

# Grievous Consequences of Leg Pain in a Young Man

Presented by  
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## Department of Orthopaedic Surgery



# Particulars of the Patient

Name : Md Habibur Rahman  
Age : 41 years  
Sex : Male  
Occupation : Business  
Address : Tangail Sadar, Tangail  
Date of admission : 15th June, 2025  
Date of examination : 15th June, 2025

# Chief complaints

Pain in the left leg after walking a little distance for 6 months

Severe pain in the left great toe, 2<sup>nd</sup> toe and 3<sup>rd</sup> toe for 5 months

Blackish discolouration of 3<sup>rd</sup> toe of left foot for 4 weeks and part of great toe for 1 week

# History of present illness

According to the statement of the patient, he was reasonably well 6 months back. Then he developed pain in left leg which is severe in nature, non-radiating, localized specially in calf muscles, appears after walking a little distance of approximately 200-300 meters. The distance is decreasing gradually with time.

## History of present illness (Cont.)

Most of the time pain appears on walking and was relieved by standing for few minutes. But for last 5 months the pain persists even in rest (Rest pain). Then severe pain started in left great toe, 2<sup>nd</sup> toe and 3<sup>rd</sup> toe for 5 months. For last 4 weeks the 3<sup>rd</sup> toe of left foot started to discolour from dusky to blackish gradually. And for last one week part of great toe of left foot also started being blackish.

## History of present illness (Cont.)

He was hypertensive for 10 years and gave history of ischemic heart disease 4 years back. He was also a chain smoker. His bowel-bladder habits were normal. With these complaints he attended to Greenlife Medical College ER and got himself admitted for better management in the Department of Orthopaedics and Traumatology.

## **History of past illness:**

No significant past medical or surgical illness.

## **Medication history:**

As he was hypertensive he took Carvedilol, combination of Frusemide & Spironolactone and Rosuvastatin regularly.

## **Diet and allergic history:**

He is habituated to normal diet and has no known allergy to any diet or drug.

## **Personal history:**

He is non alcoholic, but a smoker. He smokes approximately 25 sticks per day for 20 years.



## **Family history:**

None of his family member has H/O such type of illness

## **Socioeconomic history:**

He has come from middle class socioeconomic status

## **Immunization history**

He is vaccinated against covid-19 and completed EPI schedule.

# **General Examination**

# General Examination

Appearance : Anxious looking

Body built : Average

Co operation : Co operative

Decubitus : On choice

Nutrition : Average

Anaemia : Absent

Jaundice : Absent

Cyanosis : Absent

Oedema : Absent

Dehydration : Absent

Pulse : 92 beats/min

Blood Pressure : 120/70 mm Hg

Temperature : 98 F

Respiratory rate : 16 breaths/min

Lymph Node : All accessible lymph node are  
not palpable

# **Systemic Examination of Musculoskeletal System (Lower Limb)**

# LOOK

- Gait-Limping
- Visible Wasting -Present in left lower limb (calf)
- Gangrene of 3rd toe and part of great toe and ulceration of dorsum of 2nd toe of left lower limb.



# FEEL

- Temperature over the foot : Left foot is colder to touch compared to right
- Tenderness : Present on left great toe and 2nd toe
- Muscle Wasting: Present on left side - approx. 2 cm
- ABPI:  $<0.3$
- Capillary refill:  $>10$  seconds



# MOVE

## Hip Joint

Name of movement	Right	Left	Normal range
Flexion	0-100 <sup>0</sup>	0-100 <sup>0</sup>	0-100 <sup>0</sup>
Extension	10-20 <sup>0</sup>	10-20 <sup>0</sup>	10-20 <sup>0</sup>
Abduction	0-50 <sup>0</sup>	0-50 <sup>0</sup>	0-50 <sup>0</sup>
Adduction	0-50 <sup>0</sup>	0-50 <sup>0</sup>	0-50 <sup>0</sup>
Medial Rotation	0-25 <sup>0</sup>	0-25 <sup>0</sup>	0-25 <sup>0</sup>
Lateral Rotation	0-60 <sup>0</sup>	0-60 <sup>0</sup>	0-60 <sup>0</sup>

