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SURGERY CONFERENCE

**EVIDENCE BASED
VASCULAR PRACTICE**



Infected groin pseudoaneurysm in IVDUs tips & tricks

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History of Recreational drug

- the opium of ancient China,
- the coca leaves of the rainforest
- the American Indian use of peyote.
- Ingestion or inhalation was the route
- intravenous injection began as early as 1670..
- Charles Gabriel Pravaz and Alexander Wood who are credited with the independent yet simultaneous development in 1853 of a syringe with a hollow needle fine enough to pierce vessels.



• Charles Gabriel Pravaz





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- UK, all drugs were legal until 1860.
- William Gladstone and Florence Nightingale used opium,
- Queen Victoria used cannabis.
- Sir Arthur Conan Doyle.

wrote a graphic description of Sherlock Holmes injecting drugs with a syringe as a normal way of relaxing during the hiatus between cases.

- The mode of consumption has not changed to dat .

Substance Abuse Agent

- Marijuana=Hash =Hashish
 - Cocaine
 - Angel dust, PCP(PhynCyclohyxyl Piperidine)=Cocain +other agent
 - Amphetamines and such drugs
 - Heroin

Cocaine

- alkaloid extracted from the Erythroxylon coca plant
- supplied in powder form.
- snorted
- smoked
- injected intravenously
- physiological effects of cocaine are local anaesthesia
- sympathomimetic action derived from blocking the
- presynaptic reuptake of noradrenaline and dopamine -thrombosis

Heroin

- Heroin use is nearly as old as civilisation itself.
- poppy plant *Papaver somniferum*. –Morphine
- The effects of heroin a
 - endogenous opiate receptors
 - neurotransmitters, neurohormones act on central nervous system
- the street drug in powder form where it is generally diluted in water and injected intravenously
- subcutaneous injections.
- dermal ulcerations and scarring
- ‘skin pop marks’

Other agent

- paracetamol (acetaminophen) + codeine + pentazocine (Talwin).
- particulate embolisation.
- Even powdered agents such as heroin and cocaine may
- Not fully dissolve or will precipitate in the syringe prior To injection.
- intentional, intra-arterial route is used
- terminal vessel occlusion



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Cocaine and Heroin



Cocaine crack or Rock



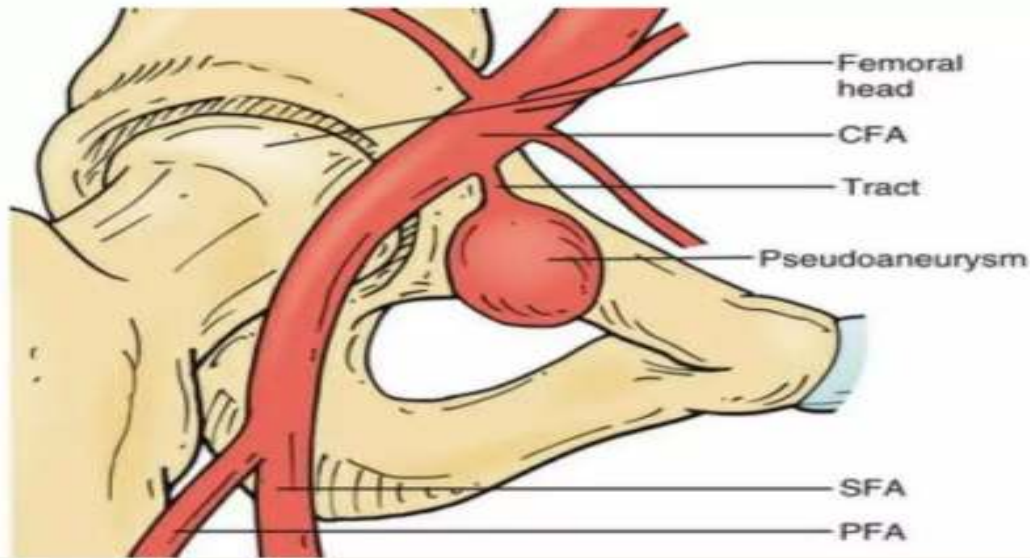
liquefaction of Heroin & Cocaine powder for IV



