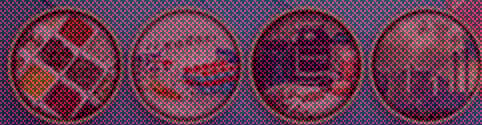


AKI & rare etiology (a case report)

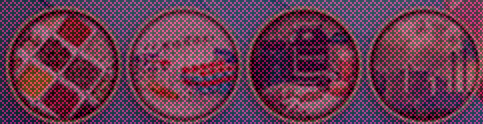
B.Hadian

Lorestan university of medical sciences



Case Presentation: (on admission, 1th day)

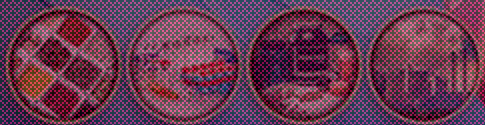
- A 59yrs-old F.
- Acute skin rash & jaundice since 12 hrs ago.
- Maculo-pupular pruritic ,generalized lesions.
- Concomitant red urine.
- Through recent 12 hrs, UOP decreased and progressive edema.progressive weakness.(cr: 1.8mg/dl).



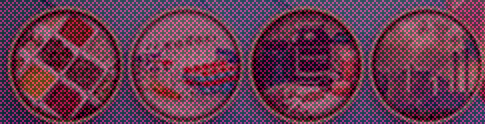
Second day:

- Pt is anuric and may be uremic.
- LOC is normal.

- Exam: only RUQ tenderness.
- BP: 90/60. T: 37.8
- Recent data:.....

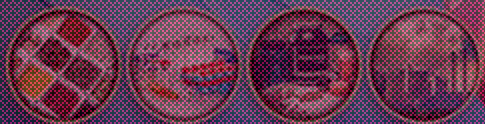


| | |
|-------------------------------|---|
| Hematology data | WBC=17.2 Hb=13.5 Plt =118000 MCV=90 PTT=53 PT=33.5 INR= 5.9 EOS: 3% Neut: 78% Retic count : 1.1% |
| Liver tests | Bill T= 14.5 Bill D: 8 Alp= 396 AST=271 ALT=81 |
| Kidney tests | Urea=131 Cr=3.52 U/A: Pr: +++ ، RBC: 30-34 ، WBC: 18-20 ، Glc: + ، Granular cast:1-2 |
| Electrolytes & ABG | PH=7.28 Pco2=36.6 Po2=35 Hco3=17.5 Na=132 Ca=8.35 Alb: 3.5 Ph=5.1 K=5 |
| Other data | CPK=1311 CK_MB=65 Amylase=148 LDH=1540 Lipase=109 CRP=+ Troponin=0.15 ESR: 25 COVID PCR: neg ESR:25 |
| Serology finding | HbsAg : (?) HIVab: (?) HCVab: (?) HAVab :(?) ANA: (?) ANCAc : (?) ANCAp: (?) ,C3,C4,CH50: ???? |



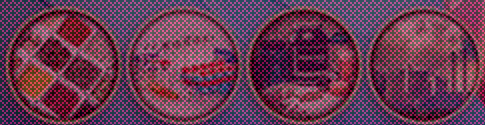
Additional data:

- Abdominal-pelvic Ultrasonography, Doppler's st : OK
- Echocardiography: OK
- CXR: OK
- DD: *SEPSIS.....LEPTOSPIROSIS.....VIRAL HEPATITIS....VASCULITIS.....DRUG IND AKI.*
- Management : initiation of Ab & short course hemodialysis.