# Knee Joint

Movement	Right	Left	Normal range
Flexion	0-120 <sup>0</sup>	0-120 <sup>0</sup>	0-120 <sup>0</sup>
Extension	5-10 <sup>0</sup>	5-10 <sup>0</sup>	5-10 <sup>0</sup>
Medial Rotation	0-50 <sup>0</sup>	0-50 <sup>0</sup>	0-50 <sup>0</sup>
Lateral Rotation	0-50 <sup>0</sup>	0-50 <sup>0</sup>	0-50 <sup>0</sup>

# Ankle Joint

Movement	Right	Left	Normal range
Dorsi-Flexion	0-20 <sup>0</sup>	0-20 <sup>0</sup>	0-20 <sup>0</sup>
PlanterFlexion	0-20 <sup>0</sup>	0-20 <sup>0</sup>	0-20 <sup>0</sup>

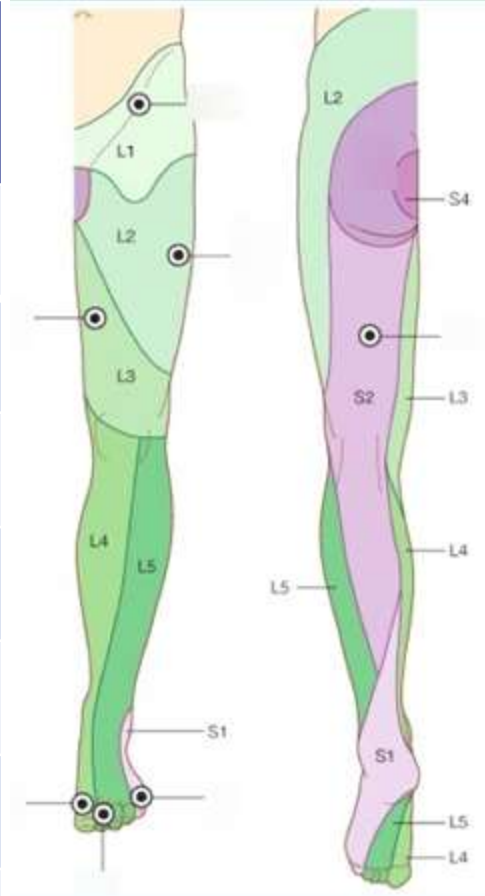
# Vascular examination: Lower Limb

<b>Pulsations</b>	<b>Right</b>	<b>Left</b>
<b>Arteria Dorsalis Pedis</b>	<b>Present, low volume</b>	<b>Absent</b>
<b>Anterior tibial</b>	<b>Present, low volume</b>	<b>Absent</b>
<b>Popliteal</b>	<b>Present</b>	<b>Present</b>
<b>Femoral</b>	<b>Present</b>	<b>Present</b>

# Neurological status: Lower Limb

## Sensory examination:

Dermatome	Findings		
	Light touch	Pain	Vibration and Proprioception
L1	Intact	Intact	Intact
L2	Intact	Intact	Intact
L3	Intact	Intact	Intact
L4	Intact	Intact	Intact
L5	Intact	Intact	Intact
S1	Intact	Intact	Intact
S2	Intact	Intact	Intact



# Muscle Power:Lower Limb

## Hip Joint

Name of movement	Right	Left
Flexion	5/5	5/5
Extension	5/5	5/5
Abduction	5/5	5/5
Adduction	5/5	5/5

## Knee Joint

Name of movement	Right	Left
Flexion	5/5	5/5
Extension	5/5	5/5

## Ankle Joint

Name of movement	Right	Left
Dorsi-Flexion	5/5	5/5
Plantar Flexion	5/5	5/5

# Reflexes: Lower Limb

Jerks	Findings	
	Right	Left
Knee	Intact	Intact
Ankle	Intact	Intact
Plantar Response	Flexor	Flexor

# **Other Systemic Examination**

Reveals no abnormality.



# Salient Feature

Mr.Habibur Rahman, 41 years old man hailing from Tangail, was admitted to this hospital on 15.06.25 with the complaints of severe, non-radiating, localized pain in left leg especially in calf muscles for 6 months which appears after walking a little distance of approximately 200-300 meters and was relieved by simply by standing for few minutes (Claudication pain).