True VS False Aneurysm

TRUE

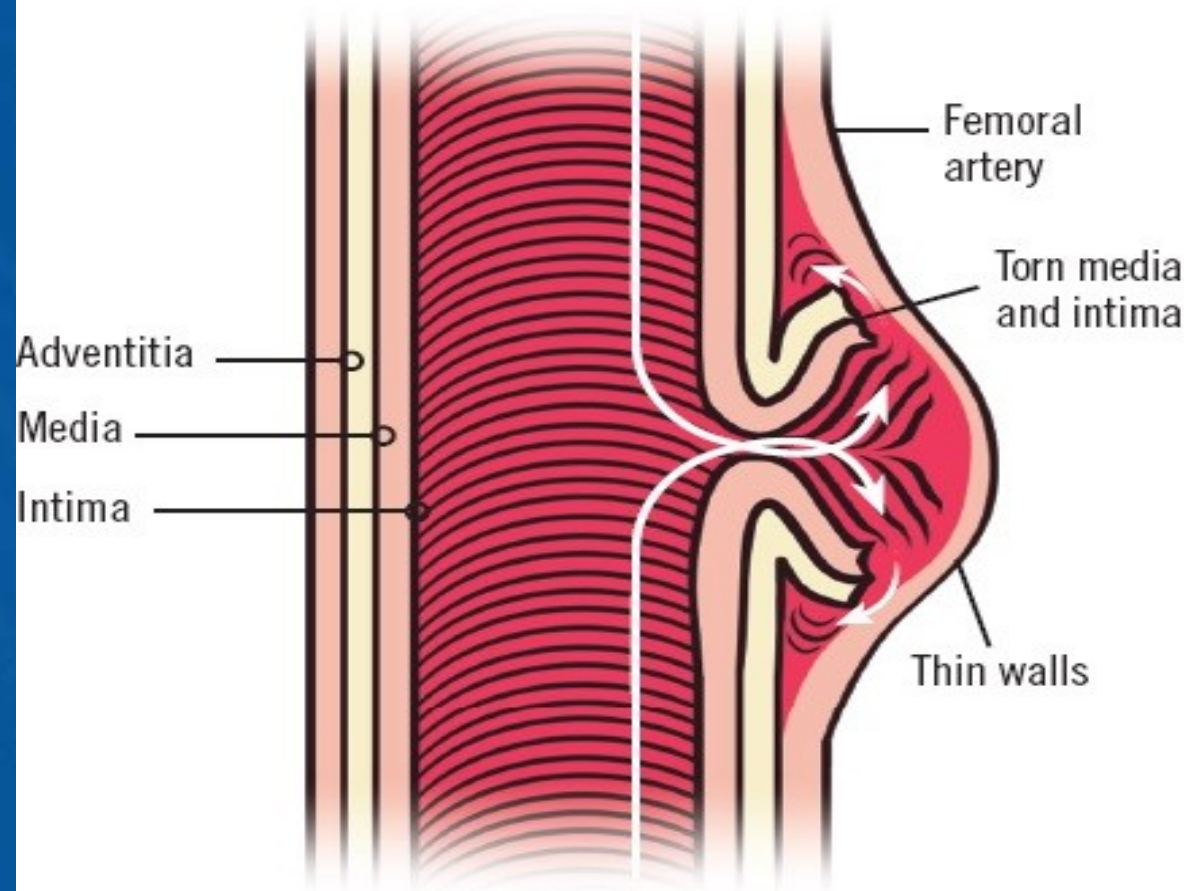
- Dilatation of the entire wall



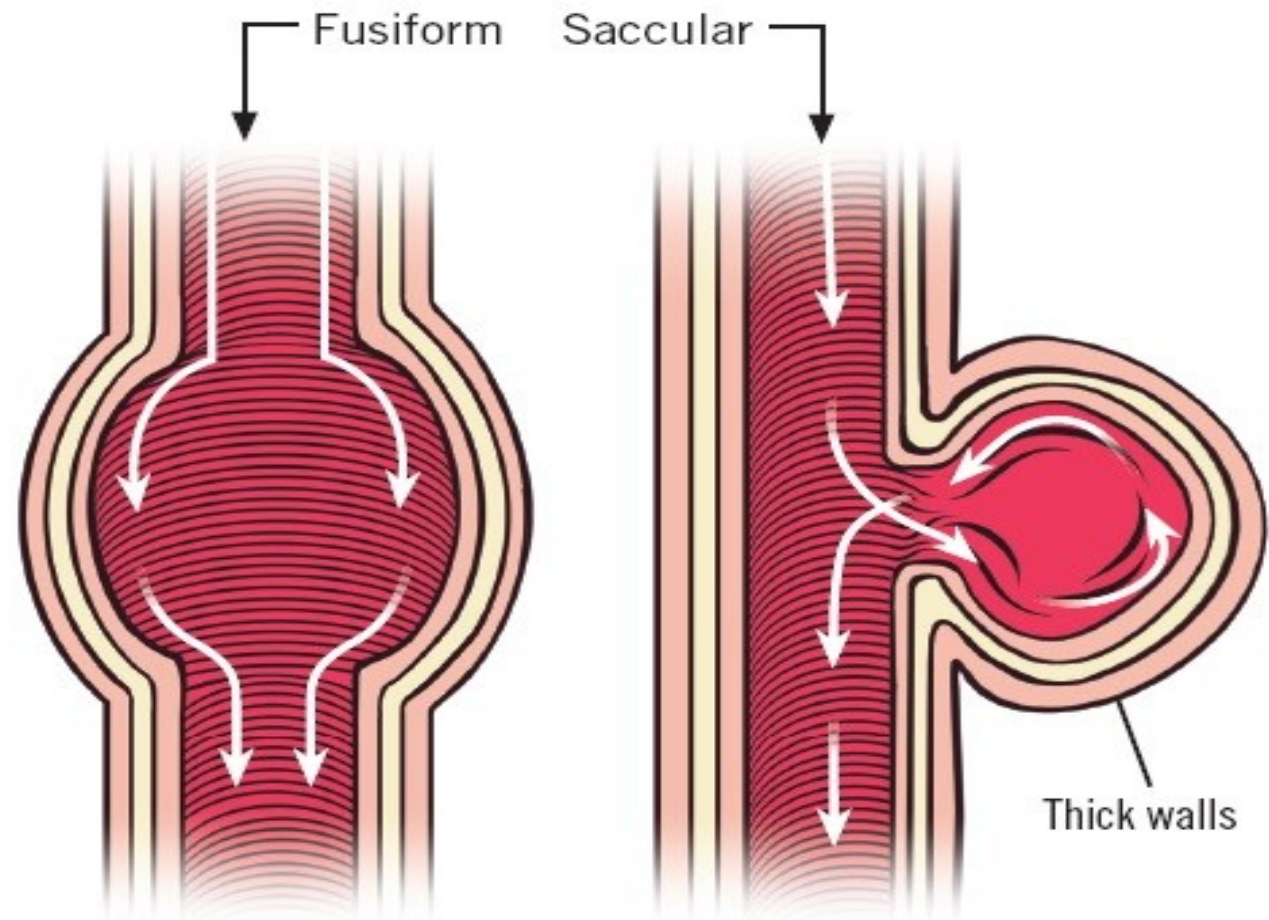
FALSE

- Locally contained hematoma from disruption of vessel wall
- Has a neck and cavity
- Therapy directed at its thrombosis.
- loss of anastomotic integrity at the site of a prior surgical anastomosis.