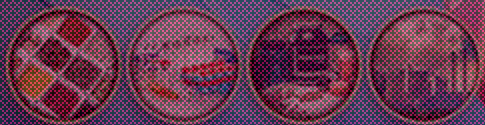
Following days:

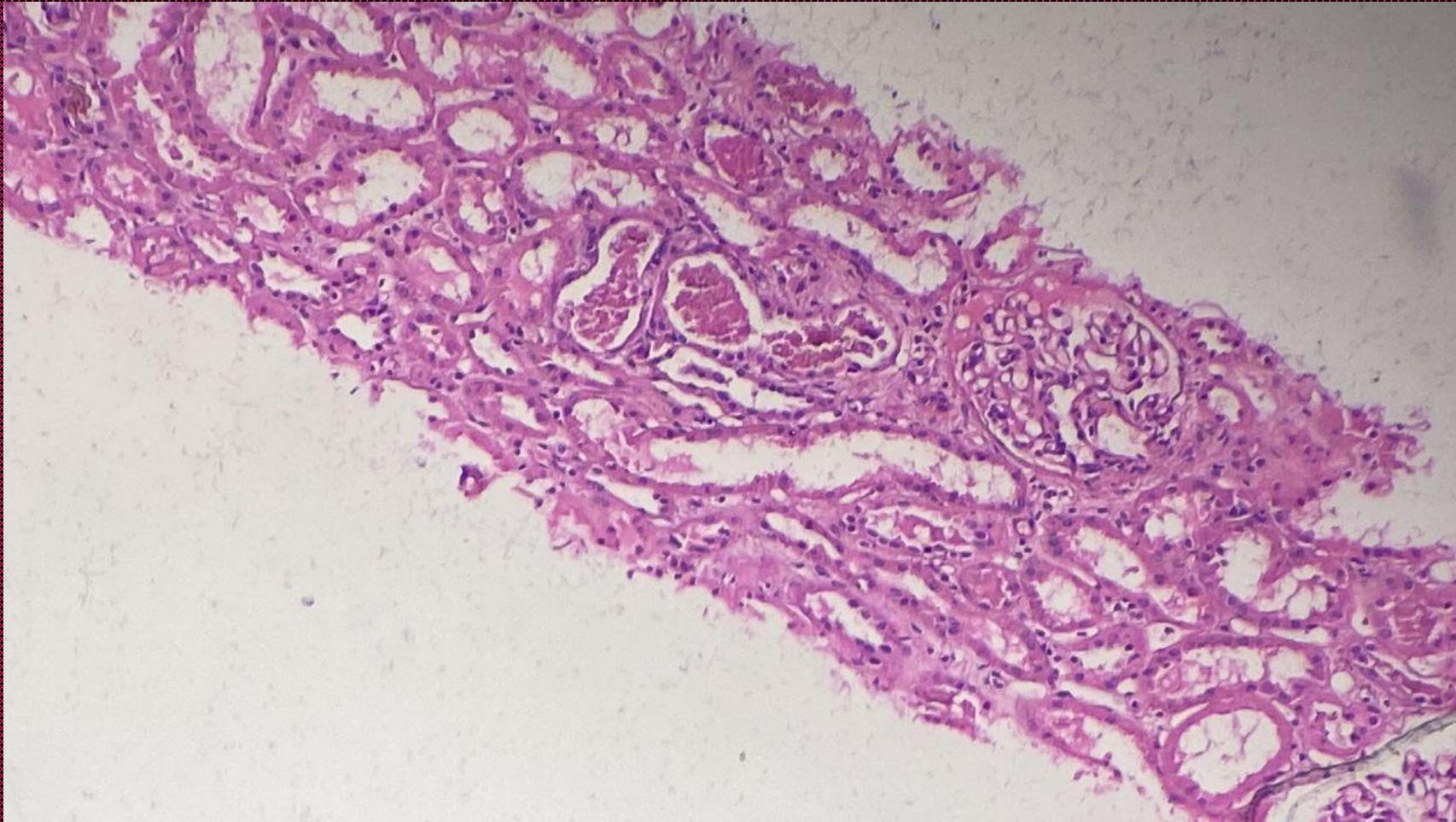
- ◉ Anuria : continue for next days.
- ◉ Hemodialysis : continue for uremia
- ◉ 5th day: Cr: 5mg/dl
- ◉ First culture :(-)...other serologic test:(-)
A course of methylprednisolone tx was done