## Salient Feature

But for last 5 months the pain persists even in rest (Rest pain). Then severe pain started in left great toe, 2<sup>nd</sup> toe and 3<sup>rd</sup> toe for 5 months. For last 4 weeks the 3<sup>rd</sup> toe started to discolour from dusky to blackish gradually and for last one week part of left great toe also started to turn blackish.

# Salient Feature

He is hypertensive, non-diabetic, non-asthmatic and had history of IHD. He was a long term cigarette smoker. His bowel-bladder habit was normal.

With these complaints he attended to Greenlife Medical College ER and got himself admitted for better management in the Department of Orthopaedics and Traumatology.

# Salient Feature

On general physical examination, his blood pressure was 120/70 mmHg. All other parameters were within normal limit. On lower limb examination, there was gangrene of 3rd toe and part of great toe and ulceration on dorsum of 2nd toe of left lower limb on look. On feel, left foot is colder to touch compared to right and tenderness present on left great toe and 2nd toe.

## Salient Feature

Muscle wasting of approx. 2 cm was present on left calf. ROM of Hip, knee and ankle were within normal limit. Neurological status was normal on both side, but both DPA and ATA pulsation were absent on left side and present, low volume on right side. Other systemic examinations revealed normal findings.

# Provisional Diagnosis



# Provisional Diagnosis

Peripheral vascular disease (Buerger's disease) of left lower limb with Gangrene of part of great toe and 3<sup>rd</sup> toe with Hypertension with Ischaemic Heart Disease

# Differential Diagnosis

1. Raynaud's phenomenon (LT)

1. Atherosclerosis

1. Spinal Canal Stenosis



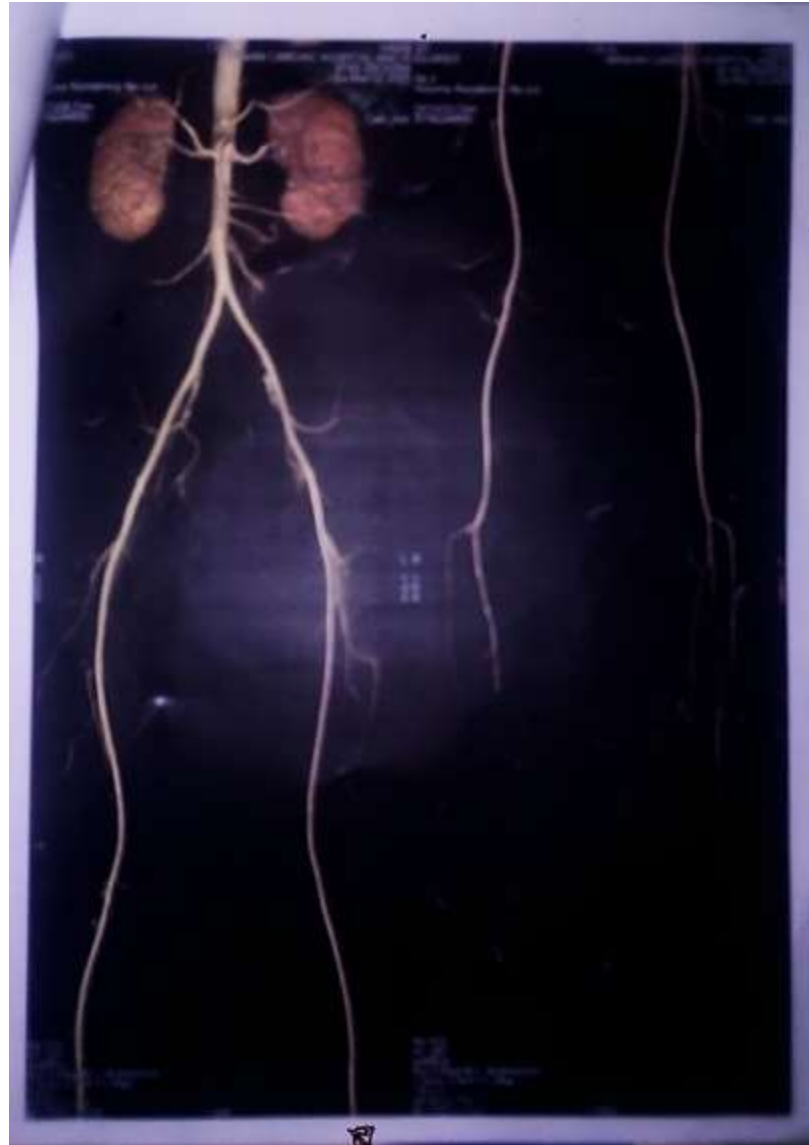
# **Investigations**

# Colour Doppler USG of Lt Lower Limb

About 40%-50% flow reduction in Lt anterior tibial artery And Arteria Dorsalis pedis artery.