Pseudoaneurysm



True aneurysms

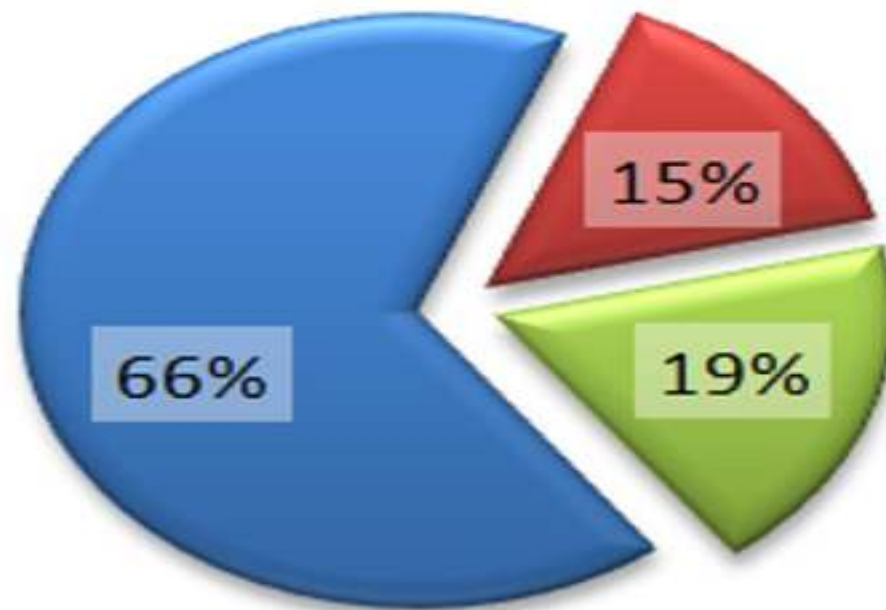


Co-Morbid

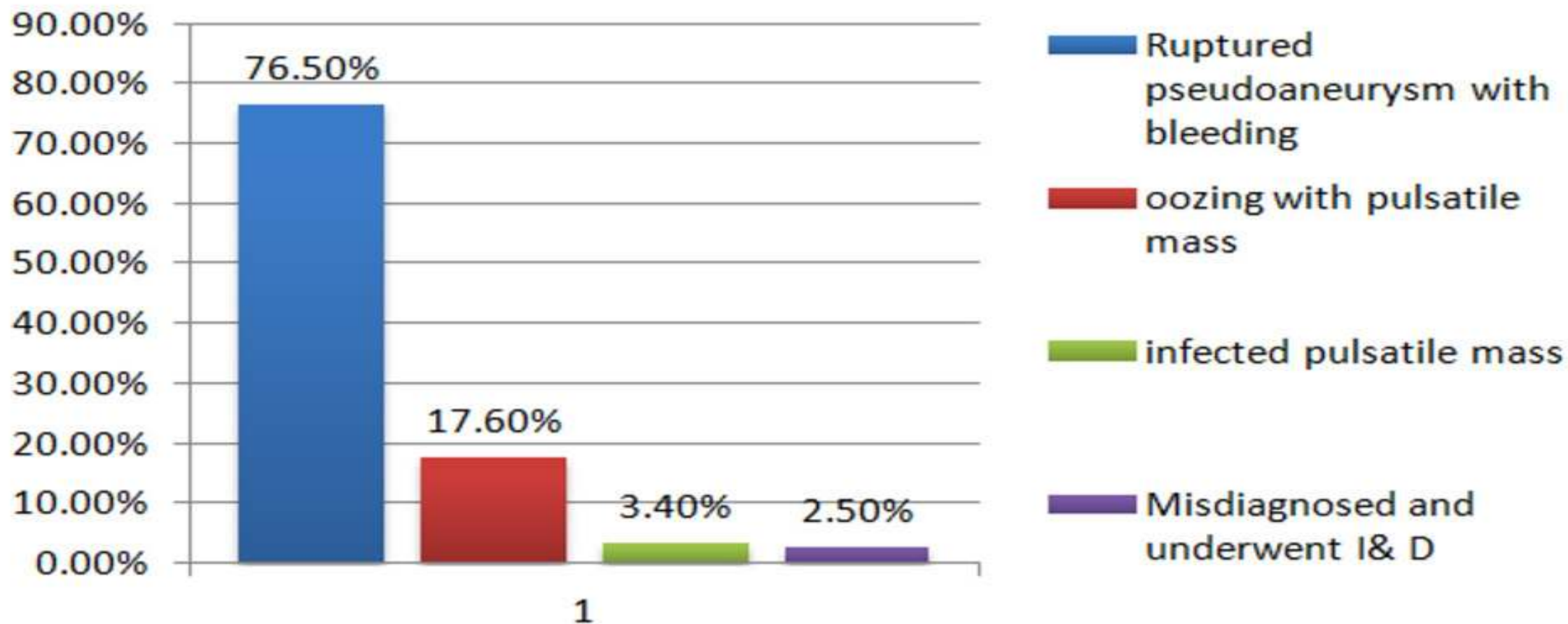
■ HBs Ag+ve

■ AntiHCV +ve

■ HIV +ve + HBV/HCV +ve



Presentation



Evaluation

- patient's demographics (age,sex), site of injury, **duration of addiction**,
- laboratory investigations
- (hepatitis B, hepatitis C virus [HCV], and HIV screening),
- The pseudo aneurysm diagnosis was confirmed with a detailed history, examination, and color Doppler ultrasound



© Samsung Triple Camera

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Sign of chronic addiction Sinus formation





