

# Snake Bite Leads to Compartment Syndrome

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**Abstract:** Snake Bite is a common medical problem worldwide specially in Saudi Arabia, because of the geographical distribution that combines deserts and mountains which is favorable for deferent types of Snakes.

It is important to know that Snake Bites has a wide range of presentation starting from redness and pain till life threatening conditions. We present a 23 years old male patient who had a Snake Bite and he presented with Compartment Syndrome which is an Emergency Case, followed by discussion on the case.

**Keywords:** Snake Bites, Compartment Syndrome, Antivenom.

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## I. INTRODUCTION

**Snake Bites** is a common medical problem in Saudi Arabia that may affects respiratory, cardiovascular or neurological systems and some time it leads to life threatening conditions and death, but it is extremely rare to see a **Compartment Syndrome** as a presentation ]1[,]2[. We report a 23 years old patient who develops an extensive compartment syndrome at the left leg after a snake bite.

## II. CASE REPORT

23 years old male patient admitted through emergency department complaining of left leg swelling and tenderness 1 day ago after Snake bite.

The swelling in the left leg area is getting larger and it is associated with severe pain and small amount of bloody discharge. He has constipation but no history of vomiting or diarrhea. No weight loss, loss of appetite, there was night sweating and fever. The patient as no comorbidities, lives in dessert work as sheep shepherd.

On physical examination patient look unwell his temperature 38.1 – pulse 110/min – blood pressure 119/69 – respiratory rate 15/min – Spo2 100% on room air.

He is conscious and oriented; his chest examination reveals normal S1 and S2 with no added sound or murmur and clean bilateral equal air entry.

Local examination of the left lower limb showed extensive swelling of the left lower limb compared to the right. Swelling was extending from his left groin to the ankle, involving the scrotum. (Fig.1) There was significant tenderness on palpation and the left calf muscles were quite tense. There was increased pain on passive dorsiflexion.

Distal pulses: dorsalis pedis and posterior tibial artery were palpable bilateral capillary refill time at the left toes were 4–5 s.

After the patient was diagnosed as left lower limb compartment syndrome the plan was either to start Antivenom and book him for urgent fasciotomy or admitting him to Medical Ward and start Antivenom with close monitoring.

The surgery was delayed and the patient was receiving Antivenom, FFP and vitamin K due to some irregularities in his blood tests, (PT: >80 s//aPTT: >193 s//INR: >4) and high potassium levels 5.71. creatine kinase 1000 u/l.

After discussion between the orthopedic team and Medical team, the patient was admitted to ICU and it was opted to continue patient on anti-venom, and to with-hold the fasciotomy unless there is no evidence of improvement, and the swelling increases. Patient hence was monitored, his coagulation profile, RFT and CK were repeated. His swelling reduced significantly, and his creatine kinase was monitored and was dropping. There was no deterioration in his kidney function, he was maintaining urine output of 1400 ml/24h . His coagulation profile was normalizing. The orthopedics team was following him up.

Patient was kept for 1 week for observation. He responded well to the anti-venom despite late administration. He received a total dose of 200 ml of polyvalent anti-venom. He was discharged on D7 of admission.



**Fig. 1** picture of the mass as presented

### III. DISCUSSION

Snake Bites have a high incidence in Saudi Arabia and most of the patients are shepherds or peoples whom enjoying the desert[2]. It has a wide index of clinical manifestations starting from a just skin irritation till life threatening conditions such as neurologic, respiratory, and cardiovascular involvement[1]. Sometimes it presents with Compartment Syndrome. Compartment Syndrome occurs when the tissue pressure within a closed muscle compartment exceeds the perfusion pressure and results in muscle and nerve ischemia. It typically occurs subsequent to a traumatic event when the tissue pressure exceeds the venous pressure and impairs blood outflow. Compartment syndrome has been a recognized disease entity since the mid-nineteenth century. Extensive research and clinical observation have allowed for a better understanding of this uniquely complex disease process. Outstanding contributions by clinicians over the past century have provided the basis for our current perspective on its pathogenesis, diagnosis, and treatment. Although Volkmann's early reference to increased "pressure" as the cause of this syndrome was made over 100 years ago, today's modern concept of treatment to prevent contracture based on increased intercompartment pressure has evolved only through the combined efforts of various committed clinicians during the past century.

### IV. CONCLUSION

We reported a 23 years old male patient had a Snake Bite in the left leg, which led to Compartment Syndrome. Treated with Antivenom and surgery was delayed.

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