About 20%-30% flow reduction in left posterior tibial artery.

# Peripheral Arteriography



# Clinical Diagnosis

Buerger's Disease of left lower limb with  
gangrene of part of great toe and 3rd toe with  
Hypertension with IHD

# Initial Treatment

- Analgesic for pain control
- Consultation with Cardiologist and Vascular Surgeon for proper preparation and planning.
- Proper Blood Pressure control

# Definitive treatment Plan

Below Knee Amputation with long  
posterior flap

# Investigations for Anesthetic Fitness

- CBC- Hb 12.0 gm/dl
- ESR 22 mm in 1st hour
- WBC  $9.56 \times 10^9/L$
- RBC  $4.71 \times 10^{12}/L$
- Platelet  $348 \times 10^9/L$
- Neutrophil 62 %
- PCV 37.0 %

# Investigations for Anesthetic Fitness

S.Creatinine-1.2 mg/dl

RBS : 6.5 mmol/L

S.Electrolyte: Na-142 mmol/L

K-4.2 mmol/L

Cl-105 mmol/L

TCO<sub>2</sub>-25.1 mmol/L



# Investigations for Anesthetic Fitness

- S. Lipid profile: Total cholesterol- 103 mg/dl  
HDL- cholesterol- 43 mg/dl  
LDL- cholesterol- 60 mg/dl  
Triglyceride- 53 mg/dl

# Investigations for Anesthetic Fitness

- HBsAg-Negative
- Anti HCV-Negative
- Blood Grouping & Rh Typing-B positive
- Urine R/M/E:Pus cell- 2-4/HPF

Epithelial Cell-1-2/HPF

RBC-Nil

Sugar-++

Protein-Nil

# Investigations for Anesthetic Fitness

- ECG-Sinus Tachycardia with Extensive MI
- Echocardiography: LVEF-35%
  - Ischemic Cardiomyopathy
  - Dilated LA, LV, Trace MR
  - LV diastolic Dysfunction-Gr 2
  - No Thrombus vegetation or
  - Pericardial effusion

# Chest Xray P/A View

CXR-Normal



# Preoperative preparation

- Counselling
- Informed written consent for surgery, especially for Amputation and intra operative and post operative cardiac risk
- Two units of blood
- Pre-operative Order

# Pre-Operative Order

- Nothing per oral from 06.00 AM of 25.06.25
- Take proper informed written consent
- Continue antihypertensive medication with sips of water within 08.00 AM of 25.06.2025

Operative area was cleaned and shaved.

- Please send the patient to operation theater @ 11.00 AM

# Operation note

- Date & time: 25.06.2025, Time (11AM to 12.45PM)
- Operation Name: Below knee amputation of left lower limb with long posterior flap
- Indication: Buerger's Disease of left lower limb with gangrene of part of great toe and 3rd toe
- Anaesthesia: SAB

# Surgical Team

- Surgeon: Prof. Dr. Md. Zahidur Rahman
- Anesthesiologist: Prof. Dr. Rabeya Begum
- Assistant: Assoc. Prof. Dr. Zubayer Ashraf

Dr. Md. Ekramul Hossain

Dr. Rafid (Intern)



# Operative Procedure

In supine position, with all aseptic precautions, painting was done from left iliac crest to foot and draping done.

An anterior incision was made 10 cm distal to tibial tubercle.

Anterior incision is  $\frac{2}{3}$  and posterior incision is  $\frac{1}{3}$  of total circumference.

The length of posterior flap is 1.5 times the diameter of the leg.

Then the entire circumference of the skin and the underlying fascia was incised.



The anterior compartment musculature was sharply dissected at the most proximal end of the wound



The anterior tibial vessels were identified, isolated, ligated & resected through the deep musculature.