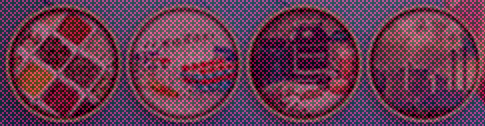
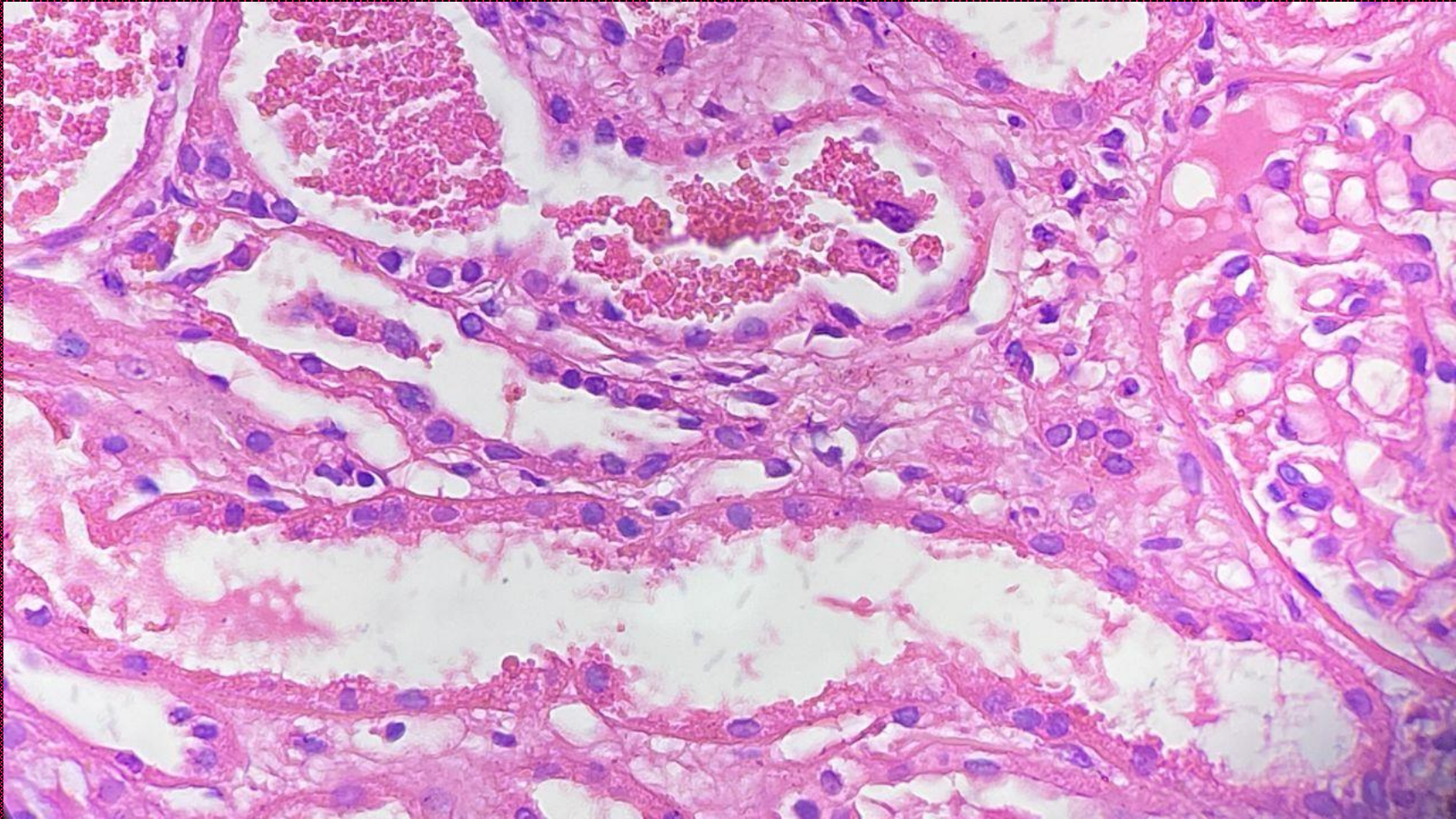


