2d-echo and 3 sets of blood cultures)
- ?Renal Vein Thrombosis with Malignancy

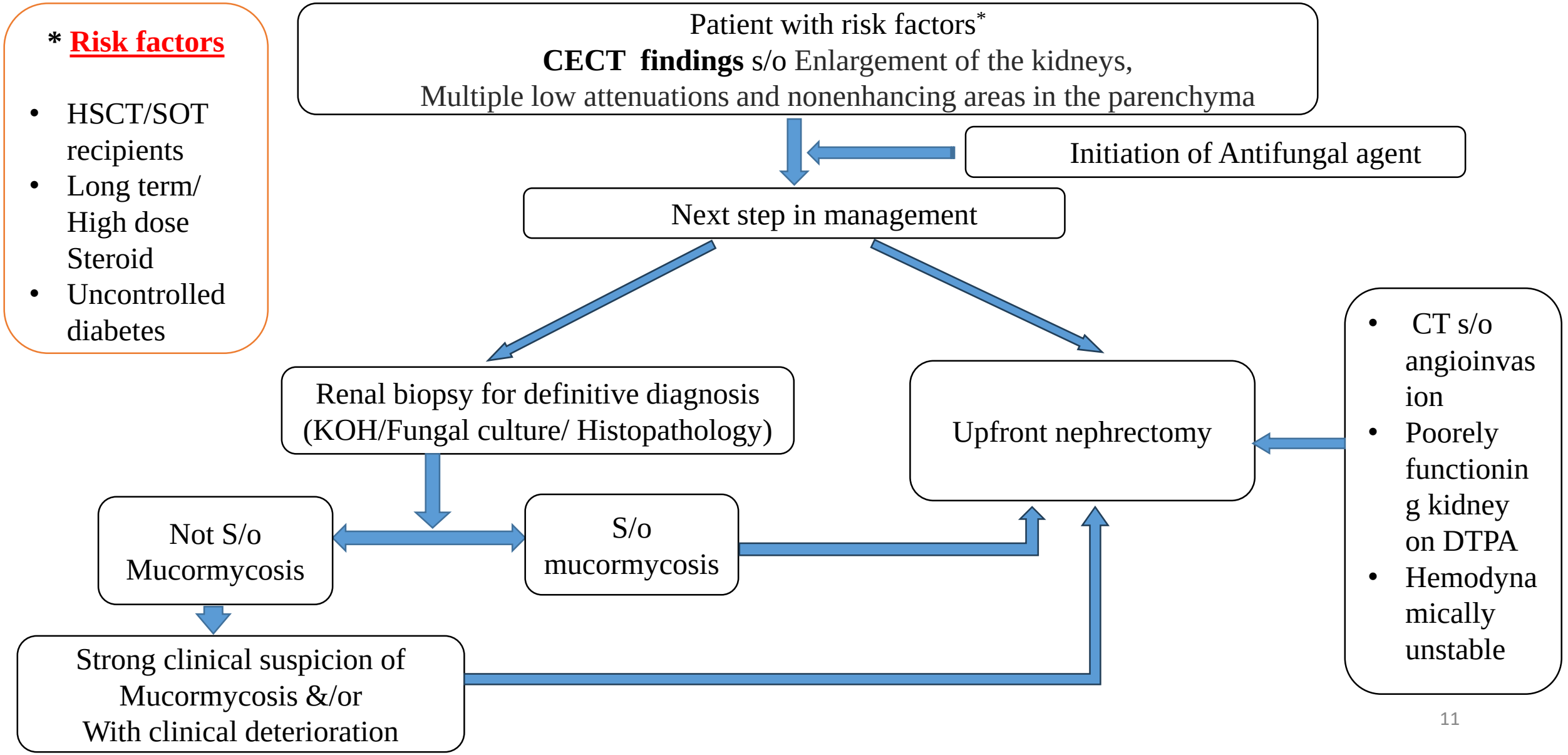
Further progress in case...

- All **blood culture** sets were ongoing sterile after 48 hours
- **Urine culture-** sterile after 24 hours of incubation
- **2d-Echo-** Normal with No vegetation with EF=60%
- **Urine KOH-** Negative for fungal profiles
- **Urine Fungal Cultures-** awaited

Case cont...

- Patients further deteriorated – developed hypotension
- What should be done next?
- Considering risk factors, clinical course and CT scan findings- there was a strong suspicion of **renal mould infection**.
- Patient was started on **injection liposomal amphotericin B** (5-10 mg/kg/day)

Algorithm for Approach to a patient with pyelonephritis with renal inarcts not responding with brroad-spctrum antibiotics-followed at our institute



What is next step in management in our case?

Renal biopsy?

Or

Upfront Nephrectomy?

patient was hemodynamically unstable

CT s/orenal infarcts likelyangio-invasion

On DTPA scan - Poorly functioning Kidney

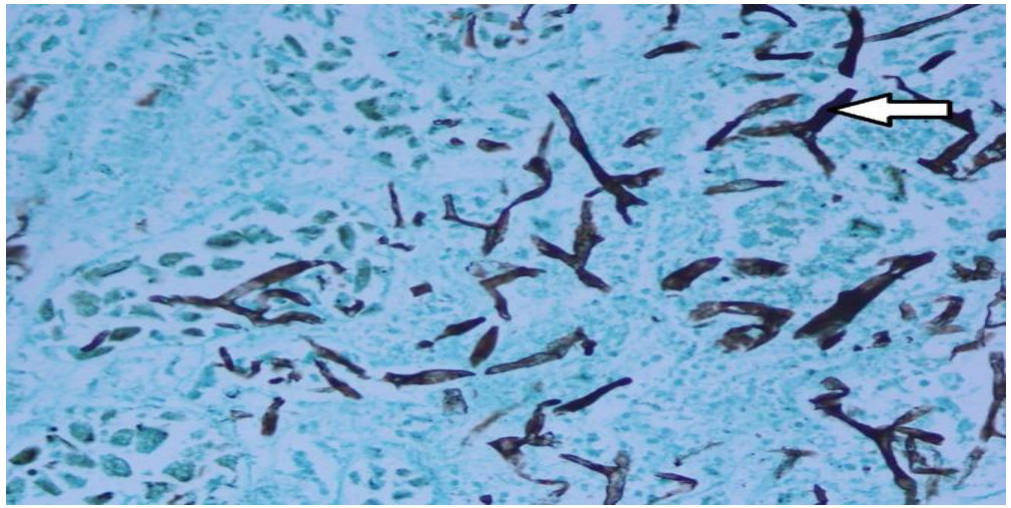
Case contd..

- Patient was then **transferred to urology** for –**Nephrectomy**
- He was operated on 4th day of admission
- S_X **- Open Right Simple Nephrectomy**
- Intra op findings- Firm edematous Right kidney/Dense adhesions / **pus filled phlegmon**.

Microscopic findings- Right Kidney Specimen

Microscopy:

- Extensively **necrotic** renal parenchyma
- Few thick walled **vessels show angio-invasion** by Fungal profiles
- These were **pauciseptate and have broad, ribbon-like foldable hyphae with right angled branching s/o mucormycosis**



Final Diagnosis

- Right Renal Mucormycosis with multiple right renal infarcts

In our case..

- What should be the treatment duration for Amphotericin B?

  4-6 Weeks

- Role of Maintenance therapy ?

  Should be given for 3-6 months

Thank You