The superficial and deep peroneal nerves were identified and divided using sharp blade with gentle traction.



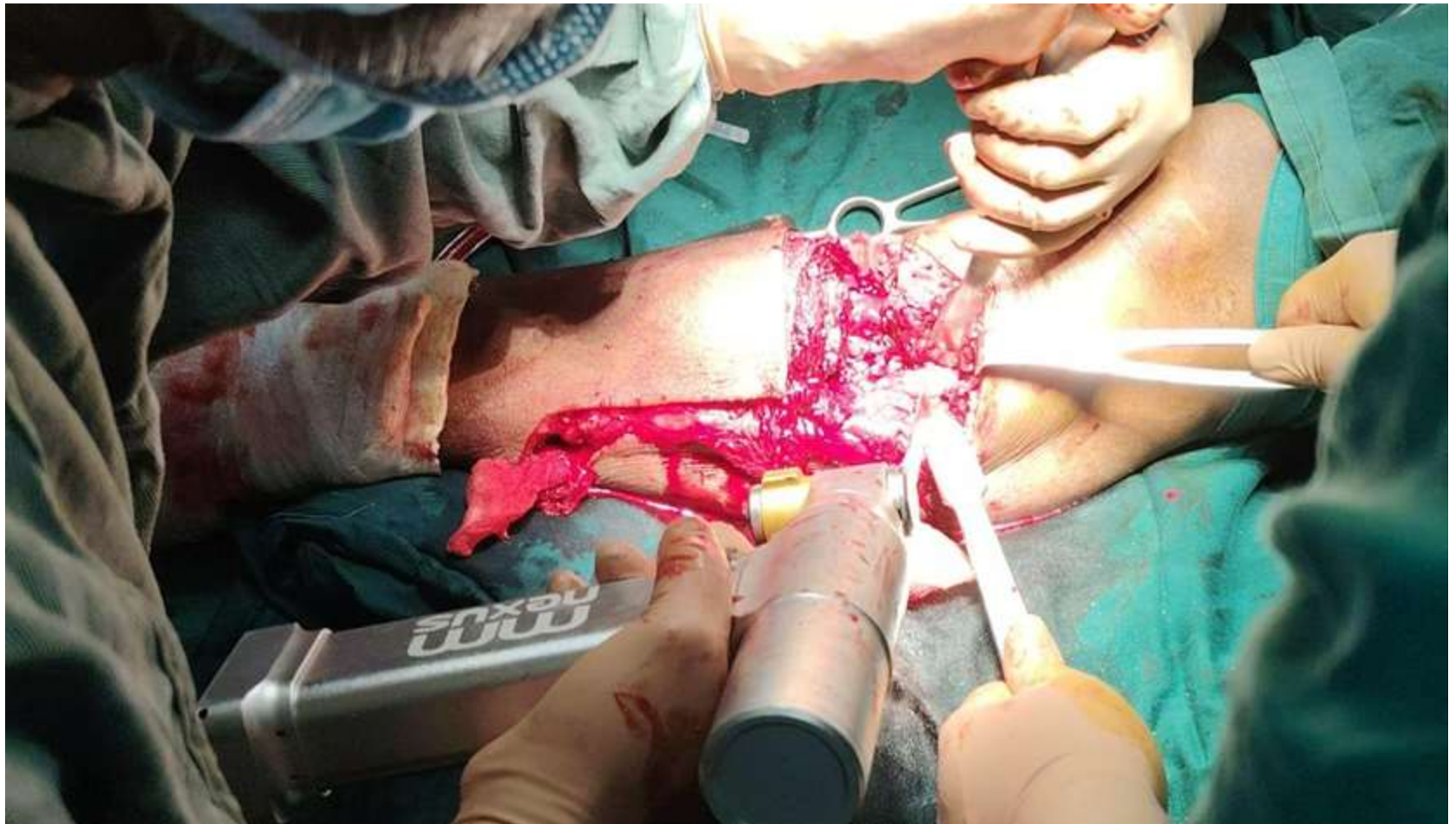


The periosteal flap was elevated and tibial osteotomy was done.



The flap was protected using a moist gauze.

The fibula was identified & fibular osteotomy was done.





