

RENAL ARTERY EMBOLISM

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Case report

Ethiology of renal artery thrombosis and emboli

- 25% cardiac - atrial fibrillation, aortic atheroma, endocarditis
- 16% trauma - fibromuscular dysplasia, vasculitis, arteriosclerosis, aneurysm
- 32% coagulopathy - hereditary thrombophilia, hyperhomocysteinemia, antiphospholipid syndrome,
- 27% idiopathic causes

Under-reported disease : 1.4 autopsies

Woman, 48 years, BMI 25.9, truck driver

History : no medical event

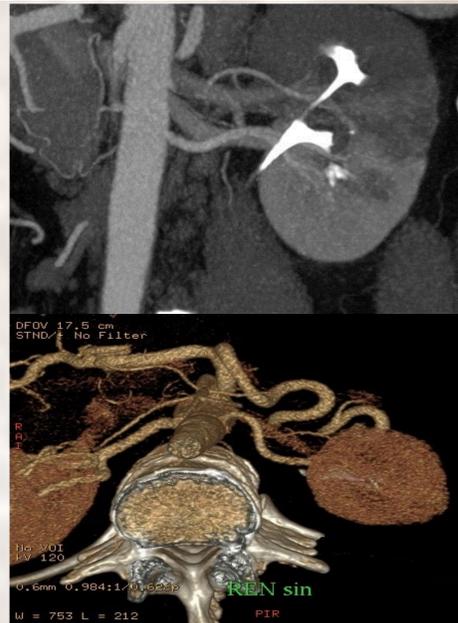
Medication: no

Risk factors: heavy smoker

Lab: WBC $24.9 \cdot 10^9/l$, fibrinogen 7.3g/l, LDH 27.3 mkat/l, CRP 160 mmol/l, microscopic haematuria

Symptoms: left flank pain, vomiting, subfebrile

Imaging: US, KUB, IVU, CT-IVU, angio-CT, peri-interventional angiography



Treatment:

- Radiological minimally invasive blood clot extraction via left femoral artery
- Control angiography showed good blood supply with renal artery and impaired saturation of left kidney parenchyma 24 hours after intervention
- Bothering flank pain and nausea disappeared immediately.
- Biochemical and haematological parameters were normalised in 14 days
- Short-term acetylsalicylate antiplatelet therapy and long term administration of warfarin was set up

Angiography before intervention



Angiography 24 hours after



Further investigations:

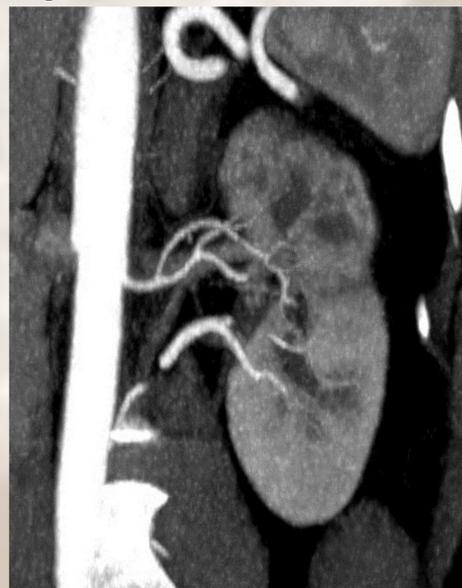
Were performed to exclude the most frequent reasons of arterial clots.

- Cardiac examination including ECG and heart ultrasonography excluded atrial fibrillation, endocarditis, valvular or ischemic disease
- Haematological examination revealed hypercoagulopathy due to impaired prothrombin function
- Genetics
 - Homozygous mutation of the gene encoding prothrombin (G20210A).
 - Leiden's mutation was not confirmed

Follow up:

- Angio-CT was performed six weeks after revascularisation, the defect of upper half of left kidney is shown
- DMSA renogram showed impaired function of the upper part of left kidney with 25% function three months later, it was due to inferior polar artery supply
- Secondary hypertension of Goldblatt's type or significant renal function deterioration haven't been developed during follow up

Angio-CT 6 weeks after intervention



Conclusions

- Renal ischemia is an under-diagnosed condition
- It is possible to treat and to cure
- Minimally invasive radiological approach is the modality of the first choice
- Interval between the first symptom and revascularisation is not clearly defined
- Delay of 1 to 3 hours could predict better treatment results
- Renal ischemia is considered especially in case of a solitary kidney
- Elevation of lactate dehydrogenase, haematuria, persisting flank pain and high risk of thromboembolic event should indicate to perform enhanced CT

Literature

- Renal infarction in the ED: 10-year experience and review of the literature: Antopolsky M, Simanovsky N, Stalnikowicz R, Salameh S, Hiller N Am J Emerg Med. 2012 Sep;30(7):1055-60. Epub 2011 Aug 25.
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