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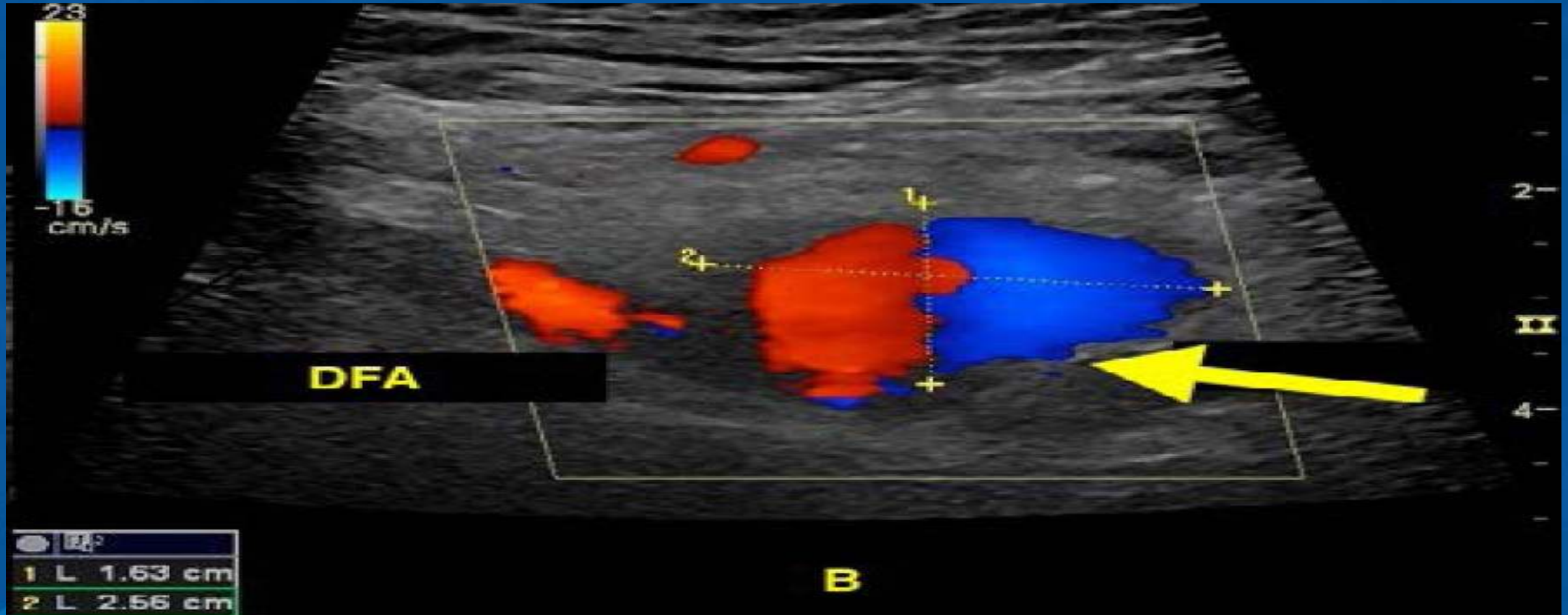
Duplex US

- hallmark of the diagnosis is the demonstration of an echo-free space with evidence of swirling blood flow that communicates the common femoral artery or one of its branches.
- Site of the space is anterior to the artery and can be seen in most cases just below the skin

Duplex US

- reliably distinguishing between a groin abscess and a pseudo aneurysm.
- It can also help screen for associated deep vein thrombosis .

Duplex US appearance

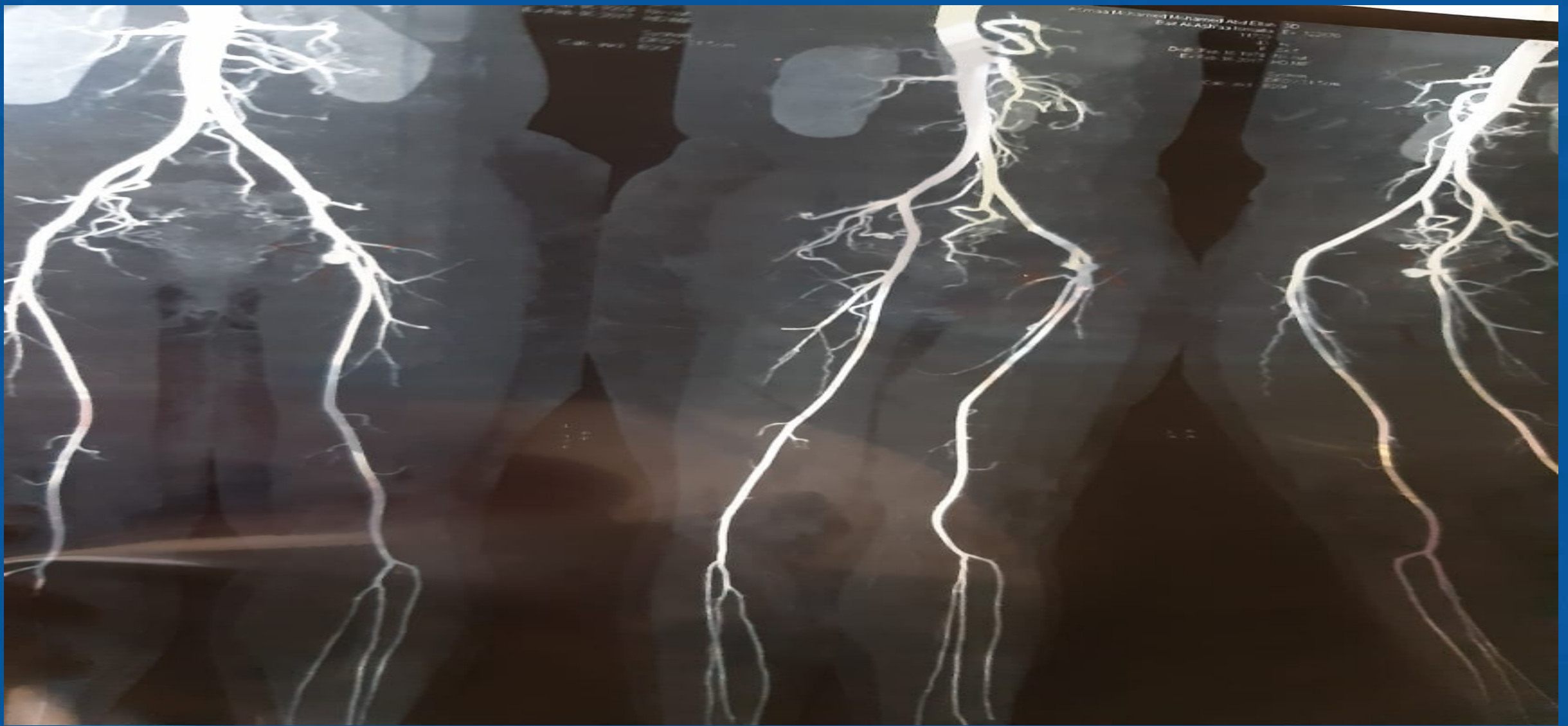


CT angio

- identify any potential indwelling sharp objects in the surgical field, such as broken needle tips.
- Remnant foreign objects left *in situ* could not only be a nidus for recurrent infection but also pose a risk for healthcare workers performing a change of wound dressings for these patients