Then the posterior musculature was dissected.

The tibial nerve was identified and dissected from the vasculature, then sharply divided under gentle traction.

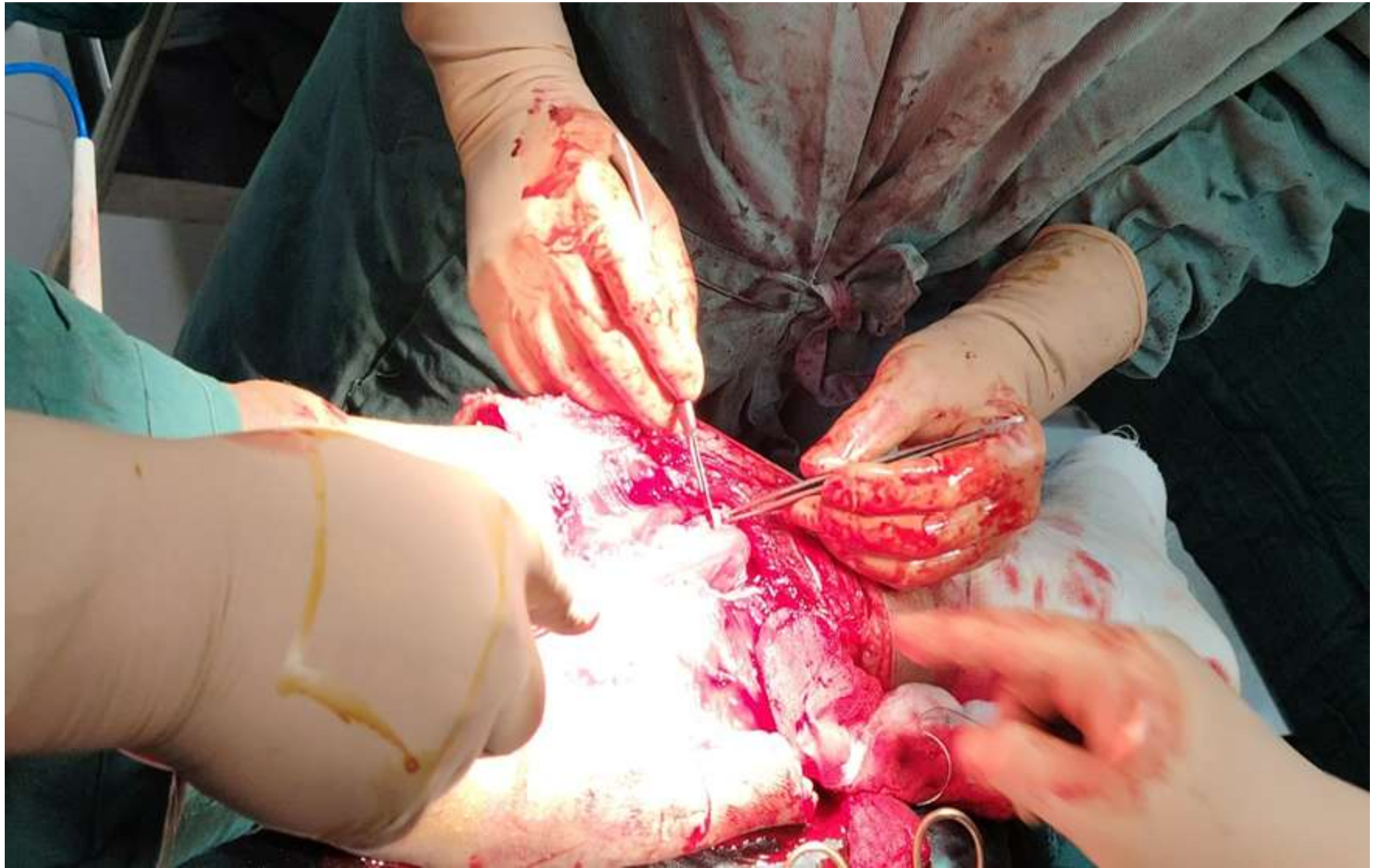


The posterior tibial vessels were identified, ligated and resected.

Then dissection was done of the remaining posterior compartment to the level of the distal tibia cut







The muscles were secured to the anterior end of the tibia by sutures passed through drill holes in bone for myodesis.