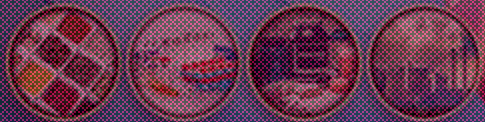
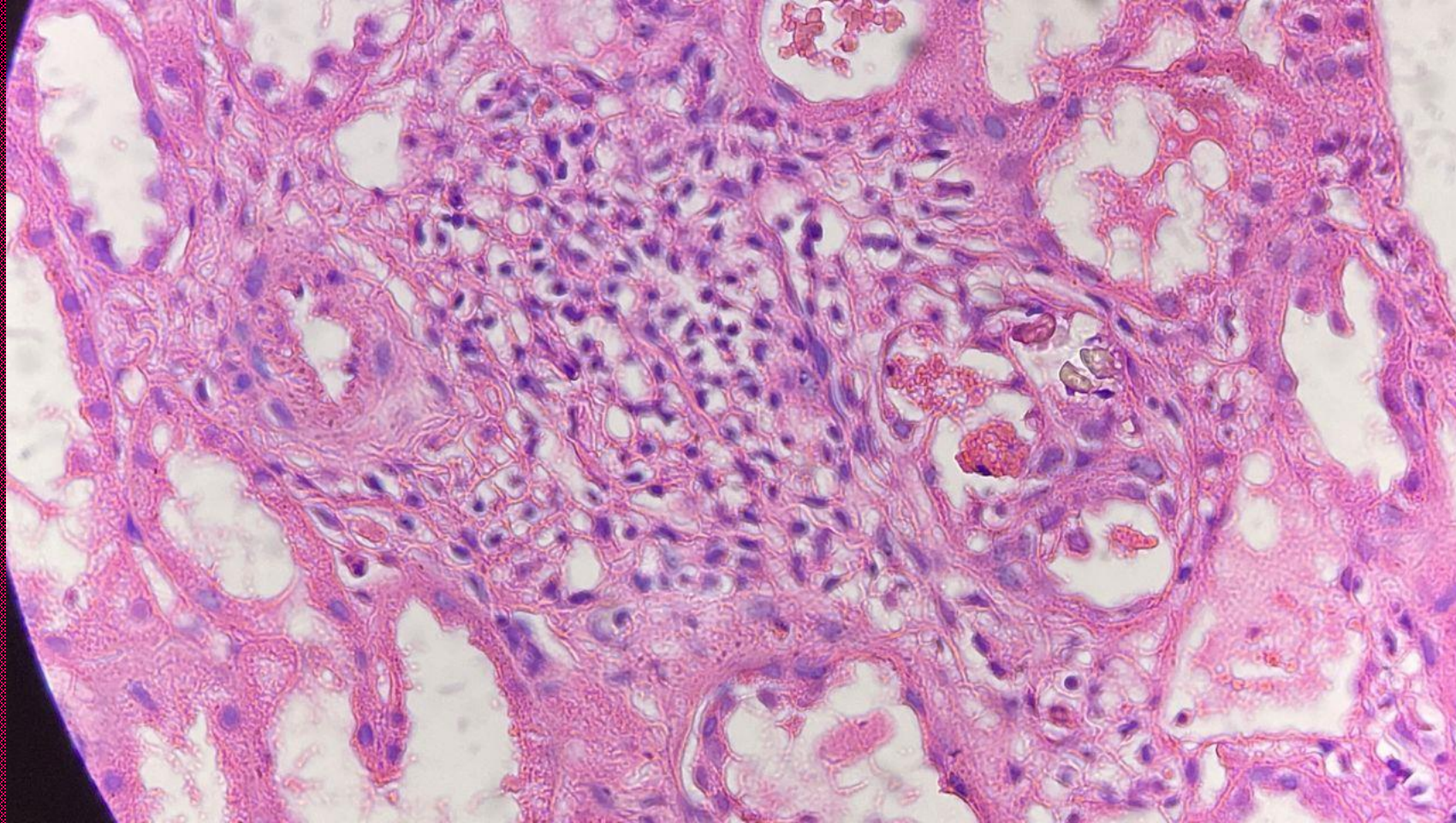
Key points:

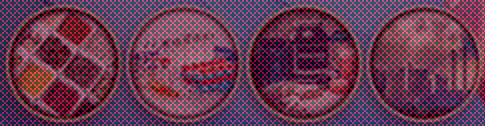
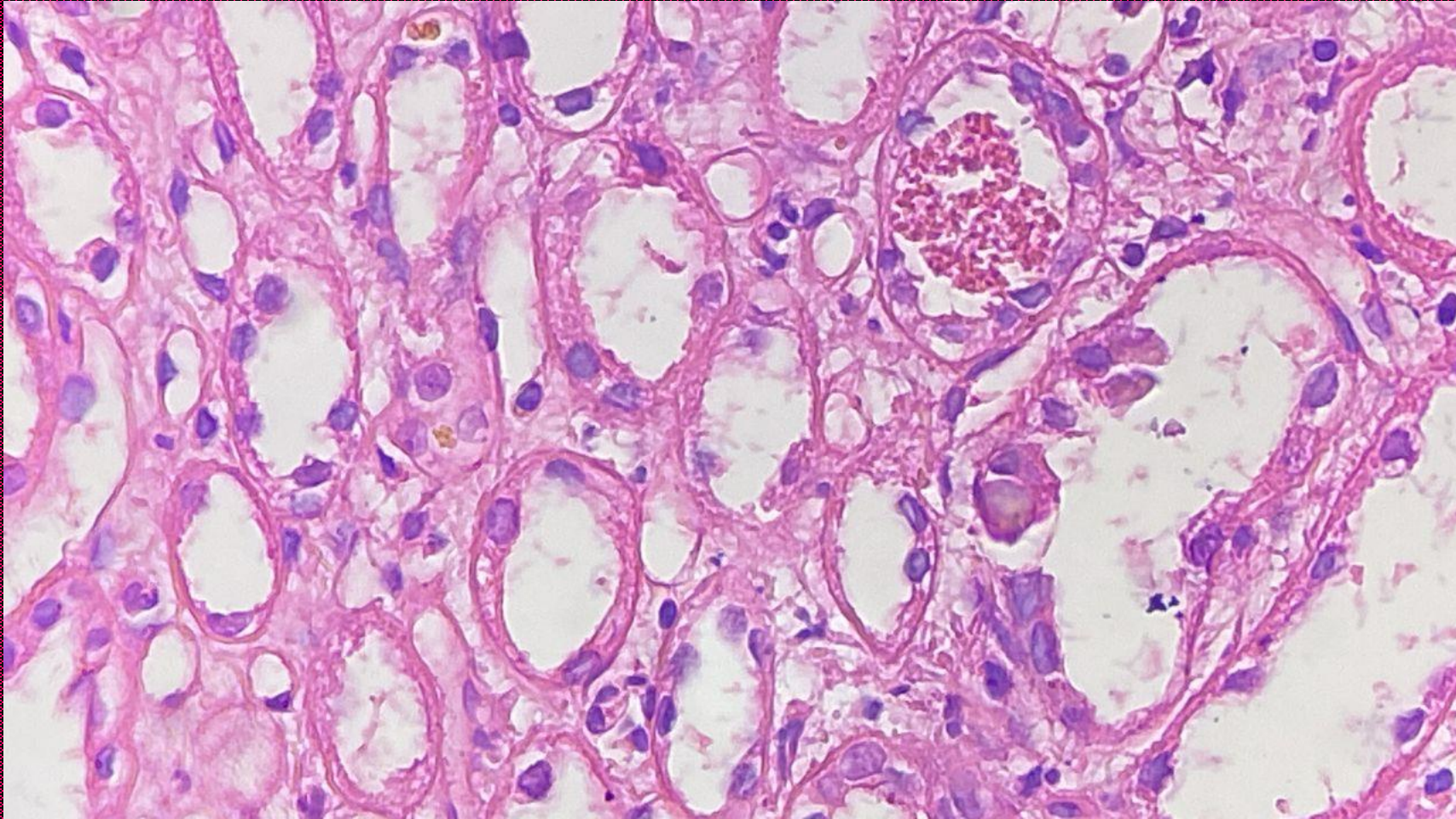
- History of one dose of rifampin cap 1 day before admission.
- She had history of brucellosis some years ago and partial tx due to allergic reaction .
- Kidney biopsy was done.???????