CT Angio small sized pseudoaneurysm

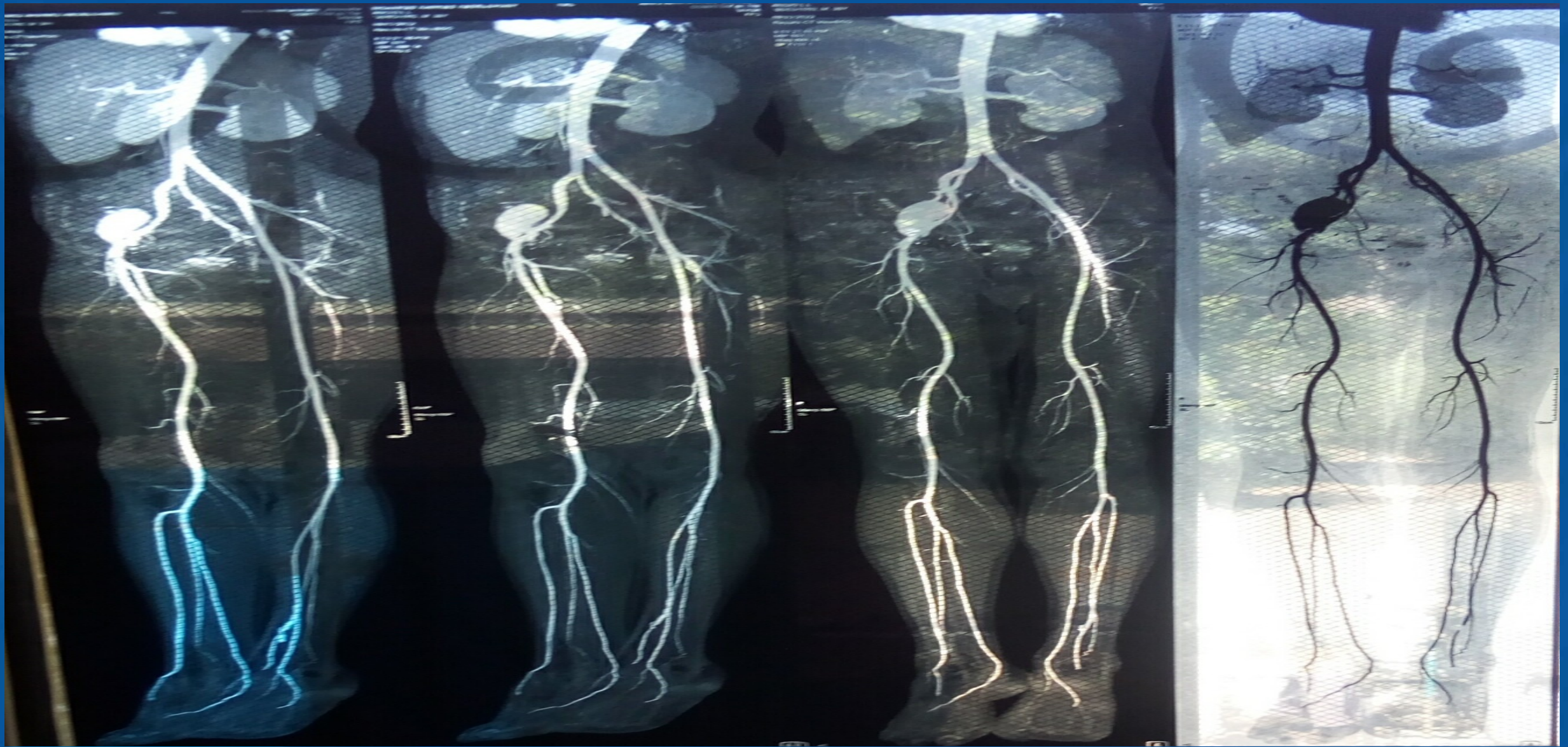




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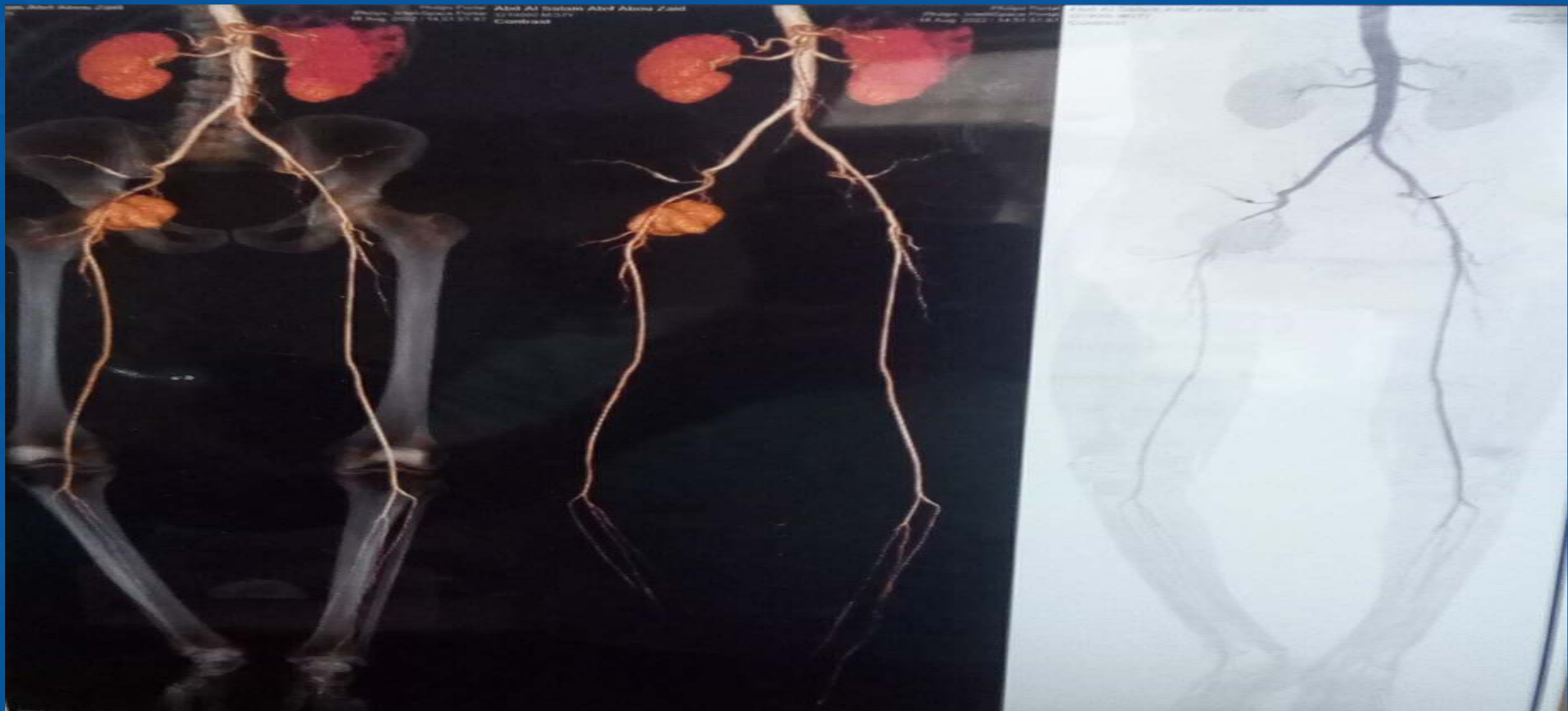




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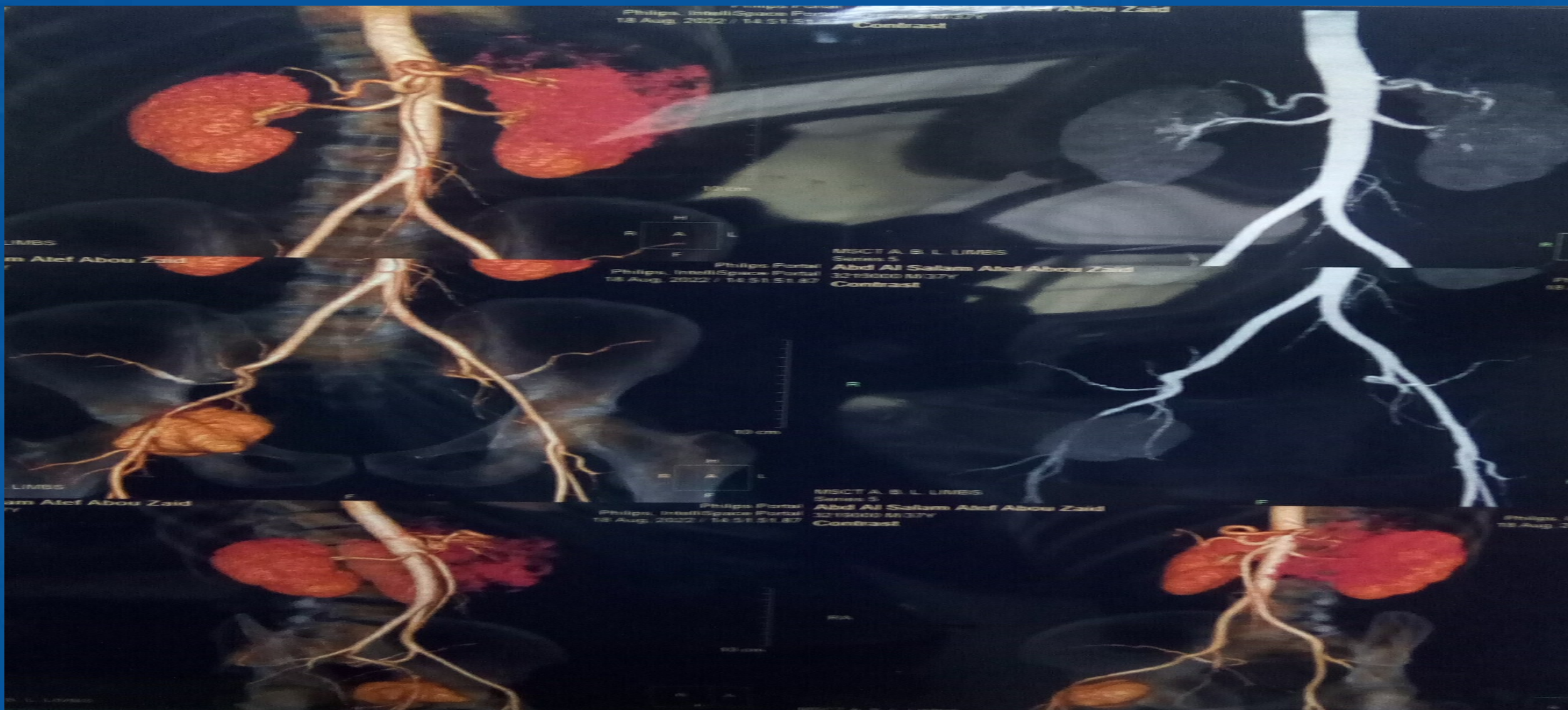




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Perioperative

Bleeding blood loss and hypovolaemic hypotension, compounding resuscitative measures and vascular repair, and time is of the essence.

emergency aid & vigorous resuscitation

Control bleeding ,digital compression , tourniquet ,pad ,finger

Accurate diagnosis

and definitive operative repair.