A submuscular drain was placed.

After proper haemostasis, closure of wound done in layers where skin was closed using staples.



# Postoperative recovery

POD	Treatment
On the day of operation.	<b>Diet:</b> NPO for 4 hours then liquid to normal Inf. Hartsol 1000 mL IV @25 d/min Inj. Meropenem 1gm I/V-8 hourly Cap. Flucloxacillin 500 mg(1+1+1+1) Inj. Ketorolac 30 mg iv 8 hourly Inj. Esomeprazole 40 mg iv 12 hourly Tab. Ramipril 1.25 mg (1+0+1) Tab. Carvedilol 6.25mg(1+0+1) Tab. Spironolactone+Frusemide 50/20mg (1+1+0) Tab. Rosuvastatin 10mg(0+0+1) Inj. Pethidine 50mg I/M when patient C/R inj. Ondasetron 1 amp I/V along with Pethidine Supp. Diclofenac 50 mg, 1 stick P/R -SOS
Follow up	
<b>Subjective:</b> Pain <b>Pulse:</b> 86 beats/min <b>BP:</b> 110/70 mmHg <b>Temp:</b> 98°F <b>R/R:</b> 16 breaths/min <b>Lungs:</b> Vesicular breath sound. No added sound. <b>Bandage:</b> Dry <b>Drain Tube Collection:</b> 35 ml <b>Urinary output:</b> 300 ml <b>Bowel:</b> Not Moved	<b>Advice</b>  Please keep the operated limb elevated over 1 pillow



POD	Treatment
1 st POD	Diet- Normal
Follow up	
<b>Subjective:</b> Pain <b>Objective:</b> Temp - Normal Pulse - 88 beats/min BP - 130/80 mm, R/R - 16br/m Bandage:Dry I/O: 3000/2800mL Drain collection: 150 mL Assessment:Stable Plan:Cont.treatment	Inj.Meropenem 1gm I/V-8 hourly Cap.Flucloxacillin 500 mg(1+1+1+1) Inj.Ketorolac 30 mg iv 8 hourly Inj. Esomeprazole 40 mg iv 12 hourly Tab. Ramipril 1.25 mg (1+0+1) Tab.Carvedilol 6.25mg(1+0+1) Tab.Spironolactone+Frusemide 50/20 mg(1+1+0) Tab.Rosuvastatin 10mg(0+0+1) Supp.Diclofenac 50 mg, 1 stick P/R -SOS
	Advice
	Encouraged to sit Chest physiotherapy Please keep the operated limb elevated over 1 pillow

POD	Treatment
2nd POD	Diet- Normal
Follow up	
<b>Subjective:</b> Pain <b>Objective:</b> Temp - Normal Pulse - 78 beats/min BP - 130/80 mm, R/R - 16br/m Bandage:Dry I/O:3000/2700mL Drain collection: 70 mL Assessment:Stable Plan:Cont.treatment Catheter off done	Inj.Meropenem 1gm I/V-8 hourly Cap.Flucloxacillin 500 mg(1+1+1+1) Tab.Ketorolac 10 mg(1+1+1) Cap.Esomeprazole 20mg(1+0+1) Tab. Ramipril 1.25 mg (1+0+1) Tab.Carvedilol 6.25mg(1+0+1) Tab.Spirolactone+Frusemide 50/20 mg(1+1+0) Tab.Rosuvastatin 10mg(0+0+1) Supp.Diclofenac 30 mg, 1 stick P/R -SOS
	Advice
	Encouraged to sit Chest physiotherapy Please keep the operated limb elevated over 1 pillow



POD	Treatment
3rd POD	Diet- Normal
Follow up	
<b>Subjective:</b> Pain <b>Objective:</b> Temp - Normal Pulse - 78 beats/min BP - 130/80 mm, R/R - 16br/m Bandage:Dry Bowel: moved Bladder: voided Drain collection: 15 mL Assessment:Stable Plan:Cont.treatment Drain tube off done	Inj.Meropenem 1gm I/V-8 hourly Cap.Flucloxacillin 500 mg(1+1+1+1) Tab.Ketorolac 10 mg(1+1+1) Cap.Esomeprazole 20mg (1+0+1) Tab. Ramipril 1.25 mg (1+0+1) Tab.Carvedilol 6.25mg(1+0+1) Tab.Spironolactone+Frusemide 50/20 mg(1+1+0) Tab.Rosuvastatin 10mg(0+0+1) Supp.Diclofenac 30 mg, 1 stick P/R -SOS
	Advice
	Encouraged to sit Chest physiotherapy Please keep the operated limb elevated over 1 pillow