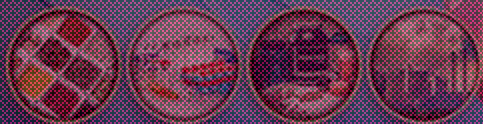






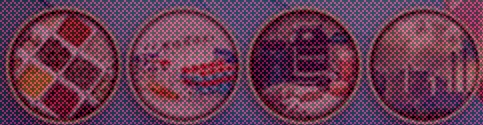
Final dx:

- **Acute interstitial nephritis related to rifampin.**
- After discharge, on prednisolone 60 mg/d and IHD
- During next 14days ,anuria resolved
- On 3thw, prednisolone tx was tapered and no need IHD.
- On 4th w , pt is well. Cr:1.1. UOP:OK



Discussion:

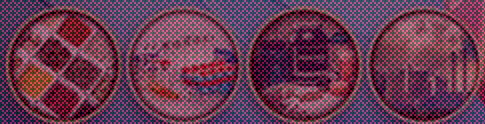
- Acute interstitial nephritis (AIN) is a common cause of acute kidney injury.
- The most common etiology of AIN is drug-induced disease, which is thought to underlie 60–70% of cases



- ◉ **RIFAMPICIN** remains a key antibiotic in the treatment of tuberculosis or brucellosis and is used increasingly for the treatment of severe staphylococcal infections.
- ◉ **Hepatotoxicity** is the most frequently observed side effect. The present report focuses on a less known form of toxicity, acute kidney injury.

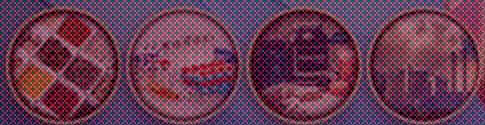


- ◉most often when the drug is used **intermittently** .
- ◉ ...is commonly associated with **oliguric AKI** with evidence of hemolytic anemia, thrombocytopenia and **hepatitis**.
- ◉ antibodies against cells expressing blood group antigen I which harms RBCs, platelets, and renal tubular epithelial cells
- ◉ type II and type IV hypersensitivity reactions
- ◉ proximal tubular injury manifests as renal glycosuria
- ◉ approximately **two-thirds** of patients require RRT.

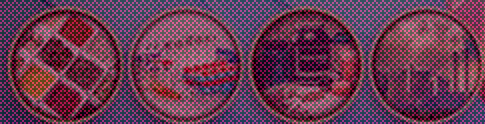


BX finding:

- Histologically, rifampin nephrotoxicity is associated with **acute tubulo-interstitial nephritis (AIN)**, tubular necrosis, papillary necrosis, acute cortical necrosis, and minimal change disease.
- Of these, **AIN and tubular necrosis are the most common** and frequently develop upon reintroduction of the drug or during intermittent therapy.

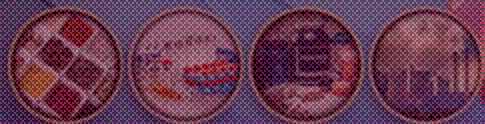


- ◉ In patients treated with an **interrupted regimen**, the rifampin-dependent antibody produces acute tubular necrosis requiring dialysis.
- ◉ In contrast, **the continuous administration of rifampin** has been described as progressing more insidiously..



Conclusion

- This presentation aimed to present a case of type II hypersensitivity causing renal injury following a **single dose of rifampin**.
- Although the occurrence of severe reactions to rifampin **is rare**, clinicians should be informed of this condition due to its drastic outcomes and potential mortality.



- ◉ Renal failure developed on administration of a single dose of rifampicin after **a variable drug-free period** after continuous ingestion in most patients.
- ◉ **No variable** at presentation predicted the severity of renal failure. Prognosis was **excellent**, with complete recovery of renal function in all patients.