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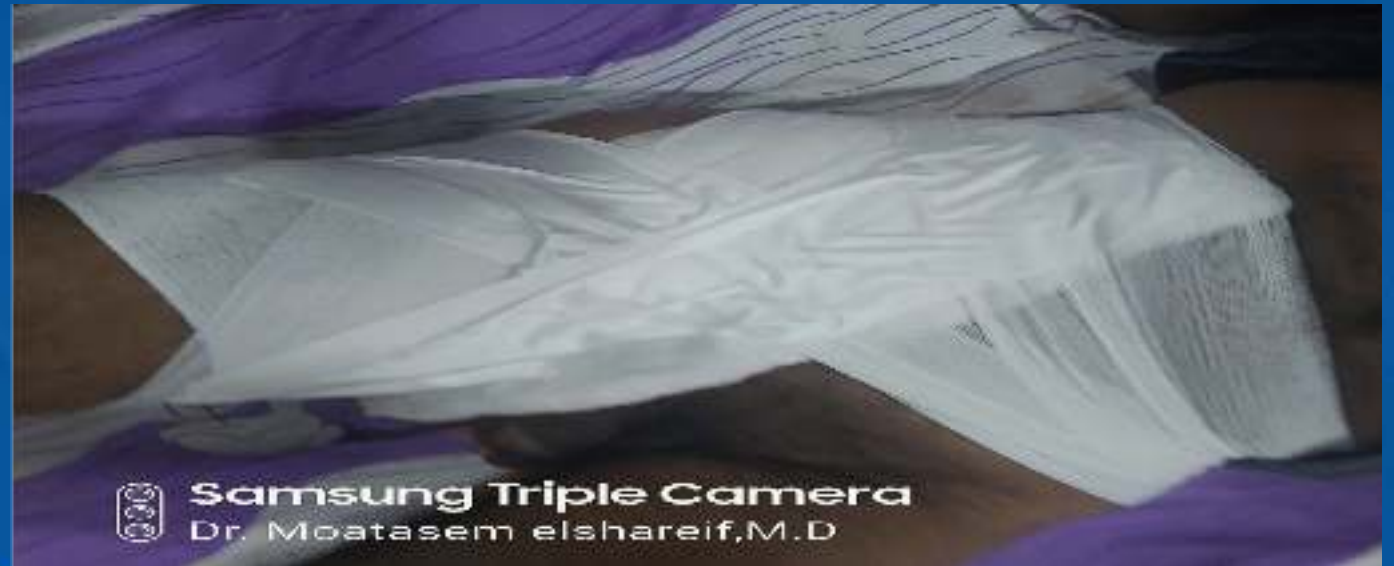
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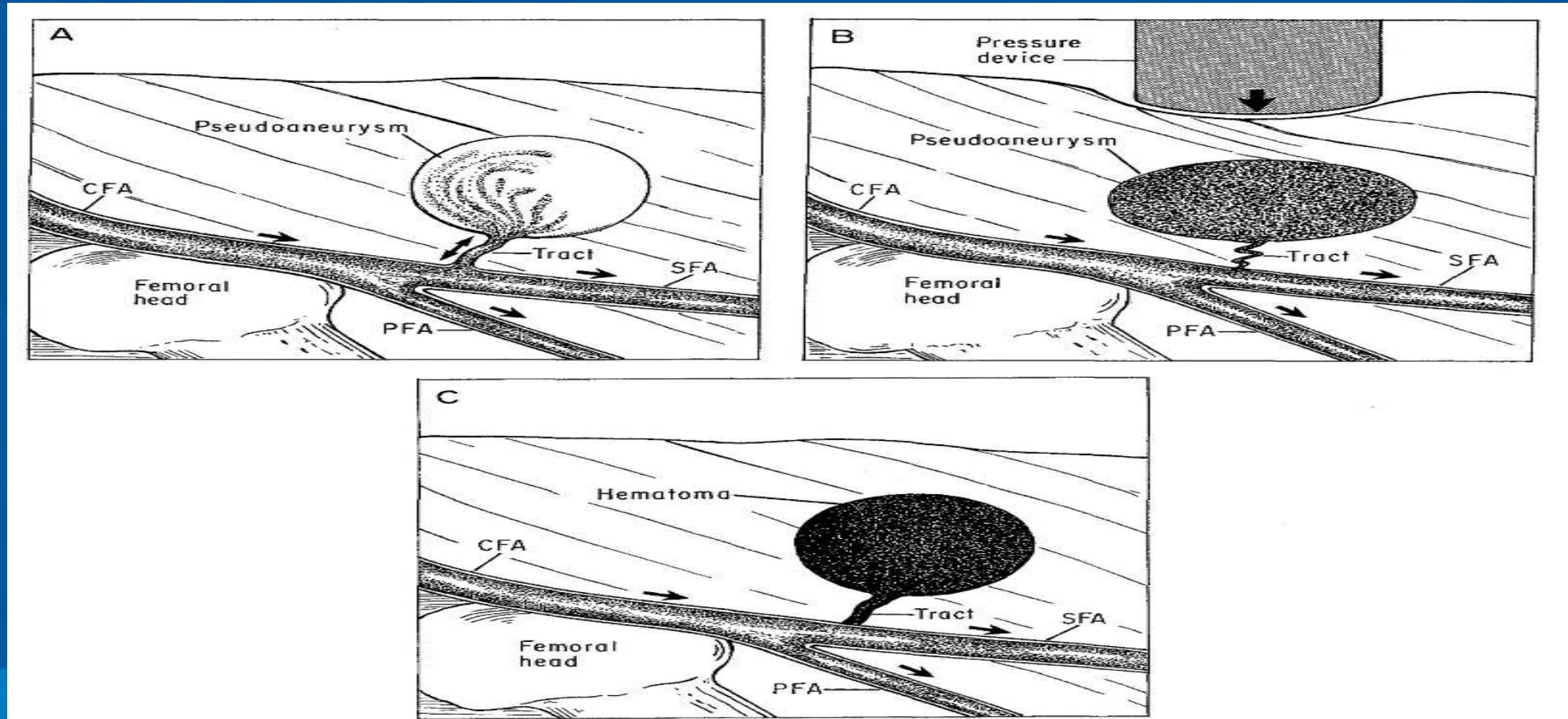
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Small size _{PA} ,TTT by compression under US guide



Antibiotics

increase in matrix metalloproteinase (MMP)-9 levels.