POD	Treatment
4th POD	Diet- Normal
Follow up	
<b>Subjective:</b> Pain <b>Objective:</b> Temp - Normal Pulse - 76 beats/min BP - 140/80 mm, R/R - 16br/m Bandage:Dry Bowel: Moved Bladder: Voided Assessment:Stable Plan:Cont.treatment with muscle strengthening exercise	Inj.Meropenem 1gm I/V-8 hourly Cap.Flucloxacillin 500 mg(1+1+1+1) Tab.Ketorolac 10 mg(1+1+1) Cap.Esomeprazole 20 mg(1+0+1) Tab. Ramipril 1.25 mg (1+0+1) Tab.Carvedilol 6.25mg(1+0+1) Tab.Spirolactone+Frusemide 50/20 mg(1+1+0) Tab.Rosuvastatin 10mg(0+0+1) Syp. Lactulose(3 tsf@ night)
	Advice
	Encourage to sit Chest physiotherapy Please keep the operated limb elevated over 1 pillow Muscle strengthening exercise

POD	Treatment
5th to 16th POD	Diet- Normal
Follow up	Cap.Cefixime 400mg (1+0+1)
<b>Subjective: none</b> <b>Objective:</b> Temp - Normal Pulse - 76 beats/min BP- 140/80 mm, R/R- 16br/m Bandage:Dry Bowel: moved Bladder: voided Start walking with walker on 5th POD Assessment:Stable Plan:Cont.treatment with muscle strengthening exercise	Cap.Flucloxacillin 500 mg (1+1+1+1)
	Tab.Paracetamol 500 mg(1+1+1)
	Cap.Esomeprazole 40 mg(1+0+1)
	Tab.Riboflavin 5mg (2+2+2)
	Tab.Vitamin B1,6,12 (1+0+1)
	Syp.Lactulose(3 tsf@ night)
	Tab. Ramipril 1.25 mg (1+0+1)
	Tab.Carvedilol 6.25mg (1+0+1)
	Tab.Clopidogrel 75mg (0+1+0)
	Tab.Spironolactone + Frusemide50/20mg(1+1+0)
	Tab.Rosuvastatin 10mg (0+0+1)
	Advice
	Encourage to sit and Chest physiotherapy
	Please keep the operated limb elevated over 1 pillow
	Muscle strengthening exercise

## Rx on Discharge on 17 th POD

- Cap.Cefixime 400 mg (1+0+1) 7 days
- Cap.Flucloxacillin 500 mg (1+1+1+1) 10 days
- Tab.Paracetamol 500 mg(1+1+1) if pain
- Cap.Esomeprazole 20 mg(1+0+1) 15 day
- Tab.Riboflavin 5 mg(2+2+2) 1 month
- Tab. Vitamine B 1,6,12 (1+0+1) 1 month
- Tab. Clopidogrel 75 mg (0+1+0) cont.

## Cont.

- Tab. Ramipril 1.25 mg (1+0+1)- cont.
- Tab. Carvedilol 6.25 mg ( $\frac{1}{2}$ +0+ $\frac{1}{2}$ )- cont.
- Tab. Spironolactone+Frusemide 20/50 mg  
( $\frac{1}{2}$ +0+ $\frac{1}{2}$ )- cont.
- Tab. Rosuvastatin 10mg(0+0+1)- cont.
- Tab. Amitriptyline 25 mg 0+0+1- 1 month
- Tab. Pentoxifylline 400mg (1/2+0+1/2)-1 month
- Syp. Lactulose(3 tsf@ night)- if constipation

# Advice on Discharge

- Take medicine regularly
- Stop cigarettes smoking
- Walk with crutch
- Have follow up visit after 1 month
- Use below knee prosthesis after 2 months



**Pre-Operative**



**Post-Operative**







THANK YOU!