The tetracycline antibiotics have been studied because of their known inhibition of MMPs-9.

doxycycline 100mg BID for 3 weeks

Procedure

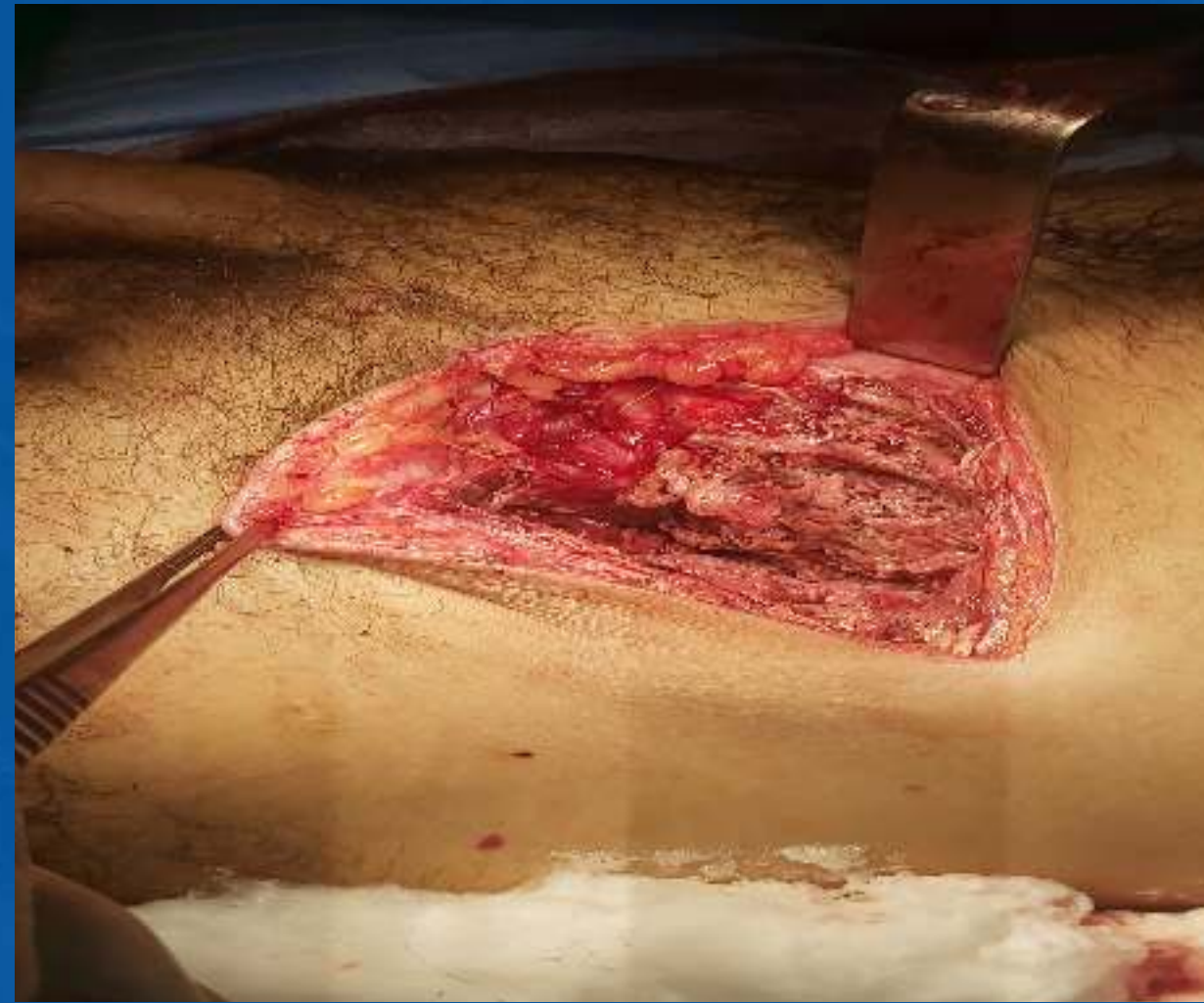
- The surgical technique included a proximal ligation of the distal part of the external iliac vessels through uninfected fields.
- The mass was excised, and debridement of the surrounding local tissue was performed (as it mostly has local infected surroundings). The wound was irrigated with hydrogen peroxide 30%, saline and
- left open for secondary healing



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Need for revascularization

- the absence of limb ischemia in these patients is the development of collateral circulation due to progressive enlargement pseudoaneurysm
- primary revascularization with autologous or prosthetic grafts had documented reinfection, graft disruption, limb loss, and even mortality

Arguments against immediate revascularization

- the lack of suitable superficial veins in these patients (due to chronic venous cannulation),.....
- the high risk of graft infection and anastomotic breakdown,...
- and the possibility of recalcitrant addicts using the graft as a route of injection...

Post operative

- Ischemia (heparin –warfarin-VD)
- Pain (opiate –NSAD)
- Wound care (formal-vac)
- Physiotherapy
- Psychiatry (addiction)









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CT Angio after ligation



Rt ligation Lt covered stent



Conclusion

- The optimal management of infected groin pseudo aneurysm in intravenous drug users is ligation and excision without revascularization.
- other option(revascularization &endo) must be tailored according to condition of patient , experience of surgeon and after complete